

Meditations on Geopolitics, Volume 5

Global Steam: The British Long Peace 1860-1914

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Chapter 1

The Rail Junction of History

The capitalist, by transforming money into the commodities which serve as the material constituents of a new product or as factors of the process of labor; by incorporating living labor-power [Arbeitskraft] into their dead objectivity, transforms value – bygone, concretized, dead labor – into capital, into self-valorizing value, into an animated monster, that begins to 'work', like a body possessed of love.¹

Steam and steel; Queen Victoria and the Great Game; Gilded Age plutocrats and gold-backed national imperial capitalisms; the industrial expansion of northern England, Germany's Ruhr, Japan's Tokyo-Osaka region and the US Midwest, and the agro-industrialization of the Irrawaddy, Mekong, Nile and Punjabi watersheds; the creation of the continental breadbaskets of Argentina, colonial Ukraine, and the US Great Plains, and the famine-genocides of Qing China and British South Asia; Jules Verne's Communard submariners and H.G. Wells' time travelers; Emily Dickinson's telegraphic lyricism and Rabindranath Tagore's lyrical anti-colonialism; Friedrich Nietzsche's transvaluation of all values and Sigmund Freud's evaluations of the dreams of professional-class Vienna; the abolition of wageless labor in Cuba, Brazil, Russia and the United States, and the spread of indenture, sharecropping, debt peonage and fully waged labor in its stead; the closing of the last colonial frontiers and the opening of imperial arms races; the emergence of the first internationally-connected working-class parties and anti-colonial mass movements and the appearance of the first international revanchisms and industrial racisms – if Global Cotton was the age of tremors which anticipated the earthquakes of 1859-1871, then Global Steam was the age of the tripwire explosions which culminated in the planetary apocalypse of 1914-1945.

What made these explosions so different from all previous upheavals was not merely their enlarged scale. It was their profoundly systemic nature. Each tripwire explosion was inexorably triggered by a prior explosion, and just as inexorably triggered its successor. If Global

¹ “Indem der Kapitalist Geld in Waren verwandelt, die als Stoffbildner eines neuen Produkts oder als Faktoren des Arbeitsprozesses dienen, indem er ihrer toten Gegenständlichkeit lebendige Arbeitskraft einverleibt, verwandelt er Wert, vergangene, vergegenständlichte, tote Arbeit in Kapital, sich selbst verwertenden Wert, ein beseeltes Ungeheuer, das zu 'arbeiten' beginnt, als hätt' es Lieb' im Leibe.” Karl Marx. *Kapital*. 1867. This is my own translation.

http://www.mlwerke.de/me/me23/me23_192.htm#Kap_5_2. The phrase “als hätt' es Lieb' im Leibe” quotes from a scene in Auerbach's cellar from Chapter 8 of Goethe's *Faust, Part I*, wherein Brandner sings a grim ditty about how an excessively greedy rat was poisoned by a cook.
<https://gutenberg.spiegel.de/buch/-3664/8>.

Cotton was history on rails, then Global Steam was history as a rail junction. This is not to dismiss or downplay the role of spontaneity, contingency and chance during this period, but simply to underline the fact that this rail junction was experienced by the majority of human beings as the negativity of famine-genocides, debt peonage, and despotic industrialism, and only intermittently as the utopian possibility of self-enrichment, land acquisition or migration to frontier settlements.

Three factors distinguished this rail junction of history from its on-rails predecessor. The first was the industrialization of planetary transportation, the second was the industrialization of planetary demography, and the third was the industrialization of economic productivity (defined as the sum total of humanity's productive forces plus the relations of production). None of these three industrializations occurred in a linear or uniform fashion. They developed at different times, at different speeds, and at different locations in the world-system, generating explosive internal as well as external contradictions.

Despite their differences, all three industrializations followed a single hegemonic logic. This was the opening of paths of industrial possibility, and the closing of paths we will call industrial closure. These paths of industrial possibility were most open to the citizens of the five core polities of Global Steam, namely Belgium, Britain, France, the United Provinces and the United States. All five experienced significant industrialization, urbanization and democratization during Global Steam.

The price of this expansion of industrial possibility in the core was the industrial closure carried out through neocolonialism in the global semi-periphery and colonialism on the periphery. This closure was experienced as continental-scale forms of economic immiseration, planetary forms of imperial despotism, and unprecedented levels of cultural annihilation by the majority of the planetary population of 1.6 to 1.7 billion in 1900.

Belgium held its first elections under universal male suffrage in 1894, at the same moment its empire in the Congo was committing genocide on behalf of rubber plantations. Britain enlarged its electoral franchise in 1867 and 1884, while expanding its colonial empire throughout vast areas of Africa, South Asia and Southeast Asia and committing the South Asian famine-genocides. France established the Third Republic while murdering tens of thousands of Communards in 1871 and creating a despotic empire in West Africa and Indochina. The Netherlands enlarged its electoral franchise in 1887 and 1896 while also expanding its control over the Indonesian archipelago via a series of bloody frontier wars.

Most striking of all, the United States defeated the 1860-1865 Confederacy, abolished slavery, and expanded the franchise to include African American males. Yet the US also inflicted genocidal violence on the indigenous peoples of its western territories, reincarcerated its former slaves via Jim Crow and segregation, and annexed Hawaii and colonized the Philippines and Puerto Rico in 1898.

The paths of industrial possibility were open to a lesser but still significant extent to the semi-peripheral polities of Global Steam. These paths enabled Italy, Germany and Japan to launch their own national imperial capitalisms via wars of dynastic unification. They also enabled the Austrian, Ottoman, Portuguese, Spanish and Russian empires of capital to launch their own limited industrialization projects and to impose despotic forms of industrial closure on their external or internal colonies, albeit under conditions of neocolonial dependence. Finally,

they enabled the oligarchic republics of Central and South America, the oligarchic republics and constitutional monarchies of Europe, and the English-speaking imperial offshoots of Australia, Canada and New Zealand to undergo significant albeit uneven processes of industrialization, urbanization and democratization. That said, all of these polities remained dependencies of core capital markets, core consumer demand, and core technologies.

The paths of industrial possibility were the least open to the dynastic polities of Qing China, Ethiopia, Iran and Thailand, and to the population of the colonial periphery. While these polities and populations did achieve some degree of local industrial accumulation, they remained locked in neocolonial and colonial dependence vis-a-vis wealthier semi-peripheries and core polities.

The opportunities created by these paths of industrial possibility were most palpable in the industrialization of transportation. Steamships crossed oceans, railroads crossed continents, and capital flowed across imperial borders at accelerating rates, as the age of wind and wood was superseded by steam and steel. On land, the total length of the world's railways increased ninefold from 105,025 kilometers in 1860 (half of which was in Europe) to 975,643 kilometers in 1910 (40% located in the US, 32% in Europe).² The cost of transporting a bushel of wheat from Chicago to New York via rail fell dramatically from 34 cents in 1873 to 8 cents by 1905.³

At sea, the time required to sail from Liverpool to New York fell from two weeks in the early 1830s to less than seven days by the 1880s, reducing the freight costs for a bushel of wheat transported from New York City to Liverpool from 21 cents in 1873 to 3 cents by 1901. The average steamship tripled in size and total tonnage grew sixteen-fold between 1860 and 1900, and total steamship tonnage surpassed that of wind-powered vessels during the 1880s:

² B.R. Mitchell. *International Historical Statistics*. New York: Palgrave-Macmillan, 2013. Table F1: Length of Railway Line Open.

<https://www.eui.eu/Research/Library/ResearchGuides/Economics/Statistics/DataPortal/IHS>

³ D.B. Grigg. *The Agricultural Systems of the World: An Evolutionary Approach*. Cambridge: Cambridge University Press, 1974 (48).

Figure 1. British-registered tonnage of sailing vessels versus steamships, 1860-1900.⁴

Year	Sailing vessel tonnage	Steamship tonnage	Sailing vessel average tons	Steamship average tons
1860	4,204,000	454,000	164	227
1870	4,578,000	1,113,000	197	350
1880	3,851,000	2,724,000	193	519
1890	2,936,000	5,043,000	207	681
1900	2,096,000	7,208,000	195	783

The industrialization of transportation generated a profound spatialization of economics, politics and culture. It is worth recalling that the three world business cycles of Global Cotton primarily affected the core and semi-peripheral polities of the world-system, regions comprising somewhere between one-quarter to thirty percent of humanity, and had only limited influence on the vast majority of the human population which resided in the periphery. By contrast, the five world business cycles of Global Steam reached deep into every level of the world-system, and directly imposed the economic innovations, political institutions and cultural practices of the core on the semi-periphery and periphery. This imposition is captured by Shashank Kela's insightful commentary on the long-term effects of British colonial rule on South Asia:

The unification of subregional and regional markets through an expanding grid of communications; new instruments like the printing press and the radio, capable of disseminating cultural patterns over long and longer distances; a philosophical arsenal that questioned the very basis of caste; a centralized, coherent and impersonal apparatus of administration and coercion, enabling the state to intervene in economic policy and suppress discontent in ways undreamt of by its predecessors; all these can be regarded as the byproducts of colonialism. Certainly they belong to the realm of structure rather than intention. Yet so fundamental are they to its effect that it seems to me to make little sense to isolate the one from the other, to separate policy from the overarching institutional and technical structures that pressed upon and reshaped society as much or more than it did. The true uniqueness of the colonial state resides less in its origins (though origins count for something) than in the striking novelty of its structures and ideology. For this reason, it impinged upon Indian society in ways radically different from its predecessors.⁵

⁴ British-registered shipping comprised the vast majority of maritime activity during Global Steam. Simon Ville. "Chapter 11: Transport." In: *The Cambridge Economic History of Modern Britain, Volume I: Industrialisation, 1700-1860*. Edited by Roderick Floud and Paul Johnson. Cambridge: Cambridge University Press, 2004 (303).

⁵ Shashank Kela. *A Rogue and Peasant Slave: Adivasi Resistance, 1800-2000*. Navayana: New Delhi, 2012 (245-246).

We will see in later chapters how this industrial-era colonial state perpetrated colossal crimes against their populations via a series of famine genocides and bullet genocides, and how the colonized peoples fought back by inventing new forms of political association, economic organization and cultural solidarity. Figure 2 summarizes the five world business cycles of Global Steam and their most significant geopolitical events:

Figure 2. The Five Business Cycles of Global Steam, 1858-1914.

Period	Economic Events	Major Geopolitical Events
1858-1869	Civil War-era expansion of US economy 1860-1865, financial crisis 1867-1869, recession 1869-1870	Britain defeats Indian uprising (1857-1858), Britain and France defeat China in Second Opium War (1858-1860), France colonizes Vietnam (1858), Russia colonizes outer Mongolia (1858), US accession of Minnesota (1858), Indigo Mutiny of Bengal (1859), Union defeats Confederacy in US Civil War (1861-1865), US accession of Kansas (1861), unification of Italy (1861), France colonizes Cambodia (1863), US accession of West Virginia (1863), US accession of Nevada (1864), Austro-Prussian War (1866), defeat of French neocolonial intervention in Mexico (1867), US accession of Nebraska (1867), US purchase of Alaska from Russian empire (1867)
1870-1879	US railroad boom 1868-1873, international panic of 1873, six-year US depression 1873-1879	Coalition of Prussian and German armies defeat France in Franco-Prussian War (1870-1871), Paris Commune (1871), Germany unites as a dynastic empire (1871), return of republican rule in France (1872), US accession of Colorado (1876), famine genocides in India and China (1876), Russia defeats Ottoman empire in Russo-Turkish War (1877-1878), limited sovereignty of Bulgaria, Montenegro, Romania and Serbia (1878)
1880-1892	US railroad boom 1880-1883, US recession 1882-1885, railroad boom 1886-1892	France colonizes Tunisia (1881), Berlin conference partitions Africa (1885), Belgium colonizes Congo (1885), US accession of Montana, North Dakota, South Dakota and Washington (1889), US accession of Idaho and Wyoming (1890)
1893-1904	US depression 1893-1897, US expansion 1898-1901, recession 1902-1904	France colonizes Cote d'Ivoire and Laos (1893), Japan colonizes Taiwan (1895), US accession of Utah (1896), France colonizes Madagascar (1897), US defeats Spain in Spanish-American War (1898) and colonizes Cuba, Guam,

		Hawaii, the Philippines and Puerto Rico, Cuba becomes independent (1902), US annexes Panama Canal (1904)
1905-1914	British, European and Japanese expansion, US recessions in 1907-1908, 1910-1911, and 1913-1914	Japan defeats Russia in Russo-Japanese War (1904-1905), Japan colonizes Korea and Chinese Manchuria (1905), France colonizes Morocco (1906), US accession of Oklahoma (1907), Austria annexes Bosnia-Herzegovina (1908), Italy invades Ottoman Libya (1911), US accession of Arizona and New Mexico (1912), Bulgaria, Greece, Montenegro and Serbia defeat Ottoman empire in First Balkan War (1912-1913), Serbia and Greece defeat Bulgaria in Second Balkan War (1913)

The second factor differentiating Global Steam from its predecessor was the industrialization of demography. Whereas the world population rose 29% from an estimated 1 billion in 1815 to 1.29 billion in 1860, its growth accelerated during Global Steam to reach 1.78 billion by 1910, a 38% increase over five decades.

The reason for this acceleration is that the polities of the core and selected regions of the semi-periphery entered the first stage of the three-stage fertility transition typical of all fully industrialized societies. This first stage was a population boom generated by high average fertility rates (e.g. 5 to 7) and a decrease in average death rates due to improvements in medical care and sanitation as well as increased average food consumption. The second stage was a period of slower population growth, as fertility rates fell to 3.5 to 5 due to higher literacy for women, urbanization, and the spread of birth control. The third stage was population stabilization as fertility rates fell to the replacement level of 2.1 or even lower.

Much of the decrease of death rates during Global Steam was due to a combination of the popularization of soap,⁶ laundry facilities and bathing,⁷ the scientific discoveries of bacteria and viruses (the landmarks include Louis Pasteur's invention of pasteurization between 1862 and 1865, Joseph Lister's discovery of the antiseptic properties of carbolic acid in 1865, and Robert Koch's identification of anthrax in 1876, tuberculosis in 1882, and cholera in 1884), and

⁶ The consumption of soap rose in Britain from 1.4 kilograms in 1791 to 3.6 kilograms in the 1860s, and 6.8 kilograms by 1914. Peter Ward. *The Clean Body: A Modern History*. Montreal: McGill-Queen's University Press, 2019. Chapter 4.

⁷ "By 1853 London hosted ten public baths and washhouses, which together provided 380,000 baths during the first half of the year, a sign that new notions about personal cleanliness were reaching a broader audience. Over the coming decades the public bath movement spread its blessings to the larger cities and towns across Britain. By the First World War civic authorities were supporting 340 bathhouses, including 50 in London alone. All offered facilities for private bathing, with modest charges for a simple cold bath or shower and higher ones for warm baths and more elaborate fittings. Many also supplied the necessities for doing laundry, and a growing number provided swimming pools as well." Peter Ward, *The Clean Body*, Chapter 2.

improved urban water and sanitation systems.⁸ By the end of Global Steam, all of the polities of the core and selected regions of the semi-periphery entered the second demographic stage, i.e. falling fertility rates and lower death rates.

The consensus population estimates of the fourteen world empires between 1860 and 1910 are listed below. The population of the United States tripled (partly due to internal population growth and partly because of emigration from the rest of the world), that of the Russian empire nearly tripled, while the populations of the British and Dutch imperial cores doubled. The populations of Belgium, Germany and Portugal's Iberian core also nearly doubled in size.

At the same time, the populations of the Central and South American polities as well as Japan increased by about half, slightly faster than the global average.⁹ The populations of Austria, of Britain's vast colonial periphery, of Italy, and of Spain's Iberian core all increased by two-fifths, matching the global average.

The two regions of below average demographic growth were Qing China, whose population increased by only a tenth, and the imperial core of France, which grew only 3%. The slower stagnation of China was due to the horrific population losses experienced during the final years of the Taiping uprising, as well as by the increasing debility of Qing rule during the final decades of dynastic rule.

The special case of France was due not to internal dysfunction, but to France's unique status as the first of the four most industrialized polities of Global Cotton – the others were Belgium, Britain and the United Provinces – to enter its fertility transition. France's fertility rates had already begun to fall during the Napoleonic era, dropping below 4 in 1810 and declining steadily thereafter to 3.4 by 1860. By comparison, the British fertility rate was 4.97 in 1810 and

⁸ “The second half of the nineteenth century saw major investments in urban sanitary infrastructure throughout the Western world. All the great cities of Western Europe and North America, as well as many smaller ones, poured money into centralized water distribution and sewer systems, creating underground networks of pipes and tubes linking overground networks of buildings and rooms. Whatever the limitations of its distribution infrastructure, Britain led the rest of Europe in bringing water into the home; at the end of the century household water connections were the norm in its urban places. By then most large and mid-sized German cities also had water distribution networks, but smaller communities still lacked them, and the proportion of households connected lagged behind that in Britain. Italy, in turn, trailed well behind northern Europe. The 1886 survey revealed that, at best, 12 percent of Italians had direct access to running water, a finding that began to encourage major investments in urban water supply systems there as well.

In mid-century North America some middle-class homeowners experimented with self-contained household supply and disposal systems of their own. Water distribution networks also served a growing number of cities from the early years of the century, though commonly they were small, underfinanced, and plagued with technical problems. Rapid expansion replaced slow growth in the 1870s, however, and by the end of the century some 3,200 American urban centres had a municipal waterworks of sorts, as did well over 200 Canadian cities and towns. Information on domestic connection rates is scant for both countries, but per capita consumption was substantially higher in the New World than in the Old.” Peter Ward, *The Clean Body*, Chapter 2.

⁹ Our World in Data. <https://ourworldindata.org/world-population-growth>.

4.86 in 1860. While the reasons for this early transition remain obscure, the most likely explanation is that France's 123 years of tenure as the co-hegemon of 1648-1775 triggered significant changes in property relations, in systems of rural land ownership, and in the cultural status of women which favored lower fertility rates.¹⁰

During Global Steam, all other core polities and a certain number of semi-peripheries entered their own fertility transitions, with a time lag relative to France of sixty to ninety years. British fertility rates dropped below 4 in 1892 and below 3 in 1910, the Dutch rate dropped below 5 in 1893 and below 4 in 1910, whereas Belgium's rate dropped below 4 in 1892.

In the United States, a semi-periphery during Global Cotton which ascended to core status in 1862, the fertility rate dropped below 5 in 1870 and below 4 in 1897.¹¹ The transition in the semi-peripheral German empire was even faster, falling below 5 in 1899 and below 4 by 1911. By 1914, the French fertility rate fell to 2.34 while the British figure dropped to 2.88.¹²

Figure 3 below lists the populations of the twenty most powerful and numerous polities of Global Steam, comprising over nine-tenths of the world population of 1.7 billion in 1910 – an unprecedented and unrepeatable moment of political and demographic concentration, unlike any previous or subsequent period of human history. These twenty polities included fourteen world empires, four dynastic empires and two republics:

¹⁰ For an intriguing partial explanation as to why the French transition was so early, see: Neil Cummins. "Marital fertility and wealth during the fertility transition: rural France, 1750–1850." *Economic History Review* (2012).

¹¹ It is worth noting that the same transition took place for the entire human race exactly one hundred years later, and would take twenty-five years rather than five decades. World fertility fell below 5 in 1967, below 4 in 1977 and below 3 in 1993. Our World in Data. <https://ourworldindata.org/fertility-rate>.

¹² This is data from Gapminder.org.

Figure 3. Populations of the twenty most powerful polities of Global Steam, 1860-1910.¹³

Polities	1860	1870	1880	1890	1900	1910	% World 1910
British core	28.9	30.4	34.6	37.5	41.2	44.9	2.6%
British semi-peripheral offshoots ¹⁴	4.8	5.8	7.1	8.7	10	12.6	0.7%
British empire (core plus offshoots plus colonial peripheries)	290	300	303.7	345.4	385.3	424.5	25.0%
United States core	31.4	39.8	50.2	63.0	76.2	92.2	5.4%
US empire (core plus colonial peripheries)	--	--	--	--	89.2	102.2	6.0%
German core	37.7	41.0	45.2	49.4	56.4	64.9	3.8%
German empire (core plus colonial peripheries)	--	--	--	--	71.4	79.9	4.7%
French core	36.5	36.9	37.5	38.4	38.9	39.5	2.3%
French empire (core plus colonial peripheries)	N/a	N/a	N/a	N/a	N/a	70.7	4.2%
Russian empire	74.1	84.5	97.7	117.8	132.9	160.7	9.5%
Austrian empire	36	35.8	37.9	41.3	45.2	49.5	2.9%
Dutch core	3.3	3.6	4.0	4.5	5.1	5.9	0.3%
Dutch empire (core plus colonial peripheries)	N/a	28.9	N/a	37.6	42.7	47.3	2.8%
Belgian core	4.8	5.1	5.5	6.1	6.7	7.4	0.4%
Belgian empire (core plus colonial peripheries)	--	--	--	16.1	16.1	15.9	0.9%
Italian core	25.0	25.8	28.4	30.9	32.5	34.6	2.0%
Italian empire (core plus colonial	--	--	--	--	33.2	35.3	2.1%

¹³ This is data from Angus Maddison 2010, in billions of Khamis-Geary dollars. British data for 1861, 1881, 1891. Belgium data for 1862, 1872. Japan data for 1872. Spanish data for 1877. Portuguese data for 1862, 1872, 1881. British empire data for 1881, 1891 and 1901 from *Statistical Abstract for the British Empire in each Year from 1890 to 1904*. London: Darling & Son, 1906 (2). British empire data for 1860 and 1870 are estimates rounded to the nearest ten million and based on Maddison. Ottoman empire data for 1913. Additional population data from Clio-Infra. <https://clio-infra.eu>

¹⁴ Australia, Canada and New Zealand.

peripheries)							
Ottoman empire	N/a	N/a	N/a	N/a	N/a	18.2	1.1%
Japanese core	N/a	33.1	35.9	39.6	43.8	49.6	2.9%
Japanese empire (core plus colonial peripheries)	--	--	--	--	46.5	70.1	4.1%
Qing empire	377	358	368	380	400	423	24.9%
Spanish core	15.7	16.8	16.8	17.6	18.6	19.9	1.1%
Spanish empire (core plus colonial peripheries)	18.2	19.3	19.6	20.6	18.7	20.0	1.2%
Portuguese core	3.7	4.0	4.3	5.1	5.0	5.9	0.4%
Portuguese empire (core plus colonial peripheries)	11.1	11.5	11.8	12.9	12.4	12.7	0.7%
Brazil (republic)	8.4	9.8	11.7	14.2	18.0	22.2	1.3%
Mexico (republic)	8.2	9.2	9.9	11.6	13.6	15.2	0.9%
Ethiopia (dynastic empire)	n/a	n/a	n/a	7.4	11.9	13.1	0.8%
Iran (dynastic empire)	4.2	4.5	5.6	6.7	9.9	10.6	0.6%
Thailand (dynastic empire)	5.8	n/a	n/a	n/a	6.3	8.0	0.5%
Afghanistan (dynastic empire)	n/a	n/a	n/a	3.6	3.7	4.4	0.3%
Total of 20 polities	n/a	n/a	n/a	n/a	n/a	1,604	94%

It is important to stress that only one-sixth to one-fifth of the planetary population of 1.3 billion in 1860 consisted of fully waged, partly waged and wageless laborers, whereas five-sixths to four-fifths were subsistence farmers or craft workers who were only loosely integrated into the world-market. Following the abolition of wageless labor, the share of fully and partly waged laborers doubled by 1910 to approximately thirty percent of the planet's 1.775 billion inhabitants.

The third factor distinguishing Global Steam from Global Cotton was the international expansion of the industrial productive forces (science and technology) and the relations of industrial production (workplace organization and logistical know-how). While this expansion was most prominent in Belgium, Britain, France, the Netherlands and the United States, its effects were significant throughout the eight empires and two oligarchic republics of the semi-periphery as well as the four dynastic empires of the periphery.

Some of the major landmarks of the productive forces of Global Steam included Charles Darwin's theory of evolutionary speciation in *The Origin of Species* (1859), the invention of the

first vehicle powered by an internal combustion engine by Siegfried Marcus in the 1860s, the creation of the first transatlantic telegraph cable (1866), Christopher Latham Sholes's invention of the typewriter (1868), Dmitri Mendeleev's invention of the periodic table of the elements (1869), James Clerk Maxwell's *Treatise on Electricity and Magnetism* (1873),¹⁵ Alexander Graham Bell's patent of the collectively-invented telephone (1876), Thomas Edison's invention of the phonograph (1877) and incandescent lamp (1880), James Ritty's invention of the cash register (1879), the four postulates of microbiology theorized by Robert Koch and Friedrich Loeffler (1884), Karl Friedrich Benz' commercialization of the automobile (1885), Heinrich Hertz's generation and detection of electromagnetic waves in *Electric Waves* (1885), Louis Pasteur and Emile Roux's co-creation of the first vaccine against rabies (1885), Louis Aimé Augustin Le Prince's invention of the cinema (1888), the discovery of viruses by Dmitri Ivanovsky and Martinus Beijerinck (1892), Nikolas Tesla's patent of the electric induction motor (1888), Guglielmo Marconi's invention of the radio (1895), Max Planck's theory of black bodies (1900), the invention of the airplane by Orville and Wilbur Wright (1903), Albert Einstein's theory of special relativity (1905), Leo Baekeland's invention of the first popular form of plastic (1907), and Alfred Wegener's theory of continental drift (1912), the predecessor of the 1950s theory of tectonic plates.

The corresponding landmarks in the relations of production included the emergence of the divisional corporation, monopolies and imperial plutocracies in the 1880s, the invention of shop floor management by Frederick Winslow Taylor during the 1890s, the first global commodity futures exchanges (the New York Cotton Exchange was founded by 1869, and similar institutions were founded in the port cities of New Orleans, Le Havre, Bremen, Osaka, Shanghai, São Paulo, Mumbai and Alexandria),¹⁶ the spread of gold-backed currencies, and the spread of modern central banks and systems of national financial regulation.

Although urbanization was rapid and significant during Global Steam, the growth of cities was not one of the key factors differentiating the period from Global Cotton. Bairoch and Goertz have estimated the urbanization rate of the continent of Europe as a whole tripled from 12.6% in 1830 to 32.8% in 1910 – the same level Indonesia reached in 1993, China and Nigeria in 1997, and India in 2015. The planetary urbanization rate rose from an estimated 7.3% in 1800 to 16.4% by 1900, about half of the 29.6% it would reach in 1950.¹⁷

The only core polities which had majority urban populations by 1910 were those of Britain (69.2%), Belgium (56.6%) and the Netherlands (50.5%).¹⁸ The comparable rate of

¹⁵ Maxwell's treatise synthesized the work of Andre-Marie Ampere, Charles-Augustin de Coulomb, Michael Faraday and Hans Christian Ørsted into four mathematical equations which represented the first systematic theory of electromagnetism.

¹⁶ Sven Beckert. *Empire of Cotton: A Global History*. New York: Penguin, 2015 (320).

¹⁷ Our World In Data. <https://ourworldindata.org/grapher/urbanization-last-500-years>.

¹⁸ In 1861, the British isles became the first polity to have a majority urban population. This is an interpolation from Shaw-Taylor and Wrigley's work estimating British urbanization, defined as the percent of the total population living in settlements of larger than five thousand inhabitants, at 43.5% in 1851 and 56.7% in 1871. Leigh Shaw-Taylor and E.A. Wrigley. Chapter 2. "Occupational structure and population change." In: *The Cambridge Economic History of Modern Britain. Volume 1: Industrialisation, 1700–1870, 2nd edition*. Edited by Roderick Floud, Jane Humphries and Paul Johnson.

urbanization for the other major empires was 48.8% in Germany, 45.9% in the US, 40% in Italy, 38.5% in France and 28.5% in Austria.¹⁹ Urbanization was even less advanced in Japan (18% in 1920), the Russian empire (14.3%), British-controlled India (10.3% in 1911),²⁰ Dutch-controlled Indonesia (7.6% in 1900) and the Qing empire (7% in 1910).²¹

The single most prevalent logic of spatialization during Global Steam was thus not urbanization per se, but the expansion of agrarian commodity production under systems of partly and fully waged labor. This expansion was exemplified by the post-1860 transformation of cotton cultivation from a near-monopoly of wageless labor located in the US southern states into a planetary industry of partly waged sharecroppers and tenant farmers.

While US production of cotton recovered after the Civil War thanks to massive new planting in Texas, the world cotton industry grew by leaps and bounds elsewhere in the world-system. British-controlled India produced 260 million pounds of cotton in 1858 and 1.2 billion by 1914, while Brazil's annual cotton production rose from 32.4 million in the 1850s to 220 million by 1920, of which one quarter was exported.²² Similarly, Ottoman-controlled Egypt produced 220 million pounds of cotton in 1860 and British-controlled Egypt 598 million pounds by 1920.²³

Following the abolition of serfdom, the Russian empire constructed vast cotton plantations in Qazaqstan and Uzbekistan, becoming one of the largest cotton producers in the world by the end of Global Steam.²⁴ During the same period, the Japanese empire imported vast amounts of cotton from British-controlled India²⁵ and engineered its own cotton boom in its Korean colony between 1904 and 1920.²⁶ As Beckert observes, the cotton industry literally terraformed the planet's surface:

Taken together, between 1860 and 1920, 55 million acres of land in Africa, Asia, and the Americas, at the very least, were newly planted with cotton for world markets – an area larger than that of Massachusetts,

Cambridge: Cambridge University Press, 2014.

¹⁹ Our World in Data. <https://ourworldindata.org/urbanization>. Also see: Paul Bairoch and Gary Goertz (1986). "Factors of Urbanisation in the Nineteenth Century Developed Countries: A Descriptive and Econometric Analysis." *Urban Studies* 23 (285-305). https://deepblue.lib.umich.edu/bitstream/handle/2027.42/68656/10.1080_00420988620080351.pdf.

²⁰ This is data from the 1911 Census.

²¹ Yi Xu, Bas van Leeuwen and Jan Luiten van Zanden (2018). "Urbanization in China, ca. 1100–1900." *Frontiers of Economics in China* 13:3 (322-368).

²² Sven Beckert. *Empire of Cotton: A Global History*. New York: Penguin, 2015 (293).

²³ Sven Beckert, *Empire of Cotton* (294).

²⁴ Sven Beckert, *Empire of Cotton* (346-347).

²⁵ By 1914, 6% of India's cotton exports went to Britain, 50% went to continental Europe and 38% went to Japan. Sven Beckert, *Empire of Cotton* (293).

²⁶ "Korean cotton exports to Japan increased from an annual average of 37 million pounds between 1904 and 1908 to 165 million pounds between 1916 and 1920. Cotton exports from Japanese-controlled Kwantung province in China provided another 4.1 million pounds." Sven Beckert, *Empire of Cotton* (342).

Vermont, Rhode Island, Connecticut, New Hampshire, and New York combined. Approximately 80 percent of all that new cotton-growing land was situated in territories that had no grown cotton in 1860, the vast majority of which had come under the effective control of colonial powers only during those years. Indeed, by 1905, cotton experts estimated, a full 15 million people, or about 1 percent of the world's population, were engaged in the growing of cotton.²⁷

The spatial expansion of cotton-growing in Brazil, Egypt, Qazaqstan and India paralleled the spatial expansion of wheat and corn-growing in Argentina, Canada, Ukraine and the United States. While the total acreage of wheat, corn and cotton tripled in the United States between 1866 and 1900, total output grew even faster:

Figure 4. Acreage and Output Expansion of Corn, Cotton and Wheat in the United States, 1866-1900.²⁸

Crop	Acreage and Crop 1866	Acreage and Crop 1900	Productivity Increase per Acre
Corn	30 million acres and 0.73 million bushels	95 million acres and 2.67 million bushels	15.5%
Cotton	7.6 million acres and 2.1 million bales (1865)	24.9 million acres and 10.1 million bales	47.0%
Wheat	15.4 million acres and 170 million bushels	49 million acres and 600 million bushels	11.0%

This immense expansion came with an equally immense environmental cost – the destruction of wetlands as well as underground aquifers across North America, the extinction of the passenger pigeon, and the near-extinction of buffalo (herds numbered in the millions in the mid-19th century, but dropped to 1,000 in 1890).²⁹

What was true on a continental scale for corn, cotton and wheat was also true on a subcontinental scale for the agrarian commodities of cocoa, jute, hemp, peanuts and rubber. In Tariq Ali's words:

The enormous expansion in jute production (an eighty-fold increase in acreage between 1850 and 1910) was mirrored in agrarian localities across the colonized tropics: Ghanaian cocoa production increased

²⁷ Sven Beckert, *Empire of Cotton* (358).

²⁸ Kevin Hillstrom and Laurie Collier Hillstrom, editors. *The Industrial Revolution in American: Railroads*. Santa Barbara: ABC Clio, 2005 (148).

²⁹ Hillstrom and Hillstrom, *The Industrial Revolution in America: Railroads* (155).

from 95 pounds to 100,000 tons between 1890 and 1920; Senegalese peanut production increased from 5 metric tons in 1850 to 95,000 metric tons in 1898; in the Philippines, peasant production of abaca, or Manila hemp, increased from 18,000 tons to more than 160,000 tons between the 1850s and the 1920s; in colonial Malaya, peasant households planted 918,000 acres of rubber trees between 1910 and 1922; Burmese peasants increased their rice lands from 700,000 to 5 million acres and increased rice exports from 162,000 tons to 2 million tons between 1855 and 1905; and India's exports of raw cotton rose from about 76,500 tons during the 1830s to 310,500 tons during the 1880s.³⁰

These new agribusinesses were organized on a fundamentally different basis from pre-capitalist subsistence farming or semi-feudal forms of agriculture. They were constructed on global markets of land, global markets of partly and fully waged labor, global markets of seeds and fertilizers, and global markets of processing and distribution.

We will see in Chapter 4 how Global Steam transformed feudal and mercantile ideologies of nobilitarian and caste status, confessional status, linguistic community, and gender into industrial racisms, imperial masculinities and oligarchic republicanism. For now, it is worth emphasizing that Global Steam's industrializations of space, demography and productivity did not occur stepwise or in linear fashion, but transpired through a series of ferocious antagonisms and contradictions. These antagonisms and contradictions triggered, in turn, an equally ferocious series of economic, political and cultural revolutions and counter-revolutions. It is to one of the first of these revolutions and counter-revolutions, namely the abolition of wageless labor, that we turn in the next chapter.

³⁰ Tariq Omar Ali. *A Local History of Global Capital: Jute and Peasant Life in the Bengal Delta*. In: "Introduction". Princeton: Princeton University Press, 2018.

Chapter 2

The Four Abolitions of Wageless Labor

Between 1815 and 1860, the four largest zones of wageless labor located in the semi-peripheries of the British world-system – Brazil's constitutional monarchy, Spanish-controlled Cuba, the westernmost territory of the Russian empire, and the southern half of the US constitutional empire – exhibited a remarkable degree of geopolitical stability. To be sure, Brazil's coffee barons, Cuba's sugar lords, Russia's serf-owning nobility and America's cotton plantocracy had to contend with countless small-scale rebellions, the flight of wageless laborers to internal frontiers, and Britain's increasingly stringent enforcement of the ban on the maritime slave trade beginning in the late 1840s. Yet these four regions were almost untouched by the mass uprisings of 1830-1831 and 1848-1851. As late as the mid-1850s, none of their elites appeared to face any serious challenge to their continued rule.

What needs to be explained is why systems of wageless labor which had flourished for three hundred years, which sprawled across huge swathes of three continents, and which controlled vast amounts of political and economic power, were demolished in a twenty-seven year whirlwind of political, economic and cultural change. This whirlwind permanently altered the trajectory of four of the largest world empires of the world-system, polities which collectively administered one-sixth of the planet's population and one quarter of the planet's landmass.

The Russian empire abolished serfdom between 1861 and 1866 as part of Alexander II's sweeping military and economic reforms, a response to the disastrous defeat of the Crimean War (1854-1856). Far from delaying or reversing this abolition, Poland's 1863 anti-colonial insurrection accelerated its implementation. The United States abolished slavery between 1862 and 1865 during its Civil War. The Spanish authorities abolished slavery in Cuba and Puerto Rico between 1868 and 1886 during the anti-colonial Ten Years' War (1868-1878), as part of the temporary reconsolidation of Spanish authority prior to the decisive outbreak of the Cuban revolution in 1895.³¹ Brazil's abolition of slavery between 1871 and 1888 was inextricably linked to the overthrow of Pedro II's constitutional monarchy in 1889 and the inauguration of the Brazilian republic in 1891.

None of these abolitions followed the model of the five Atlantic uprisings and three national revolutions of 1775-1791, or the twelve Central and South American uprisings and

³¹ The two landmark events were the formal abolition of slavery on Puerto Rico, with a three-year transition period of indenture, and the passage of Moret's Law in 1873, which freed Cuban wageless laborers older than 60 or younger than 5, thereby guaranteeing the eventual end of slavery on Cuba (slavery could not be reimposed on anybody). The slightly faster pace of abolition in Puerto Rico was probably due to the fact that slavery was already in steep decline on the island. In 1834, wageless laborers were 12% of Puerto Rico's population of 358,836. By 1856, wageless laborers were only 7% of the population of 583,308. R.A. Van Middeldyk. *The History of Puerto Rico*. 1903. <http://www.fullbooks.com/The-History-of-Puerto-Rico4.html>.

subsequent national revolutions of 1810-1827. All of the latter were powered by fractious and unstable coalitions of merchants who wanted freedom from dynastic-mercantile taxation, fully waged and partly waged workers who wanted land for commodity-based agricultural production, and wageless workers who wanted emancipation and land for subsistence farming.

By contrast, the abolitions of 1861-1888 were powered by protracted alliances between economic and political elites bent on constructing imperial national capitalisms, and coalitions of fully waged workers (including but not limited to factory workers), partly waged workers (especially women) and wageless workers. Whereas the Atlantic insurrections were driven by the struggles for liberty and the acquisition of land for subsistence farming, the 1861-1888 abolitions were driven by the struggles for imperial national citizenship and the purchase of land for commodity production.

These four abolitions were not the conservativizing revolutions of the post-1815 Austrian, Belgian, Brazilian, Dutch and French constitutional monarchies. Nor were they the modernizing revanchisms of Argentina's de Rosas, Haiti's Soulouque and France's Napoleon III. They were the single most radical political impulse of the proletariat which constituted approximately one-sixth of the planetary population in 1860 and about one-fifth by 1880.

This proletariat played a decisive role in transforming Brazil and Russia from agrarian semi-peripheries into industrializing semi-peripheries, in catapulting the United States from the status of a semi-periphery into a core polity, and in igniting a century of anti-colonial national liberation struggles in the Caribbean. Its demographic weight, degree of cultural self-awareness, and level of political organization determined the short-term trajectories of the four abolitions, and overdetermined their long-term consequences.

The Russian empire had a weakly organized, mostly illiterate proletariat far outnumbered by subsistence farmers and rural craft workers, and thus had the least radical abolition. By contrast, the majority of the US population was literate, proletarian, and exerted some degree of electoral or political agency, thereby ensuring that the American abolition was the most radical of all. The abolitions of the Brazilian empire and Spain's Cuban colony fell somewhere between these two antipodes, due to their status as semi-peripheral economies characterized by low levels of literacy and extensive agrarian commodity production.

Before analyzing the trajectory and consequences of the American abolition in greater detail, it is worth analyzing the specific form of industrial closure which overdetermined the outcome of the Russian abolition. After ascending to the Russian throne in 1855 and acknowledging Russia's defeat in the Crimean War, Alexander II initiated the most far-reaching internal reforms since the reign of Catherine the Great.

The most significant of these reforms included the abolition of serfdom, heavy state investment in railroads, banks and military factories, the modernization of the armed forces and the judiciary, the creation of the empire's first local government bodies (*zemstvo*) in 1865, a significant expansion of basic and higher education, some expansion of tolerance vis-a-vis non-Russian ethnicities (e.g. small numbers of Jews were allowed to become state employees, while the Finnish language gained official status in 1863), and a limited relaxation of media and cultural censorship.

The flip side of this wave of internal reform was the intensification of colonial adventurism and expansionism in Central Asia and maritime East Asia. This intensificatio

included the founding of Vladivostok by a Russian maritime expedition in 1860, the colonization of present-day Tajikistan between 1864 and 1884,³² and the 1861-1864 genocide of the Circassians and a host of smaller peoples located along the Russian empire's southern frontier. Walter Richmond has estimated that 625,000 Circassians out of a population of 1.25 to 1.5 million perished in the mass deportations of 1864 alone.³³

The interlock between internal reform and external predation helps to explain the Russian empire's counterintuitive response to the Polish national insurrection of 1863. Instead of relying on brute force, the authorities instituted the single most radical variant of land reform within the confines of the Russian empire in the post-1861 period. The reason for this radicalism was not benevolence, but the fact that Russian-colonized Poland was inhabited by 3.7 million Poles, 600,000 Jews, 250,000 Germans and 250,000 Lithuanians in 1859, and also had an urbanization rate of 24.4% – double the figure of the remainder of the Russian empire.³⁴

This complex ethnic and economic landscape compelled the dynastic authorities to adopt the same strategy employed by the Austrian empire in 1848 when this latter abolished serfdom in Galicia (the future western Ukraine). That is, abolition was employed to bolster the empire's legitimacy among emancipated serfs and turn them against the Polish land-owning elites who were among the most fervent supporters of Polish independence. The result was the single most progressive variant of land reform inside the Russian empire. Ivan Berend describes the consequences of this land reform as follows:

The tsar's radical land reform in the final stage of the Polish uprising in March 1864 (altogether 4.4 million hectares went to nearly 700,000 freed serfs) affected only 40 percent of the land. However, between 1864 and 1890, peasant property increased by 8 percent to 43 percent of the total available land, while the share of noble estates dropped from 46 percent to 30 percent. All peasant obligations and landowners' control of villages were liquidated.³⁵

This radical land reform was one of the crucial factors enabling colonized Poland and the Baltic region to become the heartlands of the Russian empire's post-1860 industrialization.

Conversely, what locked the bulk of the Russian empire into the neocolonial stagnation characteristic of semi-peripheries as diverse as Central and South America all the way to the Ottoman empire was the reactionary variant of abolition instituted in the former. Stephen Hoch has convincingly argued that Russia's 1859 banking crisis overdetermined the larger political trajectory of the abolition, by locking most of the former serfs into systems of debt peonage characterized by high rates of profit for speculators but low returns for rural producers:

³² Kirill Nourzhanov and Christian Bleuer. *Tajikistan: A Political and Social History*. Canberra: ANU Press, 2013 (18).

³³ Walter Richmond. *The Circassian Genocide*. Princeton: Rutgers University Press, 2013 (92).

³⁴ Hugh Seton-Watson. *The Russian Empire 1801-1917*. Oxford: Oxford University Press, 1967 (370).

³⁵ Ivan T. Berend. *History Derailed: Central and Eastern Europe in the Long Nineteenth Century*. Berkeley: UC Berkeley Press, 2003 (162).

The banking crisis forced a sudden reordering of fiscal priorities. It prevented the government from subsidizing the serfs' acquisition of their lands as in Prussia and Austria. It burdened the peasants for years with high interest rates on their redemption debts, substantially increasing their annual payments. It abetted those who wished to minimize the size of the peasants' land allotments. It added weight to the view that redemption must be gradual, not immediate and mandatory. It necessitated the imposition of restrictions on the credit instruments issued to ex-serf owners to the disadvantage of the holders. All in all, the vast redemption operation and the harsh terms it imposed on the peasants were not simply the result of serf owners defending their interests. They were a response to fiscal constraints dictated by the collapse of state credit institutions.³⁶

The Prussian abolition of 1808 and the Austrian abolition of 1848 succeeded in kickstarting economic growth in their respective empires only because the state mobilized sufficient financial resources to allow a significant fraction of the newly emancipated serfs to become producers of agricultural commodities.³⁷ The abolition specific to Russian-colonized Poland also generated industrial growth, thanks to the region's local history of mercantile accumulation as well as significant demand for agricultural commodities from neighboring Austria and Prussia.

By contrast, the abolitions specific to the future Belarus, Russia and Ukraine were overdetermined by the dependency of the Russian empire on inflows of capital from the core polities of Belgium, Britain, France and the Netherlands:

The fact that the banking crisis in Russia came on the heels of a European financial crisis illustrates a disadvantage of being dependent on the savings rates of other countries. When Russia's traditional sources of foreign capital dried up, attempts to raise funds internally proved ruinous. But it is not surprising that the machinery of Western finance capital failed in Russia of the 1850s nor unusual for financial experimentation to precipitate crisis.

Once the terms of redemption became known, and then were extended, the credit required for redemption deepened the crisis and prolonged the period of tight money. The promise of new forms of long-term mortgage credit for noble landowners could not be kept. The 1859 Commission on Land Banks, headed by Hagemeister, had recommended the establishment of private institutions financed by landowner capital. The commission, in a sharp reversal of longstanding government policy, opposed the expenditure of state funds to finance agricultural credit. Given the tight market, it proved impossible to

³⁶ Stephen L. Hoch (1991). "The Banking Crisis, Peasant Reform, and Economic Development in Russia, 1857-1861". *The American Historical Review* 96:3. Oxford: Oxford University Press (796-797).

³⁷ "By comparison, in Prussia, the government paid a significant portion of the redemption loan principal, covered all administrative costs, and made it possible to liquidate the debt even faster, if certain funds became available. In Austria, government assistance was even greater. The Finance Commission discussed these redemption acts at length, since many expected the Russian redemption operation to be modeled on Prussian and Austrian precedents. But the commission found it necessary to limit the government's role to that of a mediator, not an underwriter. The tsarist government did not spend a kopek in undertaking the Great Reform of making twenty million peasants property owners." Stephen L. Hoch, "The Banking Crisis, Peasant Reform, and Economic Development in Russia, 1857-1861" (810).

raise funds privately. Thus the agricultural system foreseen by the reformers – hired wage labor using modern landowner inventory – was not realized. Rather, it yielded to other forms of tenancy, especially small-scale sharecropping or land rental agreements, which required little capital outlay by the landlord.³⁸

This dependency helps to explain why the Russian empire remained locked into a semi-peripheral accumulation structure similar to that of Argentina and Brazil: the former specialized in wheat exports to Austria and Prussia, precisely where the latter two polities specialized in beef and coffee exports to the United States and continental Europe. While the Russian agricultural sector grew quickly enough to feed the empire's growing population and thereby avoid the genocidal famines which devastated British-controlled South Asia and Qing China, there was no industrial expansion comparable to those of post-1830 Belgium, most of the German-speaking states of Central Europe, and the northern half of the United States. Carol Leonard has summarized the trajectory of post-abolition Russian agriculture as follows:

Two factors most powerfully contributed to change [after abolition]: the substitution of the *sokha* [wooden plough] by the *plug* [iron plow] and the two transitions in cultivation, from the fallow to the three-field system of rotation in the steppe and from the three-field to multiple-field rotation in the West and central Russia. This is a timeline well behind that of England, where yields were improved by technological means much earlier, from the prevalence of the open-field system in 1200 to enclosure in 1650 to four course rotation in 1850 and the further modernization and introduction of new fertilizers and seed varieties from roughly 1920.³⁹

The explosive internal contradictions generated by the industrialization of the Russian empire's western regions and the underdevelopment of its Slavic regions and Central Asian colonies were exacerbated by the empire's main external contradiction. This was the fact that the larger the Russian empire grew, the more imperial competitors it acquired on its frontier, and the more vigorously those competitors countered Russian imperialism with their own imperial projects.

As late as 1860, the Russian empire was vastly more powerful than the Austrian, Prussian, Ottoman and Persian empires on its borders, and remained the third most powerful world empire after Britain and France. By the 1870s, Russia's newly-acquired Central Asian empire shared a land border with the territories of a hegemonic British empire. By the 1880s, the Russian empire had to contend with a rapidly industrializing Germany which dominated continental Europe, and an increasingly hostile Austria, antagonized by Russia's pan-Slavic adventurism in the Balkans. By the 1890s, Russia's construction of its Pacific fleet and expansion into Manchuria put it in direct competition with Japan's expansionist maritime empire.

³⁸ Stephen L. Hoch, "The Banking Crisis, Peasant Reform, and Economic Development in Russia, 1857-1861" (819).

³⁹ Carol S. Leonard. *Agrarian Reform in Russia: The Road from Serfdom*. Cambridge: Cambridge University Press, 2011 (201-202).

The long-term trajectories of the British and Russian empires are emblematic of this contradiction. Simply, the more the British maritime empire expanded by sea, the more stable its industrial core (the British isle and the settler-colonial offshoots of Australia, Canada and New Zealand) and the more rebellious its overseas peripheries (colonized Ireland, Africa and Asia) became, due to the industrialization and urbanization of the former and the despotism and immiseration of the latter. The result was the expansion of political democracy and working-class organization in the British empire's economic core – a.k.a. progressive coalitions of parliamentary reformers, industrial unions, suffragettes, Fabians, the Irish Home Rule movement, dissident artists, and anti-colonial journalists located in the territories of the future Australia, Canada, New Zealand and United Kingdom – and the rise of anti-colonial mass movements in Britain's African and Asian peripheries.

By contrast, the more the Russian land empire expanded by land, the more rebellious its most industrialized regions – colonized Estonia, Finland, Latvia, Lithuania and Poland, as well as the five largest urban agglomerations of St. Petersburg, Moscow, Odessa, Kyiv and Kharkiv⁴⁰ – became vis-a-vis the rural hinterlands of rural Belarus, Russia, Ukraine and the colonized regions and peoples of Central Asia and Siberia. The long-term result was the expansion of a small working class in the most industrialized regions and largest cities of the Russian empire, combined with the intensified immiseration of the vast majority of the population who were rural subsistence farmers.

This was a recipe for spectacular but localized eruptions of political radicalism which could not hope to budge a semi-feudal but demographically dominant countryside. These eruptions included the agrarian populisms of the radical Narodniks (“narod” means “people”) during the 1860s and 1870s, the individual actionism of the anarchists of the 1880s, and the rural insurrections fomented by Socialist Revolutionaries of the 1890s. None of these uprisings generated significant political reform, but triggered internal waves of revanchism and repression.

The classic case of this negative feedback loop was the 1881 assassination of Alexander II by an anarchist group called the Peoples' Will. The czar's son, Alexander III (1881-1894), did not just countermand many of his father's reforms, he also launched counterproductive forms of ethnic Russification within the empire as well as reckless imperial adventurisms on the empire's southwestern and far eastern borders. The goal of this Russification was to transform a semi-feudal landscape of Russian-speaking landed gentry, village craftworkers, rural sharecroppers, subsistence farmers, and small pockets of urban professionals and workers into a codified Russian ethnicity, thereby replacing dynastic racialization with an imperial national racism.

Two landmark authors of the 1860s captured the essence of this dialectic of a domestically powerless and increasingly cosmopolitan democratic resistance, versus a domestically all-powerful but increasingly uncompetitive autocracy. One of the most striking examples of this democratic resistance was Alexander Herzen's *The Bell*, the first

⁴⁰ These were the five largest cities of the Russian empire in 1910, whose combined population tripled from 1.53 million in 1870 to 4.762 million by 1910. This is data from B.R. Mitchell. *International Historical Statistics: Europe 1750-1988*. New York: Stockton Press, 1992.
<https://www.zum.de/whkmla/region/russia/eurrusdemhist17961917.html>

censorship-free Russian-language periodical. Published primarily in London between 1857 and 1867, it circulated informally inside the Russian empire, inaugurating the tradition of samizdat (literally, “self-publishing”) by underground West Asian and Central Asian radical intellectuals, artists and dissidents which continues to this day.

Herzen was a scathing and relentless critic of Russia’s autocratic regime. He deserves special credit for his solidarity with the Polish revolutionary struggle, which made him deeply unpopular with many pro-imperial Russian intellectuals. Herzen also wrote one of the first classic Russian-language autobiographies, *My Past and Thoughts*, between 1855 and 1862, anticipating Gorky’s magnificent autobiography by decades.

The ideological antipode of Herzen’s wildly unpopular solidarity with the anti-colonial movements inside the Russian empire was Nikolay Chernyshevsky’s wildly popular *What is to be Done?* (1863). Written while Chernyshevsky was imprisoned, this text embodied one of the most savage of all historical ironies, namely a work so utterly revanchist it was misperceived as boundlessly revolutionary.⁴¹

This revanchism was relayed by the four successive dreams of the protagonist of the novel, Vera Pavlova, Chernyshevsky’s version of Wagner’s Brünnhilde. Each of Vera’s dreams denoted a specific imperial anxiety. The first dream portrayed the danger of the semi-peripheral Russian empire falling behind its Austrian, British, French, and Prussian peers:

And here comes a young girl across the field. How strange! her face and her gait, everything about her keeps changing, changing constantly. Now she is English, French, now she is already German, Polish, and now she has become Russian, again English, again German, again Russian; and how is it that she only has the one face?⁴²

The second dream focused on the fertility of the soil, a covert reference to the Russian empire’s control over Ukraine – the territory containing the single richest belt of farmland in West Asia, whose population was a source of perennial anxiety for Russian imperial elites ever since the Khmelnytsky Uprising of 1648-1657. The third dream conjured up Vera’s previously nonexistent diary, whose magical appearance causes her to switch marriages from one husband to another – a transparent allegory of Alexander II’s post-1855 reforms, which were carried out largely by fiat.

In between the third and fourth dreams, Chernyshevsky introduced the character of Rakhmetov, who was somehow a major landowner who once owned thousands of serfs and yet a dissipated student, a die-hard ascetic who nonetheless overindulged at the dinner table, and the most radical of collectivists who espoused the purest of rational egoisms, all at once.

Rakhmetov was unquestionably the single most misinterpreted figure of 19th century Russian literature. Three generations of populists and radicals, including Vladimir Lenin himself,

⁴¹ This is Adam Weiner’s essential insight. See Chapter 2 in: Adam Weiner. *How Bad Writing Destroyed the World: Ayn Rand and the Literary Origins of the Financial Crisis*. New York: Bloomsbury, 2016.

⁴² Nikolay Chernyshevsky. *What Is To Be Done?* Translated by Nathan Dole and S.S. Skidelsky. New York: T.Y. Crowell, 1886, Chapter 12 (103).

<https://archive.org/details/cu31924096961036/page/n255/mode/2up>

lauded Rakhmetov as the first iron-willed Far Left modernizer, a.k.a. the Bolshevik. They were universally mistaken, but their mistake was due neither to subjective hypocrisy nor ideological dogmatism.

What the radicals could not have understood was that Rakhmetov was the first despotic modernizer of Russia's Far Right, a.k.a. the first avatar of Russo-fascism. While this Russo-fascism never took state power during Global Steam or the third supercycle for reasons we will explore at length in the next volume, it exerted immense power as a political and cultural phantom, haunting both the Russian and the Soviet empires in much the same way that the specter of proletarian revolution haunted the dynastic powers of Europe in Marx and Engels' *Communist Manifesto*.⁴³

Russo-fascism was the semi-peripheral fantasy of an industrialization decreed from above by a czar-colonizer, rather than constructed from below on the basis of imported Belgian, British, Dutch and French capital: the probity of the former was meant to compensate for the scarcity of the latter. The genius of Chernyshevsky's text was to paint the revanchism of Russification with the colors of Russian populism.

This is the secret of Vera's fourth dream, wherein Chernyshevsky rebadged the iron-and-glass exhibition halls of Russia's industrializing competitors into fantasy-phalansteries of crystal and aluminum. What was most striking about these phalansteries is not so much their lack of technological or economic credibility, but their physical geography. As Adam Weiner points out:

As in the second dream, soil is an important theme here. It takes the shape of pretty fields of abundant grain and fruits surrounding the aluminum-and-crystal phalanstery. They must have installed good drainage. The same goes for another phalanstery, located in warmer Southern climes, where most of the utopians go for the winter. The dream goddess explains at great length how she inspired her worshippers to mix clay in with the sandy desert soil until, after many years, they had converted it to fertile, arable land. The attendant allegorical interpretation is that Russian people gradually evolved from bad soil to good, as they perfected their understanding of socialism and rational egoism. The socialist dream people have cleverly removed the need for a servant class and thus class conflict. How? The children work with the adults in the fields and do all the house chores! Never fear, though, for the dream goddess reassures Vera that 'they really love it.'⁴⁴

The patent absurdity of the lie (no child has ever loved doing chores, or ever will) conceals a grim geopolitical truth: the two phalansteries are located in a fertile farmbelt and a sandy desert – thinly-veiled allegories of the Russifications of Ukraine and Central Asia,

⁴³ Russo-fascism would eventually come to power in 1998 in the form of Putin's energy-rent revanchism, a Presidential monarchy and kleptocracy comparable to those which looted Iran, Iraq, Qazaqstan, Saudi Arabia, Uzbekistan and a host of other West and Central Asian energy exporters during the late 20th century. We will analyze the geopolitical rise and fall of these energy-rent revanchisms in *Meditations on Geopolitics, Volume 8. The Global Minotaur: The American Long Peace 1973-2008*.

⁴⁴ Adam Weiner, *How Bad Writing Destroyed the World*. Chapter 2.

respectively. Chernyshevsky projected Rakhmetov's czar-colonizer onto the theater of the *obshchina* or village commune, whose alleged egalitarianism was largely a chimera of Russia's urban intelligentsia. Vera's fourth dream was the first literary Potemkin village constructed by Russo-fascism, a revanchist fairy-tale fantasy of how a semi-periphery could fully industrialize through unlimited internal repression and external adventurism.

It is no accident that this imperial dream came closest to its practical fulfillment not inside the Russian empire, but in the territories of the antebellum United States. More specifically, the closest American analogue of Russo-fascism was the imperial revanchism of the 1860-1865 US Confederacy. Rakhmetov was not the premonition of Lenin, he was the Slavic Jefferson Davis.

To understand why the Confederacy appeared in 1860, what the contending forces of the US Civil War were, and why the Russian empire remained locked in the semi-periphery whereas the American semi-periphery ascended to core status after 1865, it is helpful to think of both empires as the divergent outcomes of a common starting-point. This starting-point was the fact that the US and Russian empires were the two most successful land-based empires of Global Cotton.

Both were empires of the semi-periphery dependent on the core polities of Belgium, Britain, France and the United Provinces for capital and technology. Both had access to vast natural resources, and could expand on their western and eastern frontiers with little to no opposition from rival empires. Both experienced explosive population growth during the 19th century. Both incorporated vast numbers of new subjects through settler-colonial conquests.

The crucial difference was that the most industrialized regions in the Russian empire – colonized Estonia, Finland, Latvia, Lithuania and Poland – comprised less than a tenth of the empire's population and had little political influence over the empire's dynastic elites. By contrast, the most industrialized regions of the US empire (i.e. the northern and midwestern states) comprised two-thirds of its total population and began to exert direct political control over the American political system during the 1850s.

Whereas the industrialization of the Russian empire unleashed anti-colonial nationalisms in its westernmost colonies and imperial Russification in its heartland, the industrialization of the American empire unleashed national imperialism in its north and midwest and imperial national revanchism in its south. James McPherson memorably described the decades-long divergence of the two American imperial projects as follows:

From 1800 to 1860 the proportion of the northern labor force in agriculture had dropped from 70 to 40 percent while the southern proportion had remained constant at 80 percent. Only one-tenth of southerners lived in what the census classified as urban areas, compared with one-fourth of northerners. Seven-eighths of the immigrants settled in free states. Among antebellum men prominent enough to be later chronicled in the *Dictionary of American Biography*, the military profession claimed twice the percentage of southerners as northerners, while the ratio was reversed for men distinguished in literature, art, medicine, and education. In business the proportion of Yankees was three times as great, and among engineers and inventors it was six times as large. Nearly twice the percentage of northern youth attended school. Almost half of the southern people (including slaves) were illiterate, compared to 6 percent of residents of free

states.⁴⁵

The further the southern states fell behind their northern counterparts in the metrics of per capita income and industrial wealth, the greater the tendency of plantocrats and southern elites to compensate with political revanchism. Many prominent southerners forged their careers in the antebellum US military, whose main job was to kill or displace the small groups of indigenous Americans occupying the territories west of the Mississippi on behalf of white settlers. Southern elites also openly supported adventurers such as William Walker, who sought to establish slave empires in various Caribbean islands and Central American republics.⁴⁶

Above all, southern elites exerted near-absolute political domination over the antebellum Presidency (slave-owners occupied the White House three out of every four years between 1789 and 1850), majority control of the Supreme Court (18 of the 31 antebellum justices were slave owners), and half of the Senate between 1789 and 1847. They used this power to exterminate and displace indigenous Americans and to expand the frontiers of wageless labor westward, going so far as to routinely abduct emancipated African Americans in the northern states in order to sell them as property in the south. This continuous, low-level assault on northern polities generated a fierce political backlash by abolitionists and northern political parties, and triggered the 1854-1860 brushfire war between pro-slavery and abolitionist settlers in the territory of Kansas.

What transformed this regional conflict into a continental one was the fact that the post-1851 consumer sensorium had unleashed the class aspirations of the fully and partly waged workers of the north for affordable land, investment in public infrastructure, and access to public education, at the same moment that the accession of California into the Union 1850, Minnesota in 1858, and Oregon in 1859 enabled those workers to vote their aspirations into reality. The electoral result was the complete disintegration of the Whigs as a party, the sectional

⁴⁵ James M. McPherson. *Battle Cry of Freedom: The Civil War Era*. New York: Oxford University Press, 1988. Chapter 1.

⁴⁶ “Having begun the decade of the 1850s with a drive to defend southern rights by economic diversification, many southerners ended it with a different vision of southern enterprise—the expansion of slavery into a tropical empire controlled by the South. This was the theme of a book published in 1859 by Edward A. Pollard, a Virginia journalist and future participant-historian of the Confederacy. ‘The path of our destiny on this continent,’ wrote Pollard, ‘lies in . . . tropical America [where] we may see an empire as powerful and gorgeous as ever was pictured in our dreams of history . . . an empire . . . representing the noble peculiarities of Southern civilization. . . having control of the two dominant staples of the world’s commerce—cotton and sugar. . . The destiny of Southern civilization is to be consummated in a glory brighter even than that of old.’

Another Virginian, George Bickley, put this fantasy on an organized basis with his Knights of the Golden Circle, founded in the mid-1850s to promote a ‘golden circle’ of slave states from the American South through Mexico and Central America to the rim of South America, curving northward again through the West Indies to close the circle at Key West. ‘With this addition to either our system, the Union, or to a Southern Confederacy,’ wrote Bickley in 1860, ‘we shall have in our hands the Cotton, Tobacco, Sugar, Coffee, Rice, Corn, and Tea lands of the continent, and the world’s great storehouse of mineral wealth.’” James M. McPherson, *Battle Cry of Freedom*. Chapter 3.

fragmentation of the Democrats, and the emergence of post-1851 political movements including the nativist Know-nothings, the abolitionist Free Soilers, and the Republican Party.

The Republicans began to win the votes of these workers by passing the first homestead settlement act in the House of Representatives in 1854. While the measure was vetoed by southern Senators, the Republicans continued to fight for homestead bills in subsequent years, steadily winning more and more seats in the north.⁴⁷ By 1859, a homestead act finally passed the House as well as the Senate, only to be vetoed by the pro-southern Democratic administration of Pierce. "The southern checkmate of tariff, homestead, Pacific railroad, and land-grant college acts," observed McPherson, "provided the Republicans with vote-winning issues for 1860."⁴⁸ Indeed, the Homestead Act eventually passed by the Republican-dominated Congress of 1862 would be one of the most radical and successful pieces of social engineering in 19th century history.

While the first shots of the US Civil War had arguably been fired in 1854, in the form of military clashes between abolitionist and pro-slavery settlers in the territory of Kansas, the conflict exploded into a national conflagration thanks to John Brown's October 16, 1859 raid on the Federal armory at Harpers Ferry, Virginia. Brown's small contingent was crushed within two days, but the raid had a seismic effect on US public opinion.

The southern plantocracy reacted as if the raid was an open declaration of war by the US Federal government on the south. They organized rural militias, openly called for secession from the Union, and persecuted, exiled and murdered real or perceived northerners.⁴⁹ The plantocracy also did their best to sabotage the Presidential election of 1860, by making it impossible to distribute ballots for Lincoln's Republicans in ten of the eleven future Confederate states (the exception was Virginia, where Lincoln received 1.1% of the state's 166,891 votes).

Conversely, northern abolitionists interpreted the raid as the clarion call of the citizen's republic to arms. Here is the key paragraph of John Brown's closing speech to the court which condemned him to death:

The court acknowledges, as I suppose, the validity of the law of God. I see a book kissed here which I suppose to be the Bible, or at least the New Testament. That teaches me that all things whatsoever I would that men should do to me, I should do even so to them. It teaches me further to "remember them that are in bonds, as bound with them." [Quote from Hebrews 13:3 in the King James version of the Bible] I endeavored to act up to that instruction. I say, I am too young to understand that God is any respecter of persons. I believe that to have interfered as I have done – as I have always freely admitted I have done – in behalf of His despised poor, was not wrong, but right. Now if it is deemed necessary that I should forfeit my life for the furtherance of the ends of justice, and mingle my blood further with the

⁴⁷ "...southern senators killed a bill [in 1854] passed by a predominantly northern vote in the House to provide settlers with a 160-acre homestead grant on public lands. Such a law, explained one southerner, 'would prove a most efficient ally for Abolition by encouraging and stimulating the settlement of free farms with Yankees and foreigners pre-committed to resist the participancy of slaveholders in the public domain.'" James M. McPherson, *Battle Cry of Freedom*. Chapter 3.

⁴⁸ James M. McPherson, *Battle Cry of Freedom*. Chapter 6.

⁴⁹ James M. McPherson, *Battle Cry of Freedom*. Chapter 7.

blood of my children and with the blood of millions in this slave country whose rights are disregarded by wicked, cruel, and unjust enactments. – I submit; so let it be done!⁵⁰

Brown did more than just denounce the racial hierarchy of the south as the unjust captivity of the few, which was an injustice to all. He also denounced the industrial racism of the north as universal imprisonment: the whole of America was enslaved, not just the south. In protest against universal unfreedom, Brown invoked the solidarity of millions of laboring bodies, shedding their commingled blood in the cause of equality. The abolitionist critique of chattel slavery converged with the Marxian critique of wage slavery: the abolition of the former was the necessary precondition of the abolition of the latter. Brown was the last revolutionary martyr of Global Cotton's epic slave insurrections, and the first revolutionary soldier of Global Steam's four world-shaking abolitions.

The fully and partly waged workers of eighteen northern, midwestern and far western states heard Brown's call, and voted overwhelmingly for Lincoln and the Republican program of homesteads, railroad construction and tariff protection from British imports. By contrast, the southern faction of the Democrats won nine Confederate states plus Delaware and Maryland, the anti-secession southern Whigs who formed the short-lived Constitutional Union Party won the border state of Kentucky and the Confederate states of Tennessee and Virginia, while the northern Democratic faction won only Missouri.

The Republicans also dominated the elections for the Congress of 1860, winning 108 out of the 239 total seats available in the House of Representatives. Thirty seats were won by parties who remained loyal to the Union, while only 45 seats were won by the opposition Democrats. Fifty-six of these 239 seats were left vacant due to the secession of the southern states, giving the Republicans overwhelming control of the House. However, even assuming Democrats had occupied every single one of their seats, pro-Union parties would still have had an overwhelming majority of 138 to 101. In the Senate, the Republicans won twenty-nine seats, whereas the Democrats won thirty – the final seat was won by a representative of the Know-nothing party.

The loss of the Presidency and the House of Representatives to the Republicans, combined with the near-loss of the Senate, foreclosed any possibility of expanding slavery into the western territories or elsewhere in the Americas. The southern plantocracy understood full well that its political influence was destined to shrink further, due to the fact that the territories of Kansas, Nevada and Nebraska were just a few years away from acceding to the Union and handing decisive control of the Senate to the fully waged states.

As a result, the plantocracy threw away its last remaining political asset – the thirty seats it would have controlled in the 1860 Senate – for the sake of an adventurist war against the north. Marx was one of the first to point out that the military phase of the Civil War did not begin with an invasion of the south by northern armies, but as a war of expansionism by southern armies determined to reimpose slavery on the north – a war which triggered the northern mobilization. The purpose of secession was never independence from the Union, but rather the latter's

⁵⁰ John Brown. Address to court. November 2, 1859. <http://www.pbs.org/wgbh/aia/part4/4h2943t.html>.

wholesale destruction.⁵¹

The roots of this expansionist war lay in the fact that the eleven southern US states which comprised the Confederacy were a lightly industrialized semi-periphery of the world-system which specialized in cotton exports to British textile factories. In demographic size and economic structure, the Confederate empire of cotton was most comparable to the Brazilian empire of coffee. The Confederacy's population of 9.1 million, 3.5 million of which were wageless laborers, was ruled by cotton planters in much the same way Brazil's population of 8 million, 1.8 million of which were wageless laborers, was ruled by coffee barons.

From the outset, the Confederacy was spectacularly outmatched in demographic and economic resources by the twenty-five US states which constituted the Union. This latter had a population of 22.3 million in 1860, only 0.4 million of which were wageless laborers. The Union's 21.9 million free citizens outnumbered the Confederacy's 5.9 million free citizens by almost four to one, while its urbanization rate was 25% compared to 10% for the south.

While the Union states were a semi-periphery of the British world-system, they had developed a significant range of local industries thanks to a highly literate population, significant state investment in infrastructure, large-scale inflows of capital from British investors, and extensive trade links with the British empire.⁵² Considered as a distinct geopolitical entity, the Union states of 1861 were a second-tier empire most comparable in size and economic strength to Prussia.⁵³ In geopolitical terms, the Civil War was the explosive clash of an English-speaking Prussia just beginning to hit its national imperial stride, and an English-speaking Brazil in the grip of neocolonial stagnation.

To be sure, the overwhelming preponderance of the Union in terms of economic resources did not translate into immediate military dominance. This was due partly to the logistical challenge of organizing armies from scratch, but also to the fact that the total landmass of the Confederacy was 2 million square kilometers – approximately four times the size of contemporary France and two-thirds the size of contemporary India. The Union states had to build a massive network of bridges, turnpikes, railroads and telegraph lines across this terrain, create a flotilla of ships to control the Atlantic and Gulf coastlines and the river-system of the Mississippi basin, and equip and supply an army which peaked in number at 600,000 in 1863.

The war was also extended in duration due to the militarized nature of southern white

⁵¹ "The war of the Southern Confederacy is, therefore, not a war of defense, but a war of conquest, a war of conquest for the extension and perpetuation of slavery." Karl Marx and Friedrich Engels. *The Civil War in the United States*. Colorado Springs: Portage Publications, 2000 (76).

⁵² During the 1850s, 71% of all US exports were sent to the markets of the British empire: "Exports (and reexports) from the United States to Britain rose from 35 percent of the total in 1795–1801 to 42 percent of a much larger total in 1849–1858. This share, though sizeable, underestimates the increasing importance of the British connection. In the years between 1849 and 1858, the United States also sent 23 percent of its total exports to the West Indies, mainly to British colonies there, and an additional 8 percent to British North America (Canada)." A.G. Hopkins. *American Empire: A Global History*. Princeton: Princeton University Press, 2018 (163-164).

⁵³ In 1861, continental France had a population of 37.4 million, the Austrian empire 36 million, the British isles excluding Ireland 29.1 million, newly-created Italy 25 million, the Prussian empire 18.5 million, and the Russian empire 74 million.

masculinity. This latter enabled the Confederacy to mobilize far more soldiers in per capita terms during the first months of the war than the Union, to conduct successful local offensives against superior numbers in the early battles of 1861 and 1862, and to keep the Confederate army in the field despite supply and logistical shortages far worse than those faced by Union soldiers.⁵⁴

The reason for this temporary advantage was the fact that unlike the empires of Brazil, Spanish Cuba or Russia, where a complex range of nobilitarian and preindustrial social relations buffered the revanchist identity-politics of Brazil's republican whiteness, Cuba's colonial whiteness, and Russia's dynastic Russification, southern white males existed in a state of permanent war vis-a-vis American wageless laborers. Seventy to eighty percent of the white male electorate of the Confederacy voted for secession and war on the Union states in 1859 and 1860, precisely because they had *always been at war* against the Union.

Put bluntly, the Confederate war was not just another frontier war of colonization or annexation. Its target was not land, but people. Marx and Engels identified the retrograde essence of the Confederacy in a remarkable passage which sketched out the historical counterfactual of a southern military victory over the north:

Thus there would in fact take place, not a dissolution of the Union, but a reorganization of it, a reorganization on the basis of slavery, under the recognized control of the slaveholding oligarchy. The plan of such a reorganization has been openly proclaimed by the principal speakers of the South at the Congress of Montgomery and explains the paragraph of the new Constitution which leaves it open to every state of the old Union to join the new Confederacy. The slave system would infect the whole Union. In the Northern states, where Negro slavery is in practice unworkable, the white working class would gradually be forced down to the level of helotry. This would accord with the loudly proclaimed principle that only certain races are capable of freedom, and as the actual labor is the lot of the Negro in the South, so in the North it is the lot of the German and the Irishman, or their direct descendants.⁵⁵

The result would have been a system of collective enslavement indistinguishable from the conquest empires of the 20th century German, Italian and Japanese fascisms. The tactical successes and strategic failure of the Confederate army between 1861 and mid-1863 directly anticipated the operational victories and strategic failure of the 1935-1942 Axis military campaigns.⁵⁶

The July 1863 battles of Gettysburg and Vicksburg represented the key midpoint of the

⁵⁴ Per capita, the Confederacy also had slightly more officers to draw on. Of the 1,100 officers serving in the US Army of 1860, 28% joined the Confederacy and 72% remained loyal to the Union, a ratio higher than the ratio of the free population of the Confederacy to that of the antebellum United States (20% to 80%). Mark R. Wilson, *The Business of Civil War* (62).

⁵⁵ Karl Marx and Friedrich Engels, *The Civil War in the United States* (82).

⁵⁶ We will argue in the next volume that the Axis powers were the Confederacy with an air force, and that the Union's invention of the industrial land-steam battlefield (the military integration of steamships, railroads and telegraphs) anticipated what Phillips Payson O'Brien called the air-sea super-battlefield of WW II.

Civil War, the moment the Confederacy's war of industrial-scale enslavement began to be overwhelmed by the Union's industrial warfare. In McPherson's words: "Pickett's charge [on July 3, 1863] represented the Confederate war effort in microcosm: matchless valor, apparent initial success, and ultimate disaster."⁵⁷ Pickett's charge was the last Napoleonic column, defeated by the world's first industrial army, precisely where Grant's capture of Vicksburg was the economic death-knell of the Confederate cotton empire.

Mark Wilson has described the colossal scale of the Union's industrial mobilization, the largest on the planet since the Napoleonic wars:

Two-thirds of all U.S. war spending went to pay for goods and services needed to outfit and sustain its forces in the field. In four years, the Union supplied its soldiers with roughly 1 billion rounds of small arms ammunition, 1 million horses and mules, 1.5 million barrels of pork and 100 million pounds of coffee, 6 million woolen blankets, and 10 million pairs of trousers.⁵⁸

Far from being riddled with graft and war-profiteering, Union war spending was highly efficient thanks to what Wilson called a mixed military economy. This latter was the forerunner of the US military mobilizations of the third supercycle, and relied on a combination of democratic oversight and public ownership. Wilson estimated that over 60% of the North's ammunition, 30% of all steam-powered naval vessels, one third of all ship hulls, 30% of all garments and 20% of all tents were produced by government-owned factories.⁵⁹ The key administrators of this system of quasi-public ownership were the quartermasters:

The national supply system these army bureaucrats created in the North is best described as a mixed military economy. Far from being a party patronage machine or a triumph of unregulated capitalism, as some historians have suggested, the Union's procurement project relied upon a combination of large scale public and private operations. Military supply officers were not content to leave the business of war to private enterprise. Certainly, the North bought goods from hundreds of contractors in the private sector. But quartermasters and other supply officers also created substantial wartime public enterprises that went well beyond the system of arsenals and navy yards that had existed on the eve of the war. By the middle of the conflict, the Quartermaster's Department alone employed over 100,000 civilians, far more than any private American business enterprise of the era. Championed by supply officers and war workers alike, the expanded wartime network of public enterprises accounted for a sizable fraction of all goods and services consumed by the Union armies.⁶⁰

⁵⁷ James M. McPherson, *Battle Cry of Freedom*. Chapter 21.

⁵⁸ Mark R. Wilson. *The Business of Civil War: Military Mobilization and the State, 1861–1865*. Baltimore: Johns Hopkins University Press, 2006 (1).

⁵⁹ Mark R. Wilson, *The Business of Civil War* (75, 76).

⁶⁰ Mark R. Wilson, *The Business of Civil War* (2).

The quartermasters were well-educated and conscientious officers who managed the logistics and supplies of the Union army. In contrast to the British tradition of landed gentry and monied elites purchasing officer commissions in the army and navy, a practice not fully abolished until 1871, the United States staffed its armies as early as 1817 with a meritocratic officer corps.⁶¹ McPherson has eloquently described the contribution of the quartermasters to the war effort:

Nearly everything needed by an army except weapons and food was supplied by the Quartermaster Bureau: uniforms, overcoats, shoes, knapsacks, haversacks, canteens, mess gear, blankets, tents, camp equipage, barracks, horses, mules, forage, harnesses, horseshoes and portable blacksmith shops, supply wagons, ships when the army could be supplied by water, coal or wood to fuel them, and supply depots for storage and distribution. The logistical demands of the Union army were much greater than those of its enemy. Most of the war was fought in the South where Confederate forces operated close to the source of many of their supplies. Invading northern armies, by contrast, had to maintain long supply lines of wagon trains, railroads, and port facilities. A Union army operating in enemy territory averaged one wagon for every forty men and one horse or mule (including cavalry and artillery horses) for every two or three men. A campaigning army of 100,000 men therefore required 2,500 supply wagons and at least 35,000 animals, and consumed 600 tons of supplies each day. Although in a few noted cases – Grant in the Vicksburg campaign, Sherman in his march through Georgia and the Carolinas – Union armies cut loose from their bases and lived off the country, such campaigns were the exception.

Meigs furnished these requirements in a style that made him the unsung hero of northern victory. He oversaw the spending of \$1.5 billion, almost half of the direct cost of the Union war effort. He compelled field armies to abandon the large, heavy Sibley and Adams tents in favor of portable shelter tents known to Yankee soldiers as 'dog tents' – and to their descendants as pup tents. The Quartermaster Bureau furnished clothing manufacturers with a series of graduated standard measurements for uniforms. This introduced a concept of 'sizes' that was applied to men's civilian clothing after the war. The army's voracious demand for shoes prompted the widespread introduction of the new Blake-McKay machine for sewing uppers to soles.⁶²

⁶¹ “By the 1840s and 1850s, most quartermasters—and, increasingly, most army officers overall—were graduates of the national military academy at West Point, New York. Created in 1802, the academy became especially distinctive after 1817, when Superintendent Sylvanus Thayer remodeled it along the lines of L'École Polytechnique, the national engineering school in France. Run by the Army Corps of Engineers, West Point offered a four-year curriculum (expanded to five years in 1854) that stressed French, mathematics, science, and engineering. In an era when most other American colleges and universities concentrated on teaching ancient languages, history, and theology, this course of study was unusual. West Point cadets, who were appointed by the president and members of Congress from each state, came from all over the country, but most were the sons of relatively successful and well-connected professionals, merchants, or civil servants. Nearly half of the cadets who entered West Point failed out, often because of poor grades in math; those who survived were regularly ranked according to strict quantitative measures. In any given year, West Point produced only about forty or fifty graduates. But because the antebellum army was small, this number was more than enough to fill the peacetime officer corps: by 1860, over three-quarters of army officers were West Point graduates.” Mark R. Wilson, *The Business of Civil War* (41).

⁶² James M. McPherson, *Battle Cry of Freedom*. Chapter 10.

This titanic expansion of production transformed the Union states from a second-tier industrial power into a near-peer competitor of the British hegemon. This transformation was powered by the conversion of partly waged laborers – especially women – and former slaves into fully waged laborers in military-run factories. Large numbers of women were employed in these factories, especially in the garment sector. Women also played a critical role in taking up the agricultural jobs vacated by men drafted into the army, ensuring that agricultural production expanded during the war years. The Union mobilization was one of the biggest labor mobilizations of the 19th century:

As Union armies advanced farther into the South, Quartermaster's Department payrolls increased apace. Quartermasters were responsible for paying huge numbers of workers on the U.S. Military Railroad, the army-run rail network formed in the upper South as the Union advanced. (By the end of the war, this system, with more than 2,300 miles of track, 400 engines, and 6,600 railroad cars, was costing the North \$1.3 million a month.) At Nashville in late 1864, Quartermaster John C. Crane was responsible for paying nearly \$375,000 in wages a month to some 10,000 civilian employees of the U.S. Military Railroad based in that city. At Chattanooga, U.S. quartermasters established a large cavalry depot to hold hundreds of horses and mules. Like its sister cavalry depots in Saint Louis and Washington, the Chattanooga establishment was run by over 1,000 civilian workers. Meanwhile, at City Point, Virginia, a major forward supply base for Grant's armies in the East, large army-run repair shops and warehouses employed as many as 1,600 civilians by the final part of the war. At these depots and in the field, the thousands of teamsters and laborers employed by quartermasters included large numbers of black men – including some who had escaped slavery only months before – as well as whites. By late 1863, as many as 25,000 African Americans worked for the army across the upper South.

Together, these military enterprises across the country created a giant civilian workforce that was paid directly by the army and navy. By 1865, the Quartermaster's Department alone employed an estimated 130,000 civilians; at the same time, the Navy Department had over 20,000 civilian workers, most of them at the navy yards. In all, the military bureaus at the end of the war counted approximately 160,000 workers. By contrast, the Post Office Department – easily the largest part of the civil side of the U.S. government – had between 20,000 and 30,000 employees before and during the war.⁶³

One of the least-known but most significant aspects of the Union mobilization was its sweeping reorganization of the American federal state. This reorganization had two main features. First, the Union states reinvented the deficit finance model invented by the British empire during the second supercycle. On February 25, 1862, the Congress passed the Legal Tender Act. This created the foundations of a modern banking system and enabled the Treasury to issue \$150 million in Federal notes – the invention of “greenbacks” or notes backed by the full faith and credit of the United States government – to finance the war. Total US federal debt rose from \$65 million in 1860 to \$2.322 billion in 1866, about thirty percent of US GDP.⁶⁴

⁶³ Mark R. Wilson, *The Business of Civil War* (76-78).

⁶⁴ Richard Sylla, *The Cambridge Economic History of the United States, Volume 2* (530).

Whereas the Confederacy was soon forced to print money to pay for the war, generating an inflationary spiral which ended in complete bankruptcy, the Union kept inflation in check thanks to efficient management of public factories by the quartermasters, and by taxing excess profits and high incomes via the Internal Revenue Act of July 1, 1862. As McPherson observed:

The Internal Revenue Act of 1862 taxed almost everything but the air northerners breathed. It imposed sin taxes on liquor, tobacco, and playing cards; luxury taxes on carriages, yachts, billiard tables, jewelry, and other expensive items; taxes on patent medicines and newspaper advertisements; license taxes on almost every conceivable profession or service except the clergy; stamp taxes, taxes on the gross receipts of corporations, banks, insurance companies, and a tax on the dividends or interest they paid to investors; value-added taxes on manufactured goods and processed meats; an inheritance tax; and an income tax. The law also created a Bureau of Internal Revenue, which remained a permanent part of the federal government even though most of these taxes (including the income tax) expired several years after the end of the war. The relationship of the American taxpayer to the government was never again the same.

The Internal Revenue Act was strikingly modern in several respects. It withheld the tax from the salaries of government employees and from dividends paid by corporations. It expanded the progressive aspects of the earlier income tax by exempting the first \$600, levying 3 percent on incomes between \$600 and \$10,000, and 5 percent on incomes over \$10,000. The first \$1,000 of any legacy was exempt from the inheritance tax. Businesses worth less than \$600 were exempt from the value-added and receipts taxes. Excise taxes fell most heavily on products purchased by the affluent.⁶⁵

The second reorganization of the state was the democratization of land acquisition. The Homestead Act of May 20, 1862 opened vast tracts of public land in the west for settlement at low cost, the Pacific Railroad Act of July 1, 1862 accelerated the construction of intercontinental rail lines, while the Morrill Land Grant Act of July 2, 1862 created a system of land-grant universities to benefit communities of future settlers.

The Homestead Act was one the most consequential pieces of Congressional legislation of the 19th century, which transformed the American west into a landscape of commercial small-holders – the perfect hothouse for America’s stupendous post-1865 industrial growth.⁶⁶

⁶⁵ James M. McPherson, *Battle Cry of Freedom*. Chapter 14.

⁶⁶ “During that [i.e. Civil] war, northern armies did not just enforce emancipation of slaves. The Union freed poor southern whites from plutocracy through broad dispersion of land. With the Homestead Act of 1862 and the Southern Homestead Act of 1866, the Union handed out small plots of land to hundreds of thousands of white farmers, roughly 10 percent of all the land in the U.S. Ugly racism played its part; with the Dawes Act in 1887, the U.S. government seized tens of millions of acres of Native American land and transferred it to homesteaders. The Homestead Act and emancipation were together the most radical redistributionist policy in American history. A quarter of all U.S. adults alive in 2000 were descendants of Homestead recipients. The Homestead Act was the New Deal of that era, a bounty and economic independence awarded to citizens (with the definition of *citizen* hewing to white supremacy).” Matthew Stoller. *Goliath: The 100-Year War Between Monopoly Power and Democracy*. New York:

The price tag for this reorganization was the accelerated dispossession and genocide of the indigenous Americans of the western territories. The same Union army which was fighting against Confederate revanchism also murdered 410 or more Shoshone on January 29, 1863 near Bear River in the territory of Idaho. The Union army also killed somewhere between 150 to 500 Cheyenne and Arapaho human beings near Sand Creek on the territory of Colorado on November 29, 1864.

This is the place to raise the single most frequent counterfactual of the US Civil War – namely, why the three empires with significant colonial holdings in the Americas – those of Britain, France and Spain – refrained from actively aiding the Confederacy.

From the perspective of the British empire, neutrality in 1861-1865 was simply the continuation of its highly successful policy of neutrality vis-a-vis the Texas-Mexican war of 1836-1845 and the US-Mexican war of 1846-1848. The US Civil War did not threaten Britain's Caribbean or Canadian territories, impinge on its naval hegemony, or undercut its commercial supremacy in any conceivable way.

While the cut-off of American cotton exports created a short-term supply shock for the British textile industry, this was a one-time disruption easily remedied by cotton imports from Egypt and South Asia, and more than compensated for by the lucrative returns on Britain's foreign direct investments in the booming Union economy. It should be remembered that British investors financed somewhere between one quarter to one third of all US railroads and other public infrastructure from the mid-19th to the late 19th century, and the overwhelming majority of that infrastructure was located in the northern states.

Conversely, it is striking how the governments of the Union and the Confederacy both went out of their way to avoid antagonizing the British hegemon. The single exception to this policy confirms the rule, namely the infamous *Trent* affair of November 1861, wherein an overzealous US captain seized two Confederate diplomats aboard a British ship in the Caribbean. McPherson noted drily:

In 1861, British India was the Union's source of saltpeter [sodium nitrate], the principal ingredient of gunpowder. The war had drawn down saltpeter stockpiles to the danger point. In the fall of 1861 Seward sent a member of the du Pont company to England on a secret mission to buy all available supplies of saltpeter there and on the way from India. The agent did so, and was loading five ships with 2,300 tons of the mineral when news of the *Trent* reached London. The government clamped an embargo on all shipments to the United States until the crisis was resolved. No settlement, no saltpeter.⁶⁷

The extensive paper trail left behind by Lincoln's Cabinet makes it clear that a military confrontation with Britain was never on the table. After a brief delay to save diplomatic face, the Union unconditionally released the Confederate representatives in January 1862. The saltpeter was duly shipped to DuPont's gunpowder plant in Maryland, helping to transform DuPont into

Simon & Schuster, 2019. Chapter 6.

⁶⁷ James M. McPherson, *Battle Cry of Freedom*. Chapter 12.

one of the behemoth industrial enterprises of the post-1865 era.⁶⁸

In addition to the obvious arguments for British neutrality, there was also one unimpeachable argument against intervention on the side of the Confederacy – the fact that the abolition of wageless labor was now the basic consensus of both British society as well as its elites. While British elites voiced their personal sympathies with the Confederate plantocracy, undoubtedly seeing in them the fading images of Britain’s pre-1832 West Indian planters and South Asian nabobs, Palmerston’s Liberal government wasted no time signing the Lyons-Seward Treaty with the Lincoln Administration on April 7, 1862. This agreement proclaimed the joint abolition of maritime slaving by the US and British navies, ushering in the US-British informal alliance of empires which would play such a crucial role in the third supercycle.

In contrast to British neutrality, the French empire actively intervened in the Americas – but only to pursue one of Bonaparte’s more hair-raising schemes, namely the attempted recolonization of Mexico. The naval forces of Britain, France and Spain had intervened in Mexico in 1861 as punishment for the latter’s default on British and French loans. While Britain and Spain withdrew their forces once the Mexican government committed to terms of debt repayment, Bonaparte snatched defeat from the jaws of victory by sending a French expeditionary army in 1864 to install Maximilian I as emperor of Mexico. Predictably, this incited a local uprising spearheaded by Benito Juárez, the president of Mexico under the Constitution of 1857. Juárez would proceed to depose Maximilian and rule Mexico as the liberal version of an industrial dynast between 1867 and 1872.

Spain was the likeliest candidate for a Confederate alliance, simply because it was a fellow revanchist empire bent on recapturing its former glory. However, Spanish elites had good reason to distrust the Confederacy due to the latter’s sponsorship of Cuban filibusterers as well as the proclamations of antebellum southern politicians calling for the annexation of Cuba. Just as importantly, Spain lacked the military and economic capacity to project significant naval power beyond its core holdings of Cuba, Puerto Rico and the Philippines.

The history of Spanish imperial revanchism between 1860 and 1914 was a series of opportunistic land grabs and defensive counter-insurgencies rather than aggressive annexations. These land grabs and counter-insurgencies included Spain’s war on Morocco (1859-1860), Spanish participation as a junior partner in France’s colonization of Indochina (1858-1863) as well as in the British-French naval occupation of Veracruz, Mexico (1861), the temporary recolonization of the Dominican Republic (1863-1865), a series of unsuccessful naval assaults against Peru and Chile (1864-1866), the war against Cuba’s first independence movement (1868-1878), a second war against Morocco (1893-1894), the wars against the second Cuban independence movement (1895-1898) and the Filipino independence movement (1896-1898), and finally the three Melillan campaigns (1893-1894, 1909-1910 and 1911-1912) in Morocco, the prelude to the dual colonization of the latter by France and Spain in 1912.

Spain participated in France’s Mexican intervention, but removed its troops by 1862. It also administered the Dominican Republic from 1861 to 1865 after a faction of Dominican elites asked to rejoin the Spanish empire, but evacuated its troops when a local uprising broke out

⁶⁸ Harold B. Hancock and Norman B. Wilkinson (1966). “A Manufacturer in Wartime: Du Pont, 1860-1865.” *The Business History Review* 40:2 (213-236).

against the restoration. When a Spanish naval expedition attempted to seize Peru's guano islands in 1866, it experienced ignominious defeat at the hands of Peru's flotilla ironclads and shore batteries.⁶⁹

Yet perhaps the single most striking piece of evidence arguing against the counterfactual of a decisive foreign intervention was the titanic economic boom the war unleashed in the Union states. McPherson has summarized its main features:

Iron production in the Union states was 29 percent higher in 1864 than for the whole country in the previous record year of 1856; coal production in the North during the four war years was 21 percent greater than in the highest four peacetime years for both North and South. The North built more merchant ship tonnage during the war than the whole country had built in any comparable peacetime period despite the crippling of the transatlantic merchant marine by southern commerce raiders and the competing demands of the navy on shipbuilding capacity. Although new railroad construction slowed during the war, the amount of traffic over existing lines increased by 50 percent or more, absorbing the excess capacity created by the railroad-building boom of the 1850s. Traffic on the Erie Canal also increased by more than 50 percent during the war. Despite a drastic decline of 72 percent in the North's leading industry, cotton textiles, the overall manufacturing index stood 13 percent higher in 1864 for the Union states alone than for the entire country in 1860. The North had to import hundreds of thousands of rifles in the first year or two of the war; by 1864 the firearms industry was turning out more than enough rifles and artillery for the large Union army.

And the northern economy churned out plenty of butter as well as guns. Despite the secession of southern states, war in the border states, and the absence of a half-million farmers in the army, Union states grew more wheat in both 1862 and 1863 than the entire country had grown in the previous record year of 1859. Despite the food needs of the army and the civilian population, the United States actually doubled its exports of wheat, corn, pork, and beef during the war to help fill the void created by crop failures in western Europe during the early 1860s.⁷⁰

By 1865, the United States exited the semi-periphery and entered the core, with fateful

⁶⁹ "With the United States preoccupied by its own Civil War, Spain tried to reassert its status as a Great Power in the Western Hemisphere. It recolonized Santo Domingo, helped France place an Austrian noble on the throne of Mexico, and outfitted three frigates to explore the Pacific in the style of Captain Cook's voyages for Great Britain. This naval expedition illustrates the overt ties that linked science, technology, and imperial prowess during this era. By a prearranged plan, these ships abruptly abandoned their scientific contingent on the coast of Chile and sailed north to seize the Chincha Islands. They were quickly joined by a Spanish naval blockade, which tried to force Peru to cede all of its coastal islands. Spain foolishly underestimated the military strength that guano had purchased for Peru, however. During a climactic battle on 2 May 1866, land-based artillery and a fleet of steam-powered, ironclad gunboats repelled Spain's bombardment of Callao, severely damaged five of its best warships, and sank Spain's geopolitical pretensions in the Americas." Gregory T. Cushman, *Guano and the Opening of the Pacific World* (56-57).

⁷⁰ James M. McPherson, *Battle Cry of Freedom*. Chapter 27.

consequences on the trajectory of the British world-system.

Chapter 3

The Forging of the American Colossus

The transformation of the United States into a core polity was accomplished by means of three innovations in the fields of economics, politics and culture, each of which reinvented the institutions of the four western European core polities of Global Cotton (Belgium, Britain, France and the United Provinces) in an American turn. These three innovations were the plebianization of economic investment, the plebianization of national citizenship, and the plebianization of industrial consumerism.

While each of these innovations was significant in its own right, it was their combination which enabled the United States to escape the 19th century version of what 20th century sociologists called the middle income trap, and to ascend to core status precisely where all the other republics and empires of Global Steam remained locked into the semi-periphery. The post-1862 United States was, in short, the world's first miracle economy.⁷¹

To put these plebianizations in their proper historical context, it is helpful to recall one of the bedrock features of the British hegemony, namely large-scale capital flows from the British metropole into the global semi-peripheries as well as the colonial periphery. These capital flows were one of the main mechanisms of unequal exchange whereby value was extracted from the fully waged, partly waged and wageless laborers of the semi-periphery and periphery and concentrated in the hands of British imperial elites.

Mira Wilkins has estimated that 77.1% of the \$7 billion of the long-term foreign direct and portfolio investment present in the United States by 1914 was derived from the other core polities (59.9% from Britain, 9.2% from the Netherlands, 6.8% from France and 0.4% from Belgium), while the remaining 23.9% was from the semi-periphery (15.5% from Germany, 3.9% from Canada, 1% from Switzerland, 0.4% from Japan and 2.5% from all other European polities).⁷² That same year, US-based creditors lent a sum of \$3.5 billion to other polities, which meant the US was a global debtor to the tune of \$4.5 billion on its net international investment account.

What prevented these flows of foreign capital from destabilizing or neocolonizing the US economy was a combination of significant infrastructure expenditure by local polities as well as public investment in science, education and innovation. The key financial innovation which made these expenditures possible was municipal borrowing.

The stock of total US municipal debt skyrocketed from \$25 million in 1840 to \$821 million by 1880, reaching \$4 billion by 1913.⁷³ The funds raised by this borrowing were

⁷¹ Credit for this insight is due to Michael Pettis. See: Michael Pettis (blog). February 15, 2013. <https://carnegieendowment.org/chinafinancialmarkets/68128>.

⁷² Mira Wilkins. *The History of Foreign Investment in the United States, 1914–1945*. Cambridge: Harvard University Press, 2004 (9).

⁷³ Richard Sylla, *The Cambridge Economic History of the United States, Volume 2*. (525-526).

channeled by the world's best-educated population and most sophisticated science policy into public infrastructure as well as state-of-the-art consumer goods.

Howell J. Harriss has pointed out that the cooking stove industry generated as much economic value in 1860 as the entire rail manufacturing industry, while patents for cooking appliances represented one-sixth of all US patents filed between 1845 and 1855.⁷⁴ The US patent system was one of the most efficient engines of innovation of the 19th century, thanks to its transparent rules, low cost of filing, and a legal system which effectively enforced existing patents but also limited their lifespan to encourage rapid commercialization. The result was the world's first patent boom:

Figure 5. US Patents Awarded 1860-1910.⁷⁵

Year	Patents	Patents per 10,000 citizens
1860	7,653	2.4
1870	19,171	4.9
1880	21,761	4.3
1890	39,884	6.3
1900	39,673	5.2
1910	63,293	6.9

One of the most striking examples of this patent boom was the proliferation of high-powered stationary Corliss engines, named after their inventor, Providence, Rhode Island-based entrepreneur George Henry Corliss. In fact, contemporary historians have managed to reconstruct much of the technological history of the late 19th century American steam engine from Corliss' patent filings. Drawing on multiple sources, Nathan Rosenberg and Manual Trajtenberg have estimated the long-range shift from water to steam power in the US economy as follows:

⁷⁴ Howell J. Harriss (2008). "Inventing the U.S. Stove Industry, c.1815-1875: Making and Selling the First Universal Consumer Durable." *Business History Review* 82 (701, 710-711).

⁷⁵ US Patent Activity Calendar Years 1790 to the Present. United States Patent Office.
https://www.uspto.gov/web/offices/ac/ido/oeip/taf/h_counts.htm.

Figure 6. Thousands of horsepower of stationary steam engines in the US, 1838-1880.⁷⁶

Year	1838	1850	1860	1870	1880
Steam horsepower	36.1	230	724	1,215	2,186
Water horsepower	544	827	1,018	1,131	1,227
Total (% steam)	580.1 (6%)	1,057 (22%)	1,742 (42%)	2,346 (52%)	3,413 (64%)

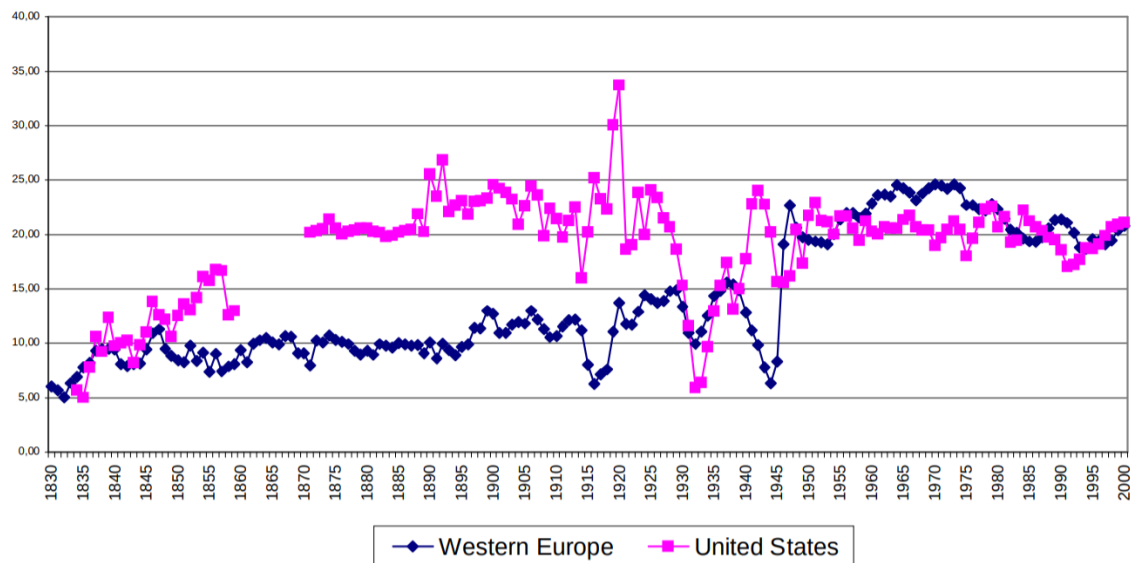
The patent boom was also crucial to the first US telecommunications boom, enabling the number of telegrams sent through the US network to rise eleven-fold between 1867 and 1900 while reducing the cost per telegram by about half in real terms.⁷⁷

The Civil War economic boom, the municipal borrowing boom, and the patent boom collectively raised annual rates of investment as a percent of US GDP from 10%-15% prior to 1860 to 20%-25% thereafter. While statistics from the first half of the 19th century are notoriously imperfect, Albert Carreras and Xavier Tafunell have summarized the consensus estimates of contemporary historians as follows:

⁷⁶ Nathan Rosenberg and Manual Trajtenberg (2004). "A General-Purpose Technology at Work: The Corliss Steam Engine in the Late Nineteenth-Century United States." *The Journal of Economic History* 64:1 (95).

⁷⁷ "Yearly messages sent over its lines increased from 5.8 million in 1867 to 63.2 million in 1900. Over the same period, transmission rates fell from an average of \$1.09 to 30 cents per message. Even with these lower prices, roughly 30 to 40 cents of every dollar of revenue were net profit for the company." Tomas Nonnenmacher. "History of the U.S. Telegraph Industry." *Economic History Association*. <https://eh.net/encyclopedia/history-of-the-u-s-telegraph-industry>.

Figure 7. Annual investment as percentage of GDP in Western Europe and the US, 1830-2000.⁷⁸



This investment boom enabled US per capita incomes to catch up with those of Britain by 1900, and to surpass Britain thereafter.

No less important was the plebianization of politics during the Civil War. Prior to 1860, the American political system was dominated by a white imperial masculinity animated by two main forms of identity-politics, the revanchist white masculinity of the south and the imperial white masculinity of the north. The Civil War enabled a coalition of fully waged, partly waged and former wageless laborers to temporarily break free of both white masculinities by forging the world's first identity-politics of the industrial commons, a decade before the Paris Commune achieved a similar feat and a decade and a half before comparable mobilizations began to appear in Belgium, Britain and the Netherlands.⁷⁹

The keynote of this identity-politics was the personal political commitment. For fully waged workers, this meant the decision of hundreds of thousands of volunteers to join the ranks of the Union Army. For partly waged workers (especially domestic workers and women), it was the decision to exit homesteads and farms and enter offices and factories. For wageless workers, it was the decision to flee from the plantations and cross over into Union lines, in order to seek employment in systems of fully and partly waged labor.

Collectively, all three forms of personal commitment inaugurated the Second American Revolution, whose two main political achievements would be the abolition of wageless labor and the limited reforms of the Reconstruction (1865-1876). This revolution broke out the moment the Union Army sent its first units into Maryland, a Union state which still had significant numbers

⁷⁸ Albert Carreras and Xavier Tafunell (2006). "Long Term Growth of the Western European countries and the United States, 1830–2000: Facts and Issues." International Economic History Association Congress, Helsinki. Graph 12.

⁷⁹ We will describe the nature of this industrial commons more fully in chapter 7.

of wageless laborers:

Despite President Abraham Lincoln's repeated professions about fighting for the Union and nothing more, slaves in Maryland concluded at once that the war was about them and moved toward the Northern army, hoping to secure freedom. Once they had set that process in motion, no effort on the part of slaveholders, military officers in the field, or federal officials in Washington could stop it.

...

Within the ranks of the Union army runaways found valuable allies. The first units to reach Maryland came from Massachusetts and held a number of officers and men spoiling for an occasion to perform their first practical act of abolition. But soldiers of the Pennsylvania, New York, and Ohio regiments that followed also disregarded orders and aided fugitive slaves. Some soldiers lent more than passive assistance. General Charles P. Stone, the federal commander at Poolesville, Maryland, complained in September 1861 that soldiers of his command had 'so far forgotten their duty as to excite and encourage insubordination among the colored servants in the neighborhood of their camps'. Various motives were at work. Most Northern soldiers, knowing little of black people, slavery, or abolitionism, gained their first personal acquaintance with slavery as witnesses to the drama of slaves fleeing for their liberty – and often for their lives as well. Just a few such encounters sufficed to make abolitionists of many men who only a short time before had cared little about such things.⁸⁰

Within a few months, tens of thousands of Union volunteers had transformed the conflict from a counter-insurgency operation into a people's liberation war. Recognizing the facts on the ground, the Republican Congress abolished slavery in the District in Columbia in 1862, resulting in a massive exodus of wageless laborers from Maryland to the capital district.⁸¹ On January 1, 1863, Lincoln proclaimed the emancipation of all wageless laborers in the Confederate states, and by May 1863 the Union launched recruitment drives targeting former slaves for military service. By the war's end, an estimated 179,000 African Americans served in the Union Army, approximately 10% of its total strength, and another 10,000 served in the Navy.

While these soldiers served in segregated units and few were allowed to become officers, the United States became the second polity in the history of the capitalist world-system to proclaim national citizenship for all, regardless of ethnicity or phenotype (the first being revolutionary Haiti). In the words of Lincoln's Presidential Order of July 30, 1863: "It is the duty of every Government to give protection to its citizens, of whatever class, color, or condition, and especially to those who are duly organized as soldiers in the public service."⁸²

The emergence of US industrial consumerism in the post-1865 period was the most paradoxical and contradictory mobilization of them all. One of its most intriguing wartime expressions was the invention of cyberwar, a.k.a. the struggle over telegraph-era SIGINT or

⁸⁰ Ira Berlin, Barbara J. Fields, Thavolia Glymph, Joseph P. Reidy, Leslie S. Rowland, editors. *Freedom: A Documentary History of Emancipation 1861-1867. Series 1, Volume 1, The Destruction of Slavery*. Cambridge: Cambridge University Press, 1985 (331-333).

⁸¹ Ira Berlin et. al., *Freedom* (334-335).

⁸² United States Government. Presidential Order. July 30, 1863. <http://www.freedmen.umd.edu/retal.htm>

“signals intelligence”:

Brilliant service was often rendered by operators who tapped wires and learned of enemy plans or who impersonated operators in the enemy service. This last was usually a difficult feat, for an operator's personal touch in sending by the Morse key was just as distinctive, as characteristic as his voice; and the telegraphers along a railroad line, for example, knew instantly the touch of every other operator on that line. General John H. Morgan, the noted Confederate cavalry raider in Tennessee and Kentucky, and even north of the Ohio River, had always with him an operator named Ellsworth who was a demon at getting information, either imitating other operators' styles, or dashing into their offices and forcing them at his pistol's muzzle to send what he directed. Even so, he was detected and out-witted many times.

Late in 1863, two Union operators, Pat Mullarkey and Frank Van Valkenburg, sent out by General Rosecrans, spent thirty-three days inside the Confederate lines in eastern Tennessee, tapping wires and listening in on the enemy's military secrets, which were seldom sent in cipher. For this reason, Federal wire-tapping was usually more successful than Confederate, for 90 per cent of the Union dispatches were enciphered. Mullarkey and Van Valkenburg were protected to some extent by Union sympathizers among the country folk, and the Confederate authorities, who were aware that there was a bad "ground" somewhere, and were searching for them, were never able to catch them. When the two heroes, after adventures and narrow escapes unsurpassed by the best pulp-paper fictioneers, finally fell in with Union pickets, both were in rags, with naked, bleeding feet and half starved.⁸³

In addition to creating national telegraph networks, this consumerism popularized the technologies of the sewing machine, the cooking stove, and the mechanical harvester. It also ushered in a veritable cultural revolution, as the plebian political commitments forged during the Civil War openly contested the hegemonic white masculinity espoused by antebellum thinkers as diverse as Emerson and Thoreau, and by artists as diverse as Melville and Whitman.

Two of the most prominent signposts of this revolution were the invention of the dime novel, the American version of Britain's penny dreadful, by Irwin P. Beadle & Co. in 1860,⁸⁴ and the lyrical revolution ushered in by Emily Dickinson between 1860 and 1865. Whereas Whitman transformed the British imperial peroration into the American declamation – that self-contradictory admixture of the settler-colonial land purchase and the plantocratic cotton speculation which had not yet become the Federal homestead claim – Dickinson synthesized the progressive industrial realism of Barrett-Browning and the most progressive elements of Baudelaire into the first full-blown lyrical industrial modernism of Global Steam.

Dickinson was the master of telegraphic parallelism. While each of her individual lines had the punch of a war-time telegram, no two lines were transmitted across the same network. Each line was a message sent at the same time but to a different recipient, as it were, with each message separated by that most Dickinsonian of tropes, the dashed hyphen. Consider the

⁸³ Alvin F. Harlow. *Old Wires and New Waves: The History of the Telegraph, Telephone and Wireless*. New York: D. Appleton-Century, 1936 (282).

⁸⁴ Villanova University maintains a list of links to digitized dime novels here: <https://exhibits.library.villanova.edu/dime-novels/links>.

interplay of subject-positions and hyphenation in one of her first masterpieces, poem 214 (1860):

I taste a liquor never brewed –
From Tankards scooped in Pearl –
Not all the Vats upon the Rhine
Yield such an Alcohol!
Inebriate of Air – am I –
And Debauchee of Dew –
Reeling – thro endless summer days –
From inns of Molten Blue –

When "Landlords" turn the drunken Bee
Out of the Foxglove's door –
When Butterflies – renounce their "drams" –
I shall but drink the more!

Till Seraphs swing their snowy Hats –
And Saints – to windows run –
To see the little Tippler
Leaning against the – Sun –

The labor of the taster, the tankard-maker, and the Rhenish winemaker crashes headlong into the monetary authority of the landlord, the canonic authority of the church and the liturgical authority of the acolyte, resulting in the riotous spree of the worker-bee who imbibes its own nectar-surplus. This spree culminates in the bee's physical communion with a sun-like flower, scandalizing the assembled audience of seraphs and saints. Dickinson's aesthetic master-stroke here is the double hyphenation around this flower ("– Sun –"), subtly transforming it from an object into an independent subject – the spectacle, in short, of an openly lesbian eroticism.

Whereas Whitman's homoeroticism always remained heavily closeted due to the public homophobia of the day, Dickinson wrote her poems primarily for a few friends and especially for her romantic partner, Susan Gilbert, thus allowing her to express her lesbian identity with comparatively greater openness. Consider poem 249 (1861), an explicit love poem to Gilbert, which rewrote Melville's contested imperial sea into an oceanic intimacy:

Wild Nights – Wild Nights!
Were I with thee
Wild Nights should be
Our luxury!
Futile – the Winds –
To a Heart in port –
Done with the Compass –

Done with the Chart!
Rowing in Eden –
Ah, the Sea!
Might I but moor – Tonight –
In Thee!

The juxtaposition of the verb “moor” and the term “Tonight” was especially ingenious, due to its implicit pun on what 19th century Western Europeans called the Moors, the Muslim inhabitants of Iberia, the Mediterranean and northern Africa – the negation of the imperial racist trope of a threatening colonial blackness by a space of reconciled difference.⁸⁵

That said, the first moment in Dickinson’s work which registered the geopolitical transition of the Union from a semi-periphery to a core polity was poem 306 (1862). This latter juxtaposed the spectral presence of Queen Victoria in lines 1 and 2 with the political earthquake of Civil War-era abolitionism in lines 9 to 11. Both moments coincide in the shadowy subject-position outlined by lines 12-14, namely the “disclosure” which is half plebian account-book of the Union Army Quartermasters, half appraisal of British investors ascertaining the credit-worthiness of the Union:

The Soul's Superior instants
Occur to Her – alone –
When friend – and Earth's occasion
Have infinite withdrawn –
Or She – Herself – ascended
To too remote a Height
For lower Recognition
Than Her Omnipotent
This Mortal Abolition
Is seldom – but as fair
As Apparition – subject
To Autocratic Air –
Eternity's disclosure
To favorites – a few –
Of the Colossal substance
Of Immortality

⁸⁵ The other noteworthy poems to Gilbert include poem 277 (“What if I say I shall not wait!”, 1861), poem 309 (“For largest Woman's Heart I knew – /”, 1862), poem 518 (“Her sweet Weight on my Heart a Night”, 1862) and poem 611 (“I see thee better – in the Dark”, 1862), poem 648 (“Promise This – When You be Dying”, 1862), poem 659 (“That first Day, when you praised Me, Sweet,” 1862), poem 800 (“Two – were immortal twice”, 1863), poem 1028 (“’Twas my one Glory,” 1865), poem 1401 (“To own a Susan of my own”, 1877), poem 1534 (“Society for me my misery”, 1881) and poem 1643 (“Extol thee – could I? Then I will”, 1885).

There is a similar ambivalence in the final two lines, wherein the “Colossal substance” and “Immortality” could refer to the British hegemon as easily as to the newly-energized American colossus. The first moment when the Union’s core status became openly visible was poem 315 (1862), which transformed the 1850s Christian revivalist oration into the Civil War Presidential address:

He fumbles at your Soul
As Players at the Keys
Before they drop full Music on –
He stuns you by degrees –
Prepares your brittle Nature
For the Ethereal Blow
By fainter Hammers – further heard –
Then nearer – Then so slow
Your Breath has time to straighten –
Your Brain – to bubble Cool
Deals – One – imperial – Thunderbolt –
That scalps your naked Soul
When Winds take Forests in their Paws –
The Universe – is still

The lightning of the British hegemon (“Deal – One – imperial – Thunderbolt”) crashes into the American forest via the ambivalent trope of the scalping, one of the forms of violence endemic to the wars between the European colonists and indigenous American peoples. At the same time, the poem’s final two lines rewrite Baudelaire’s Forest of the Symbol – a.k.a. the Parisian working-class neighborhood halfway between the traditional faubourg and the industrial banlieu – into that strange new thing, the American municipality.

Dickinson took the next logical step in poem 378 (1862), by narrating the emergence of this municipality from the standpoint of its corresponding subjectivity. This latter was rooted in the plebian cosmopolitanism of the citizens of core polities – the more fully industrialized version of the political unconscious of the wageless laborers, partly waged sailors, soldiers, agricultural laborers and servants, and fully waged skilled workers who powered the uprisings of Global Cotton.

Dickinson’s first two lines describe the emergency of the Civil War in terms of a blockage or obstruction of America’s westward frontier expansion (“I saw no Way – The Heavens were stitched – / I felt the Columns close –”). Suddenly, this obstruction gives way to its inversion: the telegraphic sublime of a limitless planetary mobility (“I touched the Universe –”):

I saw no Way – The Heavens were stitched –
I felt the Columns close –
The Earth reversed her Hemispheres –
I touched the Universe –

And back it slid – and I alone –
A Speck upon a Ball –
Went out upon Circumference –
Beyond the Dip of Bell –

The second stanza transforms this telegraphic sublime into the plebian planetarity of the world citizen – a.k.a. one of the first aesthetic depictions of that fully waged proletariat which still constituted only one-quarter of all human beings during the 1860s. What is most striking about this proletarian subjectivity is that it is not just spatial, it is also acoustic. The “Dip of Bell” refers not just to the bell curve of mathematics, but also to the bells, whistles and signals of the railroad and steamship networks expanding all across the planet.

Dickinson’s lyrical achievement has its closest musical analogue in the single greatest work of American popular music during the Civil War, namely the composition of “Battle Hymn of the Republic” in 1861. The lyrics were created by abolitionist Julia Howe and published in *The Atlantic Monthly* in February 1862, while the tune was based on an American folk hymn popular during the early 19th century, and transformed into a marching song by the Union soldiers of the 2nd Infantry Battalion of Massachusetts.⁸⁶ The result was the musical blockbuster of the Second American Revolution, whose lyrics are worth quoting in detail:

Mine eyes have seen the glory of the coming of the Lord;
He is trampling out the vintage where the grapes of wrath are stored;
He hath loosed the fateful lightning of His terrible swift sword:
His truth is marching on.

[Refrain]

Glory, Glory, hallelujah!
Glory, glory, hallelujah!
Glory, glory, hallelujah!
His truth is marching on.

I have seen Him in the watch-fires of a hundred circling camps,
They have builded Him an altar in the evening dews and damps;
I can read His righteous sentence by the dim and flaring lamps:
His day is marching on.

⁸⁶ Laura E. Richards and Maud Howe Elliot, assisted by Florence Howe Hall. *Julia Ward Howe 1819-1910*. Boston: Houghton Mifflin, 1915. Chapter 8. <http://digital.library.upenn.edu/women/richards/howe/howe-I.html#VIII>.

[Repeat refrain]

I have read a fiery gospel writ in burnished rows of steel:
"As ye deal with my contemners, so with you my grace shall deal";
Let the Hero, born of woman, crush the serpent with his heel,
Since God is marching on.

[Repeat refrain]

He has sounded forth the trumpet that shall never call retreat;
He is sifting out the hearts of men before His judgment-seat;
Oh, be swift, my soul, to answer Him! Be jubilant, my feet!
Our God is marching on.

[Repeat refrain]

In the beauty of the lilies Christ was born across the sea,
With a glory in His bosom that transfigures you and me.
As He died to make men holy, let us die to make men free,
While God is marching on.

[Repeat refrain]

The first verse transformed the labor of the wine-maker and the power of lightning, a.k.a. the telegraph line, into the revolutionary army. The second synthesized the labor of the Union volunteers and contractors and the industrial technology of portable lamps into the revolutionary liberated zone, while the third verse celebrated a revolutionary gospel writ in steel. The fourth relocated the trumpet, the clarion call of the uprisings and revolutions of the second supercycle, from the accompaniment of the military march to the popular celebration of physical movement ("Be jubilant, my feet!") fifty years ahead of Louis Armstrong's international jazz modernism. The fifth verse reached back in time to recuperate the radical egalitarianism of the Levellers and Diggers of the English Puritan revolution (1642-1651) in an industrial turn.

The price tag of Dickinson's and Howe's simultaneous lyrical achievements was the birth of open class struggle between fully waged workers on the one hand and merchants, factory owners and railroad magnates on the other. This struggle broke out in Dickinson's poem 406 (1862), which depicted the self-financialization of the municipal subject:

Some – Work for Immortality –
The Chiefer part, for Time –
He – Compensates – Immediately –
The former – Checks – on Fame –

Slow Gold – but Everlasting –
The Bullion of Today –
Contrasted with the Currency
Of Immortality –

A Beggar – Here and There –
Is gifted to discern
Beyond the Broker's insight –
One's – Money – One's – the Mine –

The monetized labor-time highlighted by the first and second lines is leveraged by the pun on the word “Checks”, which functions as both verb and noun in a manner recalling the philosophical nuances of the German term “Schein” (literally external appearance, but also a financial note or a bill). Subsequently, the immediacy of daily wage labor is contrasted to the stored-up labor inherent in “Fame”, a.k.a. the subjectivity of the fully waged national audience.

The second stanza disrupted what Freud called the gold fetish – the notion that a rare, non-oxidizing yellow metal could somehow embody all human wealth – by means of fiat currency. Immortality, a.k.a. core geopolitical status, now meant the power to issue long-term debt (in the case of the Union, the 1862 issuance of the greenback) which was as good as gold. This immediately begs the question of which class benefited from this long-term debt, and which did not. This is the lesson of the third and final stanza, where the individual skills of the broker – the skilled laborers, managers and white-collar elites of the very first divisional corporations – draws the reproach of the immiserated but keen-eyed beggar. The latter's summary judgment, “One's – Money – One's – the Mine –”, is yet another financialized pun, signifying both the place-which-is-being-mined as well as that-which-is-mine-alone, a.k.a. Marx's originary ground-rent which yields the secondary mineral-rent or agricultural-rent.

This critical consciousness was responsible for gems such as poem 524 (1862), which rewrote the Romantic trope of the pastoral thunderstorm into the industrial diorama:

Departed – to the Judgment
A Mighty Afternoon –
Great Clouds – like Ushers – leaning
Creation – looking on –
The Flesh – Surrendered – Cancelled
The Bodiless – begun –
Two Worlds – like Audiences – disperse
And leave the Soul – alone

Semi-peripheral time (“A Mighty Afternoon”) falls into core space (“Creation – looking on”) at the same moment that the historical turning-point or geopolitical path of opportunity (“the Judgement”) accedes to the labor-time of America's fully waged workers (“The Flesh –

Surrendered – Cancelled / the Bodiless – begun”).

This unveiling generated the explosive contradiction of the final two lines, wherein the provisional national unity of the Civil War era begins to pull apart into the struggle of two antagonistic audiences, namely the commoners and citizens of fully waged workers on the one hand, and the plutocratic elites of what Mark Twain and Charles Dudley Warner savagely critiqued as *The Gilded Age* (1873). The shocking scandal of the very last line (“And leave the Soul – alone”) is the first explicit expression of industrial alienation in Dickinson’s work.⁸⁷

Dickinson’s own personal sympathies lay with the workers, albeit with certain qualifications documented by her otherwise ferocious critique of the American culture-industry in poem 709 (1863):

Publication – is the Auction
Of the Mind of Man
Poverty – be justifying
For so foul a thing
Possibly – but We – would rather
From Our Garret go
White – Unto the White Creator
Than invest – Our Snow
Thought belong to Him who gave it
Then – to Him Who bear
Its Corporeal illustration – Sell
The Royal Air
In the Parcel – Be the Merchant
Of the Heavenly Grace –
But reduce no Human Spirit
To Disgrace of Price

While the first half of the poem channeled John Brown by denouncing the auction block which reduces human beings as well as art-works into commodities, the second half failed to generate a critique of commodity production as a system and fell back into the revanchist terminology of hegemonic whiteness (“the White Creator” and “Our Snow”). This was not a

⁸⁷ This alienation would recur as a frequent subtext in a number of her subsequent poems. Examples include poem 587’s theme of radical loneliness (“Empty my Heart, of Thee”, 1862), the racialized “Dark Lady” who haunts the consciousness of imperial white masculinity in poem 593 (“I think I was enchanted”, 1862), poem 600’s theme of vertigo (“It troubled me as once I was –”, 1862), poem 712’s remix of *Madame Bovary*’s infamous covered carriage (“Because I could not stop for death”, 1863), poem 761’s allusion to the self-organization of Civil War-era skilled laborers (“From Blank to Blank –”, 1863), poem 937’s channeling of Baudelaire’s spleen (“I felt a Cleaving in my Mind”, 1864), and poem 1089’s reference to telegraph-induced boredom (“Myself can read the Telegrams”, 1866).

reference to the Union's antebellum imperial white masculinity, but to the industrial whiteness which became the hegemonic identity-politics of the United States after 1865.⁸⁸

That said, there are moments in Dickinson's later works which express skepticism towards this industrial whiteness. Consider her sympathetic portrait of America's immigrant communities in poem 719 (1863):

A South Wind – has a pathos
Of individual Voice
As One detect on Landings
An Emigrant's address.
A Hint of Ports and Peoples
And much not understood
The fairer – for the farness
And for the foreignhood

The strategic use of the term “fairer” – the term means “better” or “superior”, but has the subtext of “lighter-skinned” – refunctioned the threatening trope of the alien other into the benign symbol of a fellow migrant. Poem 821 (1864) went even further, by replacing the subtext of race with that of generational change and grounding the subjective perspective of the migrant (“Is easy, possibly”) in the objective realities of America's accelerated post-1860 urbanization (“Metropolis of Homes”). The combination of exhilaration and fright experienced by immigrants an ocean away from their homeland is suddenly not so different from the undreamt-of opportunities and punishing economic downturns experienced by the rural US citizens migrating to the booming cities of New York, Philadelphia, Baltimore and Boston:

Away from Home are some and I –
An Emigrant to be
In a Metropolis of Homes
Is easy, possibly
The Habit of a Foreign Sky
We – difficult – acquire
As Children, who remain in Face
The more their Feet retire

One of Dickinson's most intriguing meditations on America's ascent to core status, poem 974 (1864), explores the cultural and political possibilities of this urban collectivity. After citing the familiar themes of core immortality and the stinging isolation of industrial society, Dickinson

⁸⁸ For an even more explicit restatement of this contradiction, see Dickinson's poem 970 (“Color – Caste – Denomination”, 1864).

links the technologies of telegraphic immediacy (“quick Calamity”), artificial illumination (“Lightning on a Landscape”) and photography (“Sheets of Place”) into something new:

The Soul’s distinct connection
With immortality
Is best disclosed by Danger
Or quick Calamity –
As Lightning on a Landscape
Exhibits Sheets of Place –
Not yet suspected – but for Flash –
And Click – and Suddenness

It would be all too easy for naive readers to assume that the final two lines described the mundane act of taking a photograph, i.e. the “Flash” is presumably the flash-powder, the “Click” is the mechanism of the camera, and the “Suddenness” is the image frozen in time on the photographic plate. This is not quite correct, due to the fact that the first recorded instance of employing flash powder for photographic purposes took place in 1865 by British photographer J. Traill Taylor, a year after the poem was written. Kate Flint has noted that flash powder would not become popular among photographers until German inventors Miethe and Gaedicke created a cheap and easily-standardized version in 1887.⁸⁹

The mystery can be solved if we recall that the final two lines are preceded by the key phrase “Not yet suspected”. The flash, the click and the suddenness are not external descriptions of industrial space, they are internal metrics of industrial time – that is to say, they are events

⁸⁹ “Even after its extraction and purification were greatly improved in the late 1850s, it [magnesium] remained expensive – 2s 6d for a foot of wire. It was used by the Manchester professional photographer, Alfred Brothers, to take England’s earliest underground photographs, in 1864, of the Blue John Cavern in Derbyshire, and to execute the first magnesium-lit portrait during a demonstration at Manchester’s Literary and Philosophical Society the same year. These exposures exemplify flash’s value for taking photographs where it would not otherwise be possible to do so; the community with which Brothers shared images made by magnesium flash demonstrates the connection between flash (and photography more generally), and broader-based scientific endeavours.

In 1865, the photographic journalist, editor, writer, and photographer J. Traill Taylor introduced his new flash powder, a mixture of powdered magnesium and an oxidizing agent, but since magnesium was still so expensive, and his compound apparently gave off a horrible smell, it was not widely adopted. During the next 20 or so years, a number of devices were introduced and demonstrated – at, for example, meetings of the British Association for the Advancement of Science – that allowed powdered magnesium to be ignited responsibly. Usually these involved blowing it through an alcohol flame, which resulted in a brief bright flash, its duration very much dependent on the skill of the operator. The rapidly falling price for magnesium in the 1880s, following the introduction of new, much cheaper methods for its extraction, meant that there was a push to manufacture a more stable, less smoky compound that could be widely and easily used by photographers. Miethe and Gaedicke were the first [in 1887] to find a method of easily manufacturing flash powder, mixing magnesium powder with potassium sulphate and antimony chlorate: the chlorate compound worked as an oxidizer, the sulphide added to the brilliance of the flash. They called it Blitzlichtpulver, or ‘lightning light powder’, and news of its effectiveness spread rapidly through newspapers with a wide readership as well as through the photographic press.” Kate Flint (2018). “Victorian Flash.” *Journal of Victorian Culture* 23:4 (481–489). <https://doi.org/10.1093/jvcult/vcy045>

taking place within an observer's mind. This observer, the Soul mentioned in the first line, is nothing less than the nascent collective subjectivity of America's fully waged workers, whose consciousness of their class as workers was only just beginning to develop into that coherent class consciousness later exemplified by the most radical trade union militants, suffragists, populists, socialists, anarchists and other critics of empire during the Gilded Age.

Chapter 4

Four Consolidations in the Semi-periphery

The first decade of Global Steam witnessed a momentous transformation of the global semi-periphery coterminous with the American expansion of the core, as dozens of dynastic, mercantile, nobilitarian and settler-colonial polities located in central Europe, South America and East Asia were consolidated into three imperial national capitalisms and four oligarchic republics. The eight separate polities which controlled the Italian peninsula in 1830 were transformed into a single polity by 1866, the thirty-nine signatories of the 1815 German Confederation were reduced to the Austrian and German empires by 1871, the innumerable regional nobilitarian elites of Japan's Tokugawa shogunate were transformed into a centralized dynastic polity by 1869, while the external borders and national polities of Argentina, Brazil, Paraguay and Uruguay were definitively established by 1870.

While these consolidations were not quite the continuation of the revolutionary impulses of the 1848-1851 uprisings or the revolutionary phase of the US Civil War (1862-1865), neither were they the counterrevolutionary revanchisms of Haiti's Soulouque, France's Napoleon III or the US Confederacy. Their single most striking political expression was a series of seven conflicts between 1859 and 1871, which included the Franco-Austrian War (1859), the conflicts of the Italian Risorgimento (1860-1861), the War of the Triple Alliance of Argentina, Brazil and Uruguay against Paraguay (1864-1870), the conflicts of Japan's Meiji Restoration (1868-1869), the Second Schleswig War (1864) between an Austro-Prussian alliance and Denmark, the Austro-Prussian War (1866), and finally the Franco-Prussian War (1870-1871).⁹⁰

We will make three provisional hypotheses concerning these consolidations. First, the Argentine, Brazilian, German, Italian, Japanese and Uruguayan consolidations all succeeded due to their capacity to construct internal class coalitions of merchants, nobilitarian elites, and fully waged and partly waged workers, and to build external coalitions of allied polities. Conversely, the attempts by the Austrian empire and the Japanese bakufu to maintain the pre-1860 status quo and the imperial adventurisms of Paraguay and France's Second Empire all failed due to their inability to build internal as well as external coalitions.

Second, while these consolidations occurred under the aegis of dynastic regimes, their political content was most comparable to the thirty electoral accessions of the American territories and former British colonies into the US empire between 1789 and 1860. To paraphrase Clausewitz, the wars of consolidation were constitutional accessions carried out with extra-constitutional means.⁹¹

⁹⁰ The Austro-Prussian and Franco-Prussian wars also played a crucial role in Italy's unification, by enabling the kingdom of Italy to annex Lombardy-Venetia from Austria in 1866 and Rome in 1870.

⁹¹ "Thus we see that war is not a merely political act but a true political instrument, a continuation of political intercourse [Verkehre], a passage [Durchföhren] of this latter with other means." ["So sehen wir

Third, none of these consolidations transformed their constituent polities from semi-peripheries into core polities. The United States achieved this feat thanks to the unique and unrepeatable constellation of massive inflows of capital from the British empire, the successful national deficit-financing of the Civil War, local states which invested in public education, land-grant universities, and large-scale municipal infrastructure, and the distribution of massive amounts of land to citizens after 1862 at affordable prices – at the expense, to be sure, of the cultural annihilation and physical genocide of indigenous Americans.

While the six new imperial national capitalisms had some of America's advantages, none had all of them. For example, post-1870 Argentina, Brazil and Uruguay all had vast amounts of land, imported large amounts of British capital, and attracted immigrant inflows which generated significant economic growth. Unlike the United States, however, none of these polities invested heavily in public education, universities, municipal infrastructure or land reform. They remained oligarchic societies dominated by rural elites who extracted rents from wageless laborers and sharecroppers, and by urban elites who extracted rents from land speculation. As a result, all three polities remained neocolonial semi-peripheries dependent on imported manufactured goods and exports of coffee, grain and cattle to core consumer markets.

In a similar vein, Germany, Italy and Japan underwent significant urbanization and industrialization following their respective unifications, but remained majority agrarian societies which suffered from limited internal demand for their industrial goods. Although Germany developed efficient mechanisms of industrial finance, created world-class universities, and underwent a degree of rural agricultural development, its imperial elites utilized the 5 billion francs it extracted from France as reparations in 1871-1873 primarily to pay down the debt accumulated by its 1864-1871 wars rather than launching new industries or building infrastructure. For their part, both Italy and Japan borrowed heavily from London's financial markets to launch their respective post-1861 and post-1869 industrializations.

The geopolitical significance of these six imperial national capitalisms was that they signaled the end of Global Cotton's system of British-sponsored buffer states, and the rise of imperial blocs capable of directly challenging the British hegemon. In particular, the War of the Triple Alliance stands as the classic example of a regional imperial bloc (Argentina, Uruguay and Brazil) created to fight Paraguayan expansionism.

The contradictions which drove South America to war can be traced back to the founding of Paraguay under the aegis of José Gaspar Rodríguez de Francia, who ruled as a classic industrial dynast from 1813 until 1840. Paraguay lacked the silver-rents of Bolivia and Mexico, the coffee-rents of Brazil, and the combination of maritime access, immigration and British investments which powered the economies of Argentina, Chile and Uruguay. However, Paraguay

also, daß der Krieg nicht bloß ein politischer Akt, sondern ein wahres politisches Instrument ist, eine Fortsetzung des politischen Verkehrs, ein Durchführen desselben mit anderen Mitteln.”] Carl von Clausewitz. *On the Nature of War*, 1832. Book 1, section 24. This is my own translation.

<http://www.clausewitz.com/readings/VomKriege1832/Book1.htm#1> This is my translation. Robert R. Holmes has helpfully reminded us that Clausewitz's concluding phrase – “with other means” – has been popularly mistranslated as the excessively militaristic “by other means”. See: Robert R. Holmes. “Everything You Know About Clausewitz is Wrong.” *The Diplomat*, November 12, 2014. <https://thediplomat.com/2014/11/everything-you-know-about-clausewitz-is-wrong/>.

did have a strong sense of identity due to large numbers of speakers of Guaraní, a language spoken by approximately 5 million people in contemporary southern Bolivia, Paraguay, and a few regions of northern Argentina and southern Brazil.⁹² Francia leveraged this internal solidarity and Paraguay's geographical isolation to construct a despotic state with a formidable secret police and a capable military. On Francia's death, supreme rule passed to Carlos Antonio López, a wealthy landowner who was reputedly Francia's nephew.

The rule of López from 1841 until 1862 was characterized by continued despotism at home as well as increasingly reckless imperial adventurism on Paraguay's borders with Argentina and Brazil. López's son and inheritor, Solano, went even further by attempting to intervene on behalf of Uruguay's Blancos during Uruguay's 1864-1865 civil conflict, and then launching near-simultaneous invasions of Argentina and Brazil in 1865. The consecutive reigns of the father and son have striking similarities to the reign of Napoleon III, in the sense that López' adventurism matched Bonaparte's limited and mostly successful adventurisms of 1851-1861, precisely where Solano's adventurism was comparable to the increasingly unhinged and ultimately disastrous gambles Bonaparte undertook between 1862-1871. As if to underline the point, López sent Solano on a diplomatic tour of Europe during the 1850s, the zenith of Bonaparte's rule:

In Britain, he [Solano] bought a small warship, the *Tacuary*, and was received by Queen Victoria both at Osborne and at Windsor. In Paris he was presented at the court of Napoleon III and then journeyed to the Crimea to witness the siege of Sebastopol. A photograph from the time shows him standing next to the emperor, dressed in full military uniform, reviewing French troops. He is surrounded by French generals and pointing into the distance, and in several Paraguayan histories the captions erroneously declare that he is directing the maneuvers.⁹³

The parallels with Napoleon III extend all the way to the domestic households of both dynasts. In 1853 Bonaparte wedded Eugénie de Montijo, the daughter of a Spanish count who had resided in Paris since she was seven. Similarly, Solano met his future partner, Eliza Lynch, an Irish expatriate whose family had moved to Paris when she was ten, during his European travels in 1855.⁹⁴

⁹² Yolanda Russinovich Sole (1995). "Language, nationalism, and ethnicity in the Americas." *International Journal of the Sociology of Language* 116 (111-137).

⁹³ Chris Leuchars. *To the Bitter End: Paraguay and the War of the Triple Alliance*. Westport, CT: Greenwood Press, 2002 (12).

⁹⁴ "She [Eliza Lynch] set up her home on a large estate, Patino Cue, which she had specially built a few miles outside Asuncion and to which she invited an increasing number of guests. She filled the house with European furniture and paintings and surrounded herself with favorites—initially foreigners such as Colonel Wisner, and the Englishmen, Whytehead and Thompson, but later Paraguayan society ladies such as Juana Ynsfran de Martinez. For the foreign community, Patino Cue was one of the few places where intelligent and amusing conversation could be had, and Madam Lynch's whist drives became a notable feature of the social scene." Chris Leuchars, *To the Bitter End* (12).

That said, Solano's fatal adventurism preceded Bonaparte's fatal adventurism by five years. Solano's colossally foolish twin invasions of Brazil's Mato Grosso province and Argentina's Corrientes province in 1865 ensured a united regional front against Paraguay, in the same way Bonaparte's equally foolish declaration of war on Prussia in 1870 ensured a united front of Prussia and the German-speaking states against France.

While Solano's army was more numerous and better motivated than the tiny regular armies of Argentina and Uruguay,⁹⁵ Paraguay's agrarian economy, small demographic base (its pre-war population was about 400,000, as compared to Argentina's 1.1 million, Brazil's 8 million and Uruguay's 230,000 citizens) and lack of geopolitically significant allies meant it could never have defeated the Triple Alliance's massive British-financed, French-supplied armies or Brazil's formidable navy.

What needs to be explained, conversely, is why an expensive six-year war of attrition did not shatter strife-prone Argentina and Uruguay into squabbling provinces or undermine Brazil's constitutional monarchy, but restabilized all three polities. Leuchars was the first to observe that "...the War of the Triple Alliance, which has usually been depicted as a discrete entity, can in many ways be seen as a continuation of the period of instability and nation-building that had been in progress since the fall of the colonial empires."⁹⁶

To finance the costs of the war, Argentina borrowed 2 million pesos from the empire of Brazil between 1865 and 1866, and later turned to Britain's capital markets. F.J. McLynn observes:

The net consequence was to tighten the bonds linking Argentina with Britain, since two massive loans had been made in these years of crisis in the River Plate by the Rothschilds to the Brazilian government. The first, in 1863, was for £3,855,307 and the second, in 1865, amounted to a staggering £6,363,613. Following the alliance, British bankers felt secure enough to make loans directly to Argentina. The first was secured with great difficulty by Mitre's envoy Norberto de la Riestra after a visit to London; this was an advance of £518,000 at a rate of interest of 75%. Barings followed up with a further loan, this time for £1,982,000, in 1868. In this way about a quarter of the cost of the war to Argentina was met by British loans.⁹⁷

⁹⁵ "Carlos Antonio López immediately began to make changes in the way Paraguay was governed, creating 'a new state apparatus to replace the colonial structures that had been the mainstay of the Francia regime. His innovations included new ministerial positions, a reorganized treasury, and a military officer corps.' A comparison of the raw numbers between Francia and López reveals the progress of the military buildup under the latter: by 1827, Francia had organized a standing army of 5,000 men with a reserve of another 20,000; by 1857, Carlos Antonio López had raised that to 18,000 with a reserve of 46,000." Randall Schweller. *Unanswered Threats: Political Constraints on the Balance of Power*. Princeton: Princeton University Press, 2006 (94).

⁹⁶ Chris Leuchars, *To the Bitter End* (21).

⁹⁷ F.J. McLynn (1984). "Consequences for Argentina of the War of Triple Alliance 1865-1870." *The Americas* 41:1 (91).

Subsequently, both Argentina and Uruguay became even more dependent on agricultural exports to the US and Western Europe. “Between 1850 and 1870 Argentine wool production increased from 21 million pounds to 137 million pounds,” noted McLynn, “and the big increase came in the sixties when production more than tripled in volume.”⁹⁸ The combination of wartime expenditures and export surpluses resulted in the classic pattern of semi-peripheral dependency:

In all these areas the War of Triple Alliance had its effect by creating a demand for porteño herds and the secondary products of the commerce of the capital, clothes, equipment and all the other impedimenta of armies. The effect on wool and cattle products has already been mentioned, but perhaps the most spectacular consequence was in the case of dried beef. Despite supremely adverse world market conditions, this industry reached its peak in 1868-69, when the combined output of the saladeros totalled 614,500 carcasses, and this at a time when the unit price was declining. The explanation is that dried beef was during the Paraguayan war the staple diet of the Negro freedmen who composed the majority of the Brazilian army; in this way the imperial forces provided an artificial fillip to a declining industry.

The other obvious economic consequence of the war for Argentina was that immense fortunes were made by those who supplied and provisioned the armies, even though they seem to have been more or less incompetent and unreliable in this regard. The principal beneficiaries were Jose Gregorio Lezama, Candido Galvain, Anacarsis Lanus and Ambrosio Lezica. Another man who derived financial benefits from the war in this way was General Urquiza, and this helped to palliate his ideological objections to the Brazilian alliance.⁹⁹

The consequences of the war were equally significant for Brazil. Wartime spending increased its foreign debt from 7.7 million pound sterling in 1860 to 19.5 million sterling by 1875, putting Brazil on the fast track to neocolonial debt dependency. Just as importantly, an estimated two hundred thousand Brazilians from diverse backgrounds served in the army, catapulting the armed forces into a permanent power-broker inside Pedro II’s kingdom. This accelerated the internal pressure for the abolition of wageless labor and eventually resulted in the military coup of 1888 which deposed Pedro II and transformed Brazil into a republic.

After crushing Solano’s armies, the Triple Alliance occupied Paraguay for six years and annexed approximately one third of its prewar territory. While Paraguay survived as a polity, it experienced catastrophic economic and demographic losses during the war and did not return to its prewar population until 1900.¹⁰⁰ Three years after the occupation ended, Solano’s former cavalry general, Bernardino Caballero, became Paraguay’s industrial dynast from 1880 until the turn of the century.

What needs to be explained at this point is why South America’s war of consolidation ensured the long-term stability of the region – no military conflicts have occurred between Argentina, Brazil, Paraguay or Uruguay since 1870 – precisely where the Italian, German and Japanese consolidations generated destabilizing regional rivalries. There were three main reasons

⁹⁸ F.J. McLynn, “Consequences for Argentina of the War of Triple Alliance 1865-1870” (93).

⁹⁹ F.J. McLynn, “Consequences for Argentina of the War of Triple Alliance 1865-1870” (94).

¹⁰⁰ This is data from Clio Infra. <https://clio-infra.eu/Countries/Paraguay.html>.

for this divergence.

First of all, the population of Argentina was 1.8 million in 1870, that of Brazil was 9.8 million, and that of Uruguay was 343,000. This was far smaller than the kingdom of Italy's 27.9 million, the German empire's 41 million, and the kingdom of Japan's 34.4 million.¹⁰¹ In terms of its demographic weight and semi-peripheral economic status, the Triple Alliance was most comparable to a theoretical bloc of Denmark (1.9 million), Sweden-Norway (5.9 million) and Switzerland (2.7 million). While both blocs could engage in regional policing actions, neither had the resources to acquire maritime empires of their own.

Second, Germany, Italy and Japan all had fast-growing populations, limited amounts of agricultural land, and comparatively small markets for their home industries. Their elites were fully aware that the British, Belgian, Dutch and French maritime empires had become powerful by seizing vast amounts of arable land overseas and extracting resources from colonial populations. It thus made perfect sense for their elites to construct their own navies and join the quest for settler colonies and captive colonial markets.

By contrast, most South American polities had vast internal frontiers available for agricultural expansion, and had just begun their own industrialization. Their largely agrarian elites prospered thanks to exports of agricultural commodities to the US and UK, and saw no reason to tax themselves in order to finance navies capable of challenging a hegemonic Britain, a formidable French navy, and a fast-growing American navy. As a result, South American elites chose to align themselves with the British hegemon as protection against the imperial adventurism of France, Spain and the US, very much as Denmark and Sweden-Norway aligned themselves with Britain as an insurance policy against German and Russian expansionism.

The third reason was that whereas the Allied victory in the South American conflict preserved Uruguay and Paraguay as buffer states between Argentina and Brazil, the unifications of Germany, Italy and Japan eliminated vast numbers of buffer states or their institutional equivalents from their respective regions. In a remarkable essay, "The Lost Intermediaries," Paul W. Schroeder argued it was not so much the 1871 Prussian military defeat of France which fundamentally destabilized the post-1815 European order, as the disappearance of the southern German buffer states during Bismarck's consolidation of that victory. While each single intermediary state was far weaker than any single great power, networks of intermediary states could and did exert a significant moderating influence on great power rivalries:

Great powers interacting in the presence of intermediary bodies, and partly through them, enjoy a broad range of modes for their interaction. In respect to the intermediary states and each other, they can variously try to cooperate to maintain the status quo, share influence, neutralize the area, pledge mutual non-aggrandizement and noninterference, compete for dominant influence, partition the area into spheres, or seek some combination of these. None of these modes intrinsically tends toward overt great power conflict; some lead away from it. Great powers that face each other directly, in the absence of intermediary states, enjoy fewer choices of relations. Though there are always gradations and variations, basically the choices reduce to four: (1) an equal partnership or alliance; (2) dependence by one power on the other one; (3) a hostile alliance, in which two rival great powers agree to be allied solely or mainly

¹⁰¹ This is data from Clio Infra. <https://clio-infra.eu/>

because without alliance ties they are likely to get into war; and (4) direct competition and rivalry. None of these inherently promises a stable or satisfactory relationship...

...

In sum: where intermediate states exist, great power rivalry stands a good chance of being limited to competition for primacy. Where they do not, great power rivalry tends powerfully toward struggle for mastery.¹⁰²

Schroeder emphasized that intermediary states need not have full territorial independence or official political status to exert profound effects on the great powers. The partitioning of the Polish state in the late 18th century was a case in point. Instead of ensuring peace, the partition created a time-bomb which would explode in 1914.¹⁰³ One of Schroeder's keenest insights was that the Italian and German unifications were fatal for the geopolitical position of the Austrian empire:

Basically, 1871 left Austria no alternatives. With the demise of independent South German states went the old balance in Austrian policy between Central European and Near Eastern interests, her *raison d'être* as a great power. From this balanced, if precarious, position Austria had even after 1866 been able to negotiate with France and Italy for alliances and to play a general European great power role. Now the one overriding issue was relations with the German Reich, and here Austria had no real choice. A genuinely equal partnership was desirable but wholly unrealistic, given existing power relationships and Bismarck's and William I's known predilections for Russia. All-out competition with Germany would be suicidal. There were none of the requirements present for a restraining alliance between rivals. Austria's one option was to accept dependence upon Germany, and try through a German alliance to be a great power in the one area left to her, the Near East, against the one rival she could stand up to with German backing, Russia. By great skill and ingenuity Bismarck succeeded in controlling this problem for a good while, but it never went away, tended always to get worse, and grew beyond his managerial powers even before his fall. In this instance, an apparently determinist formula is not too strong: no independent South Germany,

¹⁰² Paul W. Schroeder. "Chapter 4. The Lost Intermediaries: The Impact of 1870 on the European System." In: *Systems, Stability, and Statecraft: Essays on the International History of Modern Europe*. Edited by David Wetzel, Robert Jervis, and Jack S. Levy. New York: Palgrave Macmillan, 2004 (79-80).

¹⁰³ "The partitions of Poland (1772-95) did create a bitter three-way rivalry, especially between Austria and Prussia, already enemies in Germany. The Polish issue, which more than anything else wrecked the Austro-Prussian alliance of 1792, also came close to wrecking the anti-French Eastern coalition in 1814-15. Only the conviction that Poland could not be restored as an intermediary state, that it would always be a center of liberal and revolutionary conspiracy and a satellite of France, forced the three Eastern powers into a mutual alliance of restraint (the so-called Holy Alliance and its later variants) designed, among other things, to keep Poland from being restored. In a sense, the Polish nation remained a *corps intermédiaire* [French: intermediary corps] linking Austria, Prussia, and Russia even when there was no Polish state. When the Three Emperors' Alliance finally broke down in the 1880s, however, Poland once again became the focus of a three-way rivalry, especially during World War I." Paul W. Schroeder, *Systems, Stability, and Statecraft* (80-81).

no really independent Austria-Hungary.¹⁰⁴

While Schroeder's essay focuses exclusively on the imperial rivalries of nineteenth century continental Europe,¹⁰⁵ the concept of intermediary states has powerful relevance to the imperial rivalries of central, southeast and east Asia. We will argue that the central Asian polities of Bukhara, Khiva, Qazaq and Kokand functioned as intermediary states constraining Russian and Chinese land-based expansionism between 1689 and 1847, precisely where the southeastern Asian kingdoms of Korea, Thailand and Vietnam constrained British, Chinese, Dutch, Japanese and Spanish maritime expansionism between 1815 and 1887. Conversely, the disappearance or neutralization of these intermediary states during Global Steam triggered the zero-sum competition between British, Chinese, Dutch, French, Russian and Japanese imperialism which exploded in the titanic Pacific wars of the 20th century.

We will examine the trajectory of the Pacific imperialisms more closely in Chapter 10, but our first task is to focus on the key antecedent of the German unification, namely Italy's Risorgimento, for evidence either confirming or disproving Schroeder's thesis of vanishing intermediaries.

The cultural antecedents of Italian nationalism can be traced back to Alessandro Manzoni's classic novel *The Betrothed* (1827), which leveraged the dialect of Tuscany as a model of a future united Italian language. Its political antecedents date from the creation of the secret revolutionary society of the Carbonari, whose members helped spark the unsuccessful Italian uprisings of 1820-1821, 1830-1831 and 1848-1851.

The two most famous alumni of the Carbonari were Giuseppe Garibaldi and Giuseppe Mazzini, the leading military and political icons of the Risorgimento, respectively. Garibaldi participated in various South American regional uprisings in Brazil and Uruguay, fought for the republics of Lombardy-Venetia and Rome during the 1848-1851 uprisings, and played a key role in the 1859-1861 military campaigns which united most of Italy. Mazzini founded the influential Young Italy movement in 1831 and helped popularize the term Risorgimento (literally, "resurgence") in the early 1830s. Imprisoned in France between 1834 and 1837 and forced into British exile, he conducted a highly effective publicity campaign to convince the British public to support Italy's unification.

That said, the two institutional engines of Italian unification were the long-standing

¹⁰⁴ Paul W. Schroeder, *Systems, Stability, and Statecraft* (84-85).

¹⁰⁵ "There is little doubt that in nineteenth century Europe certain states, though relatively small and weak, had an importance for the nineteenth century system far transcending the power they possessed. Had they disappeared, annexed by some greater power or partitioned among several, their disappearance would have tended to destabilize the system not merely or mainly by its effects on the general distribution of power, but by the removal of their presence, the absence of their functions. Belgium, Holland, Switzerland, and the Ottoman Empire belonged to this category throughout the century; Serbia, Rumania, Bulgaria, Sardinia-Piedmont, and Denmark could plausibly be named for some periods. The disappearance of Poland in the late eighteenth century is a good example of the destabilizing effects indicated here. This essay proposes to add the South German states to the list." Paul W. Schroeder, "The Lost Intermediaries" (78).

imperial competition between the Austrian and French empires vis-a-vis the politics of the Italian peninsula, and the local expansionism of the Italian kingdom of Sardinia under the house of Savoy. Sardinia's energetic prime minister, Count Cavour (Camillo Benso), orchestrated Italian unification between 1852 and 1861 via alternating bouts of responsible diplomacy and seemingly irresponsible (but secretly pragmatic) military adventurism very much as Bismarck orchestrated the 1864-1871 German unification.¹⁰⁶

In July 1858, Cavour succeeded in garnering Napoleon III's support for a proxy war against Austria in exchange for the county of Nice and the duchy of Savoy. Cavour's gambit came to fruition when a coalition of French and Sardinian armies defeated Austrian forces at the battle of Solferino in June 1859. While Austria retained control of the territories of northeastern Italy, Lombardy's elites agreed to join Sardinia in the nascent kingdom of Italy in November 1859. Meanwhile, Bonaparte staged an egregiously rigged referendum confirming the French annexation of Nice and Savoy (this would forever remain a sore point with Garibaldi, who was born and raised in Nice). By March 1860, Cavour had convinced most of the central Italian polities outside of the Papal States to join the Italian kingdom, increasing its size to roughly half of the Italian population.

The unification of the south began with an April 1860 insurgency in the Bourbon-ruled kingdom of the Two Sicilies. Garibaldi took this opportunity to launch the Expedition of the Thousand, a group of 1,089 volunteers which landed in Sicily on May 11, 1860 on two cargo ships. While the British empire remained officially neutral vis-a-vis Italy's unification, it made its sympathies clear by protecting Garibaldi's expedition with a frigate and two gunships of the British navy under admiral Rodney Mundy, second in command in the British Mediterranean fleet.

While Garibaldi's forces quickly defeated the island's Bourbon army, the new authorities would bloodily crush a peasant uprising in and around the town of Bronte during the summer of 1860 with extreme brutality, pointing to one of the fundamental contradictions of the newly-formed Italian state. This was the yawning abyss between the urban elites of its industrializing north and the agrarian elites of its semi-feudal center and south on the one hand, and its majority rural population of tenant farmers and sharecroppers on the other. The result was a wave of rural uprisings which swept over the southern regions of newly-unified Italy, and

¹⁰⁶ David Gilmour summarizes the imperial adventurism of the Sardinian state thus: "He [Cavour] was indeed a brilliant diplomat but he was also a lucky and sometimes irresponsible one. Bismarck in Prussia considered it immoral to start a general European war for the sake of German unity and expansion. Yet Cavour often talked of wide conflagrations, of 'setting Europe alight', stirring up the Balkans, bringing in the Russians, fomenting implausible civil wars in Germany and Switzerland. Nor was this just talk. In 1859 he sent thousands of rifles to Hungarian rebels fighting the Austrian Empire and a year later dispatched five shiploads of weapons for use by Romanian revolutionaries against the Ottoman Empire. When it was discovered that the ships' crates, which masqueraded as coffee containers, actually contained guns, there was a diplomatic uproar. Cavour tried to lie his way out of the scrape but did not fool Queen Victoria, who was appalled by the piratical actions of 'this really bad, unscrupulous Sardinian government'. In the year of his death Cavour was still plotting a great European conflict that would result in an enlargement of Italy's borders." David Gilmour. *The Pursuit of Italy: A History of a Land, its Regions and their Peoples*. London: Penguin Books, 2011. Chapter 8, The Wisest Statesman.

persisted well into the late 1860s.¹⁰⁷

In August 1860, Garibaldi crossed over to the mainland and marched north while the armies of the Italian kingdom marched south, in an autumn campaign which was half small-scale battles against demoralized regional armies and half popular election campaign. By March 1861, Italy's eight post-1815 polities had been reduced to the constitutional monarchy of Italy under Victor Immanuel, Austrian-controlled Venetia, and the Vatican-controlled Papal States which included Rome.

The final act of Italy's imperial national unification converged seamlessly with the opening act of Germany's unification. For reasons of internal dynastic politics, Napoleon III had guaranteed the independence of the Papal States and stationed a French military garrison in Rome, preventing the new Italian state from simply marching into the city.¹⁰⁸ Austria's defeat in 1866 enabled Italy to annex Venetia, while France's defeat in 1870 enabled Italy to annex the Papal States and Rome.

The cultural and ideological roots of German unification are often traced back to the lyric, literary and dramatic Romanticism of Goethe and Schiller, the musical Romanticism of Beethoven, and the ideological innovations of Kant's systematized rationalism and Hegel's systematic idealism. It is true that all of these artists and thinkers responded to the popular mobilizations of the Atlantic revolutions with speculative populisms not yet backed by plebian audiences or democratic polities. Goethe's *Faust* was half alchemist, half real estate huckster; Schiller's *William Tell* was half revolutionary guerilla, half parliamentary representative; Beethoven's *Ninth Symphony* was half conservative oratorio, half revolutionary anthem; Kant's thing-in-itself was half use-value, half exchange-value; while the Hegelian Spirit was half Napoleonic industrial dynast, half Marx's British hegemonic capital.

Yet the economic roots of German unification – that striking economic dynamism which granted Prussia significant local autonomy, precisely where Sardinia was dependent on French arms and British goodwill – were the result of a much longer history. During the Hapsburg hegemony of 1492-1618, the German-speaking states experienced a significant economic expansion thanks to the export of agricultural and craft goods in exchange for the Hapsburg empire's American silver. Many of these states also became hotbeds of the Reformation, a powerful spur to vernacular mass literacy.

These states subsequently became the bloodiest battlefields of the Thirty Years' War. This colossal human disaster cemented the political fragmentation of the German-speaking polities, but it also facilitated the growth of three empires located outside of the zone of immediate

¹⁰⁷ "Brigandage was such a major problem in the 1860s that the newly created Italian state sent a large military force to the south, making up at one point two-thirds of the entire Italian Army, during the so-called 'brigand wars'. Eventually order was restored by what was virtually an army of occupation, numbering 120,000 troops." Richard J. Evans. *The Pursuit of Power: Europe 1815-1914*. New York: Penguin, 2016 (109).

¹⁰⁸ The two attempts to do so ended ingloriously. In 1862, Garibaldi raised a volunteer army to liberate Rome. Victor Immanuel (Cavour had passed away in 1861) immediately sent the official national army to stop him. Garibaldi forbade his soldiers from opening fire on the national army, choosing to be voluntarily disarmed and briefly imprisoned rather than commit fratricide. In 1867, Garibaldi tried again only to be defeated by a small contingent of Vatican troops and French soldiers.

conflict: Prussia, the Polish-Lithuanian Commonwealth and Russia. During the epoch of the Dutch-French co-hegemony, Prussia benefited from its long-standing maritime links with Dutch-French core markets (by contrast, Peter the Great was forced to construct St. Petersburg in 1703-1712 to create maritime connectivity), the legacy of the Reformation's literacy revolution, and the propitious external environment of France's post-1749 imperial overstretch.

The result was the reorganization of the Prussian state into a formidable regional power during the reign of Frederick the Great (1740-1786). This dialectic of warfare-induced reform and subsequent territorial expansion continued during the Napoleonic Wars, when battlefield defeats compelled Prussia to abolish serfdom and create an effective system of military reserves. After the fall of Napoleon, the Congress of Vienna granted Prussia sufficient territory to transform it into a regional great power, with an explicit mandate to forestall French revanchism and an implicit one to restrain Russian expansionism.

What the British hegemon could not have foreseen was how the four core polities of Global Cotton – Belgium, Britain, France and the United Provinces – would catalyze the semi-peripheral economies of central Europe. Goods, travelers, merchants, migrant laborers, finance and technologies flowed across borders, powering the post-1860 expansions of Denmark, the German-speaking states, the northern Italian states, Sweden-Norway, Switzerland, and the Catalan region of Spain in the same way that maritime flows of trade, migrants and capital powered the expansions of Australia, Canada, New Zealand, North and South America, and post-1854 Japan.

What made the German-speaking states unique, however, was their combination of economic dynamism, extreme political fragmentation, and potentially vulnerable land borders adjoining the Austrian, French and Russian empires. This is why Prussia's relationship to its German-speaking neighbors had its closest geopolitical parallel not to Sardinia's relationship to the other Italian states, but to the relationship of the progressive factions of the Meiji restoration – the Chōshū, Satsuma and Tosa domains – to the obsolete political machinery and reactionary factions of the Japanese bakufu.¹⁰⁹

Prussia's military inferiority vis-a-vis Austria, France and Russia played the same motivating role for partisans of German unification as Japan's military inferiority vis-a-vis British, French and US maritime imperialism played for the Meiji reformers.¹¹⁰ Similarly, the

¹⁰⁹ “The push for meaningful change came, not unexpectedly then, from those clans who had been systematically marginalized under the Tokugawa regime: clans such as Satsuma and Chōshū in the Southwest which had been excluded from top-level involvement in national government due to their status as *Tozama*, former enemies of Tokugawa Ieyasu, the Edo Bakufu's founder.” Alistair D. Swale. *The Meiji Restoration: Monarchism, Mass Communication and Conservative Revolution*. New York: Palgrave Macmillan, 2009 (31).

¹¹⁰ Three of the most important of the Meiji reformers included Sakuma Shōzan, a scholar and politician who lobbied for the adoption of modern military technology and who created Japan's first experimental telegraph in 1849 by studying Dutch books; Yokoi Shōnan, whose ground-breaking 1860 essay, “The Three Major Problems of State Policy”, was the first comprehensive blueprint of the major economic, cultural and political reforms of the Meiji era; and Yoshida Shōin, an insurrectionary and teacher at Shōka Sonjuku, a small private school. While Shōin was executed in 1859 after a failed rebellion and Shōzan was assassinated in 1864 by conservative samurai (Japan's class of hereditary warriors), their followers

Prussian monarchy's near-implosion during the 1848-1851 uprisings had its Japanese equivalent in a series of violent internal conflicts, political assassinations and attacks on foreigners between 1862 and 1868.

When members of the Satsuma faction attacked and killed a British merchant in 1862, the British demanded financial compensation and unleashed a punitive bombardment of Kagoshima on August 15-17, 1863. The Satsuma faction declared victory, but quietly paid the compensation and subsequently interacted with the British peacefully in order to acquire technology, finance and military hardware.

This was followed by the Kinmon incident of August 20, 1864, when five thousand rebels attacked the shogunate in Kyoto. The rebellion was defeated by a much larger army, but the shogunate's attempt to send a punitive expedition to destroy Chōshū, the main sponsor of the rebellion, was defused by the Satsuma faction via the token execution of a few rebels. While the shogunate was concentrating on the Chōshū faction, the Satsuma faction was synthesizing the toolkit of the later Meiji reforms:

When Godai Tomoatsu had returned from his visit to Shanghai in 1862, he had been convinced of the need for Japan to develop a foreign trade, which could be carried in Western-style but Japanese-owned vessels. The strength of *joi* [literally, "restoration"] feeling in Satsuma prevented him from making any headway with such proposals during the next two years, but in May or June 1864 he drew up a memorial that contained the seeds of most of the plans Satsuma later carried out. The domain must send an educational mission to Britain and France, Godai argued, made up of students from various elements of the feudal class: Karo houses, hirazamurai [low-ranking samurai], young *joi* enthusiasts, technical specialists. These should be ordered to apply themselves to a wide range of military, scientific, and administrative studies. In addition, trade must be opened with Shanghai, the proceeds of which – he calculated them in some detail – could be devoted to the purchase of arms and industrial investment, thereby providing for both immediate military needs and long-term economic advantage.

These proposals, which Shimazu Hisamitsu and Okubo supported, were adopted by the domain government and put into effect, only slightly modified, in 1865. Fourteen students were selected and sent to London in charge of four officials, including Godai and Terajima. On arrival there in June they were put to the learning of English, together with the study of some special field, like navigation, naval engineering, military science, or medicine (one, surprisingly, was allowed to choose literature). They were then sent on visits to America, Russia, and France. A further party of five joined them in 1866. Meanwhile, the officials who escorted them inspected factories and military establishments, organized the purchase of weapons and machinery, and even engaged in diplomatic discussions with the governments of Britain and France. Indeed, they behaved almost as if their domain was an independent state, arranging among other things for the inclusion of a separate Satsuma exhibit at the Paris Exposition of 1867.¹¹¹

When the shogunate finally sent another expedition in 1866 to crush the Chōshū once and

and students comprised the key personnel who carried out the Meiji reforms of the 1870s. For further details, see: Alistair D. Swale, *The Meiji Restoration* (32-36).

¹¹¹ W.G. Beasley. *The Meiji Restoration*. Stanford: Stanford University Press, 1972 (246-247).

for all, the punitive force was annihilated by the Chōshū's modernized army on June 7, 1866. The Chōshū, Satsuma and Tosa factions subsequently united their forces via the Satchō Alliance, creating a de facto stalemate with the shogunate until the Restoration of 1868.

The watershed event of this latter was the 1868-1869 Boshin war fought between the Meiji reformers' modern army and the Tokugawa forces backed by a number of Edo factions, as well as the northern factions of Aizu, Echigo and Ōu. The conflict was very much the Japanese version of the Austro-Prussian war of 1866, in the sense that the Meiji reformers had overwhelming military superiority and were careful not to unduly antagonize foreigners. Where Bismarck played up Napoleon III's irredentist claims on Belgium and Luxembourg to keep Britain neutral during the Franco-Prussian War, the Satchō Alliance played up the irredentism of the shogunate forces to convince Britain and the US to remain neutral during the Boshin war (a few French officers served as military advisors to the shogunate's short-lived Ezo republic on Hokkaido, but had no effect on the final outcome).

While approximately 120,000 soldiers were mobilized during the Boshin war, total casualties were only 13,200, and the members of the shogunate army were quickly pardoned and the leaders of their factions peacefully reintegrated into the new regime, paralleling the post-1866 reconciliation between the German and Austrian empires.

No less striking are the parallels between Bismarck's 1862-1890 achievements as prime minister of Prussia and chancellor of Germany, and the achievements of Japan's 1871-1890 Meiji reformers. Both administrations created imperial national polities, economies and cultures out of a welter of local and regional institutions and forebears, the main difference being that the Meiji reformers compressed one hundred and seventeen years of German history (i.e. 1754 to 1871) into thirty-one years. The highlights of this compression included the replacement of the feudal daimyos with national prefectures in 1871, the abolition of the samurai class and the creation of a conscript army in 1873, the monetization of the economy (the Bank of Japan was founded in 1877), the construction of a national railroad system, the proclamation of a national constitution in 1890, and the end of extra-territoriality vis-a-vis the British hegemon in 1899. In Swale's words:

Kosaka [Masaaki] defines the decisive turning point away from the retrospective movement as 1871 with the implementation of the policy to abolish the Domains and the promotion of the Dajōkan above the *Jingikan*. More importantly, he notes the transformation of the daily lives of people in the cities: the first railways, the first postal services and, for the broader population, the implementation of (notionally at least) a national education system and a system of military conscription. The ultimate mark of personal transformation was, naturally enough, the cutting of hair in the Western style. None of these things are of course causally sufficient, but they indicate more precisely how the new-model Japanese citizen was beginning to emerge out of the chrysalis of the Restoration.

In reality, the lives of those living in the countryside varied to some extent depending on their proximity to major urban centers or profitable commodities; a substantial proportion, however, were to witness the effect of an influx of foreign-made goods that would drive many of the traditional artisans and manufacturers into penury, while also draining the nation of gold and silver reserves that were the main recourse for obtaining foreign currency. The urban public would experience the negative impact of opening the internal markets as well but there was the consolation of new commodities and conveniences

that had the undeniable capacity to enthrall the popular imagination. There were tangible signs of “progress” in the form of new public buildings, post offices and railway stations – as well as new urban shopping precincts (such as the one at Ginza) with the newly established network of gas lamps. There was also the hitherto unimaginable convenience of new forms of transport such as the postal steamer and – albeit in relatively limited geographical cases – the railroad. There were new modes of communication such as the daily newspaper and the telegraph. It did not particularly matter that not everyone could afford to personally utilize or experience these inventions in their personal lives, what mattered most was that it gave concrete expression to a new form of national lifestyle.¹¹²

Where Germany’s unification diverged from its Japan counterpart was Moltke’s revolution in officer training. This revolution built on one of the least-known but most significant managerial innovations of Prussia, namely the randomized tactical simulation or war game, the distant predecessor of the role-playing and adventure videogames of the late 20th and early 21st centuries:

War games originated with two Prussian officers, the Reisswitzes, between 1810 and 1824. Originally a game played with plaster terrain and porcelain models at a scale of 26 inches to the mile, it evolved into metal symbols – blue for Prussia and red for the enemy – moved about on a relief map at 8 inches to the mile. Two commanders played against each other, moving one at a time the same distance as actual troops could in a day. A set of rules, an umpire – the conductor – who mediated between the opposing sides, and dice standing for the element of chance in war. If blue, with 200 men, attacked red, with 100, four sides of the die were coloured blue, two sides coloured red. When the dice were thrown, if blue turned up, they had won. Casualties were then apportioned.

When GGS Chief Müffling first saw the game in 1824 he immediately described it in the *Militär-Wochenblatt* [Military Weekly]. ‘It’s not a game at all’, he said, ‘it’s a veritable war school!’ It was not only legitimized, it became fashionable when King Frederick William III, his son Prince William and officers of the Berlin garrison played. Regiments were furnished with war game kits. Competitions were held. Fifteen years later, as corps chief of staff, Moltke’s team won the annual all-army war game competition.¹¹³

The dissemination of war games was a telling sign of the accelerating industrialization of warfare during the nineteenth century, as muskets, the Napoleonic infantry column and cannonades gave way to rifles, railroad logistics and artillery barrages. Prussia’s unusually rapid adoption of the principles of industrialized warfare during the 1830s and 1840s was a product of necessity, as it lacked the demographic heft available to continental rivals Austria, France and Russia.

The asynchronous development of the forces of land-based mass destruction (in the realm of sea-based destruction, Britain retained absolute supremacy while France was a formidable

¹¹² Alistair D. Swale, *The Meiji Restoration* (75-76).

¹¹³ Arden Buchholz, *Moltke and the German Wars, 1864-1871*. New York: Palgrave, 2001 (33-34).

second) propelled Helmut Moltke to the chief of general staff in 1857, the first such position of any army on the planet. Moltke introduced wide-ranging reforms in the Prussian army, the most important of which were tactical decentralization by a highly-trained officer corps, strategic concentration under a telegraph-connected general staff, steel-based artillery, and the utilization of railroads to accelerate deployment as well as to sustain unprecedented numbers of soldiers in the field. Above all, Moltke was a keen student of the revolutionary developments of the US Civil War:

Justus Schiebert, an engineer officer with excellent English, was chosen. He was sent specifically to gather data regarding the effect of rifled artillery on earth, masonry and iron. But in reality he had wide-ranging experiences between March and August 1863. Schiebert was an eyewitness at 14 battles, including Chancellorsville, Brandy Station and Gettysburg. He observed and talked with Lee, Stuart and Stonewall Jackson. Upon his return he discussed his conclusions widely, lectured in the War Academy and General Staff and became so well known that he was on special assignment during the Danish War and Bismarck requested his services as a guide through the captured Danish works at Dybbol.

Prussian observers began publishing their impressions of the American Civil War in 1862. They emphasized the advantages of technology: the ferocious impact of artillery, and the great difficulty of storming a position held by rifled infantry.

Almost from the start the American Civil War was a railroad war. In the first battle of Bull Run, 21 July 1861, railroads played a role in strategic manoeuvre. At the battle of Shiloh, 6-7 April 1862, both sides brought up forces by rail. It became the single means above all for moving and supplying the huge Union Army which ground away the Confederacy. It was the Military Railroad Construction Corps that allowed Sherman his slow, methodical advance from Chattanooga to Atlanta. In October 1863 occurred the epic rail transport of nearly 80,000 men, 1200 miles from Virginia to Tennessee in seven days! For Europeans, this was equivalent to moving three corps from Berlin to Moscow in a week's time! A feat impossible ten years before, it allowed a permanent Union position to be held and reinforced deep in Confederate territory. With the opening of the Mississippi River, when Vicksburg surrendered that summer, Sherman was enabled to launch his drive from Chattanooga to the Atlantic Ocean, a war-ending strategic move.

For Moltke the revolutionary impact of railroads was clear. And he put this knowledge to good use. Moltke began to look at the German states as a grid pattern. The great rivers which flowed south to north were the unchangeable barrier positions of German defenses. The system of railroads east and west, he said, set the main directions of travel for all time. It can be enlarged, but not essentially changed. These fundamental relationships conditioned the direction of transport and also outlined the initial concentration format of the Prussian Army.¹¹⁴

After Bismarck was named prime minister of Prussia in 1862, he promptly put Moltke's army to work via the 1864 Austrian and Prussian joint invasion of Denmark, a.k.a. the Second Schleswig War.¹¹⁵ The invaders justified their war in the name of the German Confederation's

¹¹⁴ Geoffrey Wawro, *The Franco-Prussian War* (72-73).

¹¹⁵ By a quirk of fate, Moltke was an ethnic German whose family moved to Holstein when he was five, and subsequently enrolled him at a military school in Copenhagen, Denmark. He became a second

dynastic claim to the provinces of Schleswig and Holstein, regions whose populations were 80% ethnically German and which had made an unsuccessful bid for independence from Denmark during the 1848-1851 uprisings. In reality, the war proved to be the first in that series of finely calibrated diplomatic gambits and carefully-firewalled military adventurisms later known as Bismarck's *Realpolitik* (literally, the "politics of reality").¹¹⁶

Austria's participation was necessary to forestall any interference by France, while Bismarck calculated, correctly, that the Russian empire was far too preoccupied with carrying out the abolition of serfdom and containing the fallout of the 1863 Polish insurrection to intervene in what seemed to be a minor quarrel among some unimportant German states. At the same time, Bismarck was careful not to antagonize Britain by limiting Austro-Prussian claims solely to Schleswig and Holstein and acknowledging the Danish kingdom's sovereignty over its core territory. After crushing the completely outmatched Danish army, the Gastein Convention of August 14, 1865 handed over Holstein to Austria and Schleswig to Prussia.

Ten months later, Bismarck double-crossed his putative ally by sending Prussian soldiers to seize Holstein on June 10, 1866. Austria responded with the Austro-Prussian war of 1866. Austria's quick and decisive defeat by Moltke's army enabled Bismarck to establish the North German Confederation in 1867, expanding Prussia's population from 19.3 million to almost 30 million (Austria's prewar population was 35.8 million) and catapulting Prussia to the status of a peer competitor with France (population 38 million).¹¹⁷

From a military standpoint, the Austro-Prussian war reprised the death-knell of the Napoleonic mobile column first witnessed on the battlefield in 1863, when the Union army's superior firepower annihilated the Confederacy's mobile columns at Gettysburg:

In 1866, the Austrians, who had experimented unsuccessfully with fire tactics in 1859, reverted to shock tactics, consigning four-fifths of every battalion to massed columns in every situation: plains, hills, villages, and even in deep woods. The tactic, which the Austrians had expected to overawe the Prussians with "moral force" and "shock," proved disastrous. Indeed every battle had followed the same dispiriting pattern: A dense column of Austrians would hurl itself with few preliminaries at a line of rapid-firing Prussian infantry, taking grievous casualties.

lieutenant in the Danish army, and did not become an officer in the Prussian army until the age of 22.

¹¹⁶ The term *Realpolitik* was originally invented by liberal German journalist Ludwig Rochau in 1853, but was refashioned into the decidedly illiberal apologetics for Hohenzollern absolutism by Heinrich Treitsche. See Chapters 3 and 4 in: John Bew. *Realpolitik: A History*. Oxford: Oxford University Press, 2016.

¹¹⁷ "In the weeks after Königgratz, he [Bismarck] abolished the thirty-nine-state German Confederation established in 1815 and annexed most of its northern members: Schleswig, Holstein, Hanover, Hesse-Kassel, Nassau, and Frankfurt-am-Main. He packed the rest of Germany's northern states – Saxony, Hesse-Darmstadt, Mecklenburg, the Thuringian duchies, and the free cities of Hamburg, Lubeck, and Bremen – into a North German Confederation that, with Berlin controlling its foreign and military affairs and most of its internal ones as well, was essentially Prussian territory." Geoffrey Wawro. *The Franco-Prussian War: The German Conquest of France in 1870–1871*. Cambridge: Cambridge University Press, 2003 (14).

In 1866, the Prussians had consistently killed, wounded, or captured five Austrian soldiers for every casualty of their own: 5,000 Austrians killed, wounded, or captured at Trautenau, 5,500 at Vysokov, 6,000 at Skalitz, and 44,000 at Königgratz. “Those were slaughters, not battles,” a Prussian officer observed after the war. Though only about one in every 250 Prussian bullets actually struck a human being and inflicted a wound – faster loading enabled Prussian infantrymen to blaze away recklessly – 1-in-250 was apparently enough, and the ratio in no way diminished the psychological effect of the breech-loader, which few had predicted before the war.¹¹⁸

From a geopolitical standpoint, the Austro-Prussian war reprised most of the key features of the Second Schleswig War. As before, Bismarck cloaked the war in the mantle of standing up for the North German Confederation, employed the advantages of tactical superiority and railroad mobilization to maximum effect, and achieved a dazzling battlefield victory so quickly that Austria had no time to forge an anti-Prussian coalition with Britain, France or Russia. What was new was that Bismarck had consciously taken advantage of Napoleon III’s impending imperial overstretch.¹¹⁹

This latter was the result of the increasing obsolescence of industrial revanchism as a mode of governance in a French core polity experiencing accelerating industrialization and industrial consumerism. After the highwater mark of the 1859 Franco-Austrian War, Bonaparte’s military adventurisms became increasingly unhinged and unprofitable, everywhere from the debacle of the 1862-1867 Mexican intervention to counterproductive double-dealing with Austria and Prussia in 1865-1866 (Napoleon III signed a secret treaty with Austria which, in the event of an Austrian victory against Prussia, would have given Venetia and one of the Rhineland principalities to France, and offered a similar treaty to Bismarck in the event of a Prussian victory, which Bismarck summarily rejected). By 1867, Bonaparte was lobbying for the annexation of Luxembourg and Belgium, antagonizing Britain and ensuring France’s near-total diplomatic isolation prior to the Franco-Prussian War. By 1869, the regime was in the early throes of a terminal legitimization crisis:

One hundred and twenty opposition newspapers sprouted in the months before the May [1869] elections. Attempts to block republican candidates buckled and broke under local opposition. Although most candidates were still officially sanctioned, many mayors and prefects wondered if the regime were not doomed. Concerned about their futures, they looked the other way when moderate republicans put their names down. In the cities, angry crowds placed revolutionary socialists on the ballot. Thus, the voting in the spring of 1869 proved an overwhelming defeat for the Second Empire. Three out of four Parisian

¹¹⁸ Geoffrey Wawro, *The Franco-Prussian War* (51).

¹¹⁹ “Because he [Napoleon III] had expected the big Austrian and Prussian armies to trade blows through the summer, fall, and winter, and into 1867, he had procured no supplies for an 1866 campaign and had left his combat troops scattered across the globe: 63,000 in Algeria, 28,000 in Mexico, 8,000 in Rome, and 2,000 in Indochina. Infantry companies in France had been drawn down to less than half their usual strength, netting Louis-Napoleon scarcely 100,000 war-ready troops after Königgratz. Prussia’s army, flush with victory, was three times larger.” Geoffrey Wawro, *The Franco-Prussian War* (17-18).

voters chose opposition candidates or abstained, which was a sign of revolutionary sentiment. Rioters set fires in the French capital for three days in June and danced around the flames singing the *Marseillaise* – the banned anthem of the republic – and shouting “Vive la Republique!” [Long live the Republic]. Results nationally were nearly as dismal. Government-sponsored candidates lost 1 million votes to opposition liberals and republicans, who increased their seats in the legislative body to 74 of 292. Without ballot-stuffing and gerrymandering, the balance of power would have tipped far more alarmingly to the left. More than half of the ballots cast indicated opposition to Louis-Napoleon’s government.¹²⁰

In desperation, Bonaparte launched his final adventurist war, only to be defeated by the unique and unrepeatable constellation of Moltke’s superior officer corps, Prussia’s superior railroad logistics, Krupp’s superior artillery¹²¹ and Bismarck’s superior diplomacy. Bonaparte’s two decades of adventurism had alienated the other European states who might have joined an anti-Prussian coalition, a catastrophic diplomatic failure Wawro ascribes to the minister of foreign affairs just prior to the outbreak of the war, Antoine Alfred Agénor, the Duke of Gramont:

Gramont assumed that Austria-Hungary and Denmark would join France in a “revenge war” against Prussia. The Austrians, he reasoned, would want to “erase the memories of 1866,” and the Danes would want to retake Schleswig which they had lost to the Prussians in 1864. He assumed that the Italians would ally with France to show their gratitude for France’s military support against Austria at Magenta and Solferino in 1859 (and that the Austrians would permit an Italian army to march through their territory to reach Germany). He assumed that the Russians would remain neutral in the war to prevent – or at least not facilitate – the creation of a mighty German state. Such assumptions, if brought to life by French diplomacy, would have been the basis of sturdy French alliances, but Gramont, a languid aristocrat, never nailed them down. Instead, he merely presumed that the Austrians and Danes would spontaneously join a Franco-Prussian war, that Italy would come along sooner or later, and that Russia would not budge.¹²²

Gramont’s languor was a ruse of Bonapartist reason. The industrial revanchism which had eked out cosmetic victories during the first decade of Bonaparte’s rule was destined to fail during the second decade at the hands of its historical negation – a.k.a. an increasingly restive and proletarianized French populace on the one hand, and increasingly industrialized rival

¹²⁰ Geoffrey Wawro, *The Franco-Prussian War* (27).

¹²¹ “With superior rifling, breech-loading mechanisms and percussion detonated shells, the Krupp guns had three times the accuracy, twice the rate of fire, a third greater range, and many times the destructiveness of the French guns, which had to be loaded at the muzzle and charged with an unreliable time-fused shell that could burst in just two possible zones, a short one, 1,300 yards, or a long one, 2,500 yards, sparing all who found themselves in the broad gap between the zones. In a word, the French guns, though they had performed brilliantly in 1859, were thoroughly outclassed by 1870.” Geoffrey Wawro, *The Franco-Prussian War* (58).

¹²² Geoffrey Wawro, *The Franco-Prussian War* (36).

empires bent on constructing their own national imperial capitalisms on the other.¹²³ Bonaparte's petty adventurism masquerading as Napoleonic grandeur collapsed almost immediately on contact with Moltke's war of railroads and Bismarck's war of telegrams. In Michael Howard's words:

Indeed the few hours' fighting round Wissembourg showed in miniature all the characteristics of the great battles which were during the course of the next few weeks to destroy Imperial France: the initial advantage of overwhelming numbers; the broad deployment which made tactics of envelopment almost automatic; the startling effectiveness of rifle-fire in checking mass assaults; and the ultimate reliance of the German infantry on their gunners to nullify the chassepots [rifles] of the defense.¹²⁴

The debacle of Wissembourg was repeated on an even greater scale at Metz, where Bazaine's catastrophic immobility enabled in the encirclement of the entire French Army of the Rhine by Prussia's far more mobile forces:

Thus the entire French army, over 160,000 men strong with all its guns, its pontoon bridges, its horses and its four thousand supply wagons, swollen by the vehicles of the civilians escaping from Metz, was directed in one huge, ill-policed convoy along a single route – the steep road which wound up the escarpment above the Moselle by the Rozerieulles heights to the plateau of Gravelotte. Only at Gravelotte did the road divide in two. The town of Metz itself was a grave enough obstacle to the passage of the army, as the weary French troops found when they piled up for hours in its narrow streets during the night after the battle. To impose a further delay by forcing the whole mass through so narrow a funnel was to make quite certain that the widely spread and swiftly moving Germans would reach the Meuse long before the French.¹²⁵

This pattern of catastrophic immobility at the empire's political center and the logistical breakdown of its armies culminated in Napoleon III's disastrous foray at Sedan. In just two days, a total of 18,031 French soldiers were killed or wounded and 104,000 captured. By contrast, Prussia lost only 9,806 wounded, killed or missing in the battle. With Bonaparte and his army captured, Bazaine's army interned, and Prussian soldiers besieging Paris, France's military position was henceforth hopeless.

¹²³ "In 1863, the emperor [Bonaparte] had tried and failed to reconstitute an independent Poland. In 1866, he had failed to wrest territory from the Prussians after Königgratz. In 1867, he had failed to annex Belgium and Luxembourg, and military reverses half a world away had forced him to pull French troops out of Mexico, where he had squandered 360 million francs (\$1.1 billion) trying to establish a French satellite state in Central America." Geoffrey Wawro, *The Franco-Prussian War* (26).

¹²⁴ Michael Howard. *The Franco-Prussian War: The German Invasion of France, 1870-1871*. London: Routledge, 1961 (81).

¹²⁵ Michael Howard, *The Franco-Prussian War* (114).

Yet it was precisely Prussia's moment of supreme triumph, the inexorable completion of the four semi-peripheral consolidations of 1859-1871, that triggered an equally inexorable and quintessentially dialectical recoil. This recoil was the structural entanglement of the Italian, Japanese, South American and German semi-peripheries in the increasingly explosive and intractable contradictions of the British world-system, entanglements which would inexorably transform the restabilizing imperial national consolidations of 1859-1871 into destabilizing national imperialisms.

In post-Meiji Japan, this recoil began as early as 1873 with the so-called "seikanron" debate over whether or not to send a punitive maritime force to Korea. While the authorities refrained from doing so, the authorities sent the Douglas Mission (1873-1879) to Britain to learn how to build and operate a modern navy, the crucial first step in Japan's later drive to construct a Pacific maritime empire. In Italy, the recoil began when France colonized Tunisia in 1879, a territory Italians considered to be in their sphere of influence. This led to the signing of the 1882 Triple Alliance between the monarchies of Austria, Germany and Italy, and efforts to construct an African empire, beginning with Italy's colonization of part of Eritrea in 1886.

Germany's recoil did not begin with its 1871 annexation of the province of Alsace-Lorraine, about which more in just a moment, but with the infamous 1884-1885 Berlin Conference which carved up Africa among the Belgium, British, French, German, Italian, Portuguese and Spanish empires. The slowest recoil occurred in Brazil, where the long-term consequences of the War of the Triple Alliance triggered the abolition of wageless labor in 1888, the toppling of the monarchy in 1890, and the establishment of a republic in 1891.

What distinguished the German consolidation from its three analogues was the fact that Prussia's wartime opponent, France, was not a semi-peripheral empire like Austria or a semi-peripheral polity like Paraguay. France was one of the five core polities of the capitalist world-system, with the second largest colonial empire and the second most powerful navy on the planet.

Nowhere was this core status more apparent than in France's response to Prussia's initial military gains. The French polity neither capitulated or disintegrated, but launched two overlapping projects of revolutionary state-building – one national-republican and the other Parisian-proletarian in nature. Counterintuitive though it may sound, the Franco-Prussian War was really three separate wars in one.

The first of these wars was the forty-five day conflict between Napoleon III's Second Empire and the Prussian alliance. The second was the ensuing five-month conflict between France's Third Republic and Bismarck. The third was the one-week conflict between the French royalists (Legitimists plus Orleanists) and the Communards.

Only the first of these conflicts was a decisive Prussian military and political victory. The Second Empire collapsed, and the German-speaking states united to create a semi-peripheral dynastic empire. The price of this victory was heightened imperial competition, as the last of the buffer states created by the 1815 settlement were absorbed into larger empires. As Schroeder observed, the Austrian empire lost its status as an independent great power and was reduced to a de facto German ally. Italy promptly swallowed up Rome and the Papal States on September 20, 1870, completing Italy's unification. Shortly thereafter, the Russian empire repudiated the restrictions on its Black Sea navy mandated by the 1856 Treaty of Paris on October 29, 1870, the

first step towards Russia's later Balkans adventurism.

By contrast, the second war of 1870-1871 was a grinding, five-month war of attrition between the capture of Napoleon III at Sedan and the armistice of January 26, 1871. Despite losing its pre-war army and the industrial output of Paris, France remained a core polity with the military resources of the world's second-largest navy, the economic resources of a vast maritime empire, and the demographic reserves of a majority rural population, two-thirds of which remained unoccupied by the Prussian alliance.

Thanks to these resources, Prussia could win almost every battle of the war but still lose its long-term geopolitical competition with France. Simply, Moltke's military and logistical reforms could not furnish the long-term financial resources necessary to sustain the indefinite deployment of hundreds of thousands of soldiers across one-third of France. The enormous financial costs of the war triggered severe political infighting within the still-shaky Prussian alliance, and were instrumental in Bismarck's decision to impose an 5 billion franc indemnity on France as well as to annex the border region of Alsace-Lorraine.

Both decisions were testament to the fundamentally uncompetitive nature of Germany's semi-peripheral empire vis-a-vis the empires of its five core competitors. The scale of the indemnity – about one-fifth of France's prewar GDP – was meant to pay for the vast expenditures of the war, while bankrupting the French economy for decades to come. It achieved the former, but abysmally failed at the latter. France not only paid off the indemnity in record time, but responded with a program of crash military reform, significant state intervention in the economy and accelerated colonial expansionism abroad.

Whereas the Union states paid for the US Civil War by issuing sovereign greenbacks during 1862-1865, Germany's unification was literally paid for in sovereign French francs issued on London's money markets during 1872-1873. After extinguishing its war debts with France's payments, Germany's financial system experienced a speculative bubble due to its inability to properly utilize the excess funds. This was the genesis of the so-called *Gründerzeit* or "founders' era" of 1871-1873, which ended in the disastrous financial and economic crash of 1873.

The financial cost of war was also crucial to the decision to annex Alsace-Lorraine. While there was some linguistic justification for the annexation – most of the 1.6 million inhabitants of the border region spoke Germanic dialects – the real reason was military utility. Alsace-Lorraine's hilly terrain was highly defensible, and many of the German polities in the Prussian alliance felt that territorial expansion was a lower-cost option than maintaining an enlarged future army along the pre-1871 border.

This annexation locked the German empire into permanent semi-peripheral status for three reasons. First, the region had been a part of France since the 17th and 18th centuries, which meant its loss was perceived as a fundamental infringement of France's well-developed sense of national identity. Since 1815, no polity has ever ascended from the semi-periphery to the core without the fullest economic integration, political cooperation and cultural networking with existing core polities, something as true of Belgium in 1830 and the US in 1862 as it was of Australia, Canada, Japan, New Zealand and the members of the European Union in the mid-1980s, all the way to the EU accession members of 2004-2013.

Second, whereas the transfer of Nice and Savoy left both Italy and France with defensible borders, the loss of Alsace-Lorraine meant that the entire German army was now literally on the

doorstep of France's heartland. This existential danger compelled the Third Republic to fundamentally reorient French foreign policy away from European territorial aggrandizement, and towards defensive alliances designed to contain Germany over the short term and facilitate the reclamation of Alsace-Lorraine over the long term. It also motivated France to invest heavily in its navy and expand its maritime colonial empire in West Africa, Southeast Asia and the Pacific.

This danger was the genesis of France's slow but inexorable post-1871 rapprochement with Belgium, Britain, the Netherlands and Russia. All four empires had been thoroughly alienated by Napoleon III's adventurism, but understood the geopolitical necessity of uniting to counterbalance a newly-enlarged German empire.¹²⁶

Third, the semi-peripheral German empire lacked the capacity to effectively administer territories previously ruled by core polities. Alsace-Lorraine's textile and tobacco industries, among the largest and most productive in Europe, fell victim to French tariffs and to regional trade barriers inside Germany. The region ended up as a supplier of iron ore and potash to the Ruhr, i.e. a glorified raw materials neocolony rather than a showpiece of successful empire-building.¹²⁷

The third and briefest war of 1870-1871, namely the crushing of the Paris Commune, was the most paradoxical of them all. The royalists had dominated the emergency national parliamentary elections of February 8, 1871, winning 62% of all seats as compared to 34.9% for the Republicans. After the Paris Commune erupted on March 18, 1871, the royalists spent two months organizing an army with the full cooperation of the Prussian occupation and then proceeded to crush the Commune's tiny, poorly-armed militia in a week.

Yet just five years later, the royalists would lose France forever. The Republicans won an epochal victory in the 1876 parliamentary elections, consigning the royalists to marginality and political extinction. At the same time, the cultural and political innovations of the Commune would decisively transform France and indeed the rest of the world for generations to come.

We will analyze the remarkable achievements and severe weaknesses of the Paris Commune more closely in Chapter 7. For now, however, the time has come to rethink the abolitions of wageless labor, the rise of the US to core status, and the four imperial

¹²⁶ Marx was the first to foresee this: "Anyone who has not been entirely overawed by the din and noise of the moment and has no *interest* in overawing the German people must realize that the War of 1870 will necessarily lead to a *war between Germany and Russia* just as the War of 1866 led to the War of 1870." Karl Marx and Friedrich Engels, Letter to the Brunswick Committee of the Social-Democratic Workers' Party of Germany, September 1, 1870.

https://www.marxists.org/archive/marx/works/1870/letters/70_09_01a.htm. Their address on the following day was even more specific: "If the fortune of her arms, the arrogance of success, and dynastic intrigue lead Germany to a dismemberment of French territory, there will then only remain two courses open to her. She must at all risks become the *avowed* tool of Russian aggrandizement, or, after some short respite, make again ready for another 'defensive' war, not one of those new-fangled 'localized' wars, but a *war of races* – a war with the Slavonic and Roman races." Karl Marx and Friedrich Engels, Address, September 2, 1870. <https://www.marxists.org/archive/marx/works/1871/civil-war-france/ch02.htm#D>.

¹²⁷ Dan P. Silverman (1971). "The Economic Consequences of Annexation: Alsace-Lorraine and Imperial Germany, 1871-1918." *Central European History* 4:1 (34-53).

consolidations of the semi-periphery in the context of a single economic, political and cultural framework.

Chapter 5

Despotic Industrialisms, National Imperialisms, Industrial Modernisms

When history became a rail junction, all historical clocks began to turn into railway time-tables, all politics into train tickets, and all forms of culture into passenger luggage. None of these transformations were seamless, stabilizing or linear. All were self-contradictory, disruptive and asynchronous to their core. None resolved the economic, political and cultural antagonisms of Global Cotton, but instead expanded their scale and intensified their ferocity. This expansion and intensification ushered in three titanic transformations, namely the reconversion of the industrial despotisms, imperial nationalisms, and industrial realisms of Global Cotton (1815-1860) into the despotic industrialisms, national imperialisms, and industrial modernisms of Global Steam (1860-1914), respectively.

Global Cotton's industrial despotisms had been characterized by inherently genocidal systems of wageless labor and highly coercive systems of partly and fully waged labor. By contrast, Global Steam's despotic industrialisms were systems of partly and fully waged labor which were only partly coercive and intermittently genocidal. These despotic industrialisms expanded the share of wage employment from approximately one-quarter of humanity in 1860 to about thirty percent by 1914. This proletarianization of a planet of subsistence farmers went hand in hand with the takeoff of world urbanization (the share of total population living in urban centers rose from 7.3% in 1800 to 16.4% in 1900)¹²⁸ and the permanent decline of agricultural employment in the most industrialized regions of the world empires:

¹²⁸ Our World In Data (OWID). "Urbanization over the past 500 years, 1500 to 2016." <https://ourworldindata.org/grapher/urbanization-last-500-years>. OWID's estimate is collated from the UN World Urbanization Prospects 2018 and the US Census Bureau.

Figure 8. Agricultural employment as a percent of total employment 1870-1910.¹²⁹

Year	Austrian region of Austrian empire	Hungarian region of Austrian empire)	Britain	France	Germany	US	Russia
1870	65% (1869)	70%	15%	45% (1866)	49%	50%	N/a
1910	57%	64%	9% (1911)	41% (1911)	36%	31%	59% (1897)

This deruralization was the beginning of a planetary transformation which would take a century to complete. The world share of agricultural employment fell from approximately 50% in 1970 to 34.1% in 2008, comparable to the figure for Germany and the US in 1910.¹³⁰

Whereas British industrial despotism was the primary model for the lesser industrial despotisms of Global Cotton, the despotic industrialisms of Global Steam had two main models – the British maritime version and the US land-based version. While the British version was the far more powerful and influential of the two, the US version began to exert significant influence during the final two decades of Global Steam.¹³¹

British despotic industrialism transmuted the surplus extracted from household servants, indebted sharecroppers, subsistence farmers, female household workers, plantation workers, agricultural laborers, miners, railroad and steamship workers, and retail staff into the financial speculations of the London market, and thence into a flood of foreign direct investment denominated in the gold-backed currency of the British pound sterling.¹³²

In terms of ownership, Britain accounted for approximately two-thirds of the global stock of foreign direct investment in 1913, the other core polities of Belgium, France, the Netherlands and the US for about a quarter, and semi-peripheral Germany for about 5%-8%. The

¹²⁹ Michael Mann. *The Sources of Social Power, Volume 2: The Rise of Classes and Nation-states 1760-1914*. Cambridge: Cambridge University Press, 1993 (693).

¹³⁰ World Bank. "Employment in agriculture (% of total employment)."

<https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS>.

¹³¹ For example, British Canada copied the US 1862 Homestead Act in the form of the Canadian Dominion Lands Act of 1872. Jessica Evans. "Chapter 8: Rejecting the 'Staples' Thesis and Recentering Migration: A Comparative Analysis of 'Late Development' in Canada and Argentina." In: *Historical Sociology and World History: Uneven and Combined Development over the Longue Duree*. London: Rowman & Littlefield, 2016. Edited by Alexander Anievas and Kamran Matin.

¹³² "London was the major geographical center of an international capital market that drew on resources from the whole of Western capitalism, from the money markets of the United States on the western seaboard of the North Atlantic to Berlin in east-central Europe." P.L. Cottrell. "Chapter 1: Great Britain." In: *International Banking 1870-1914*. Edited by Rondo Cameron and V.I. Bovykin. Oxford: Oxford University Press, 1990 (30-31).

accumulated stock of British foreign direct investment may have been as high as 3.715 billion pound sterling in 1913, although D.C.M. Platt has made a convincing argument that the true total was somewhere around 2.6 billion.¹³³

The most credible historical estimates of the geography of British investment suggest 25.1% was deployed in Britain's settler-colonial offshoots of Australia, Canada and New Zealand, 20.4% in the independent polities of Central and South America, 20.3% in the United States, 12.2% in colonial Africa, 10.2% in colonial South Asia, 2.9% in continental Europe, 1.8% in Russia, 1.7% in Japan and 1.2% in China. About half of all British foreign direct investment was deployed inside the British empire, and half outside.¹³⁴

Significantly, only one-fifth of the total was invested in other core polities (primarily in the US). Slightly more than half was invested in semi-peripheral empires and polities, and about one-quarter in the peripheries. Put another way, almost all of Britain's investments in core polities were directed to the US, whereas almost all of its investments in the periphery were directed to its African and Asian colonies.

Comparatively little of this investment financed local factories or manufacturing. The single largest share of British investment – 40.9% or two-fifths of the total – was devoted to railroad infrastructure, i.e. infrastructural speculations on the extraction of rents from colonies and neocolonies alike. The railway boom of Global Steam was most pronounced in the five core polities, especially the United States:

¹³³ D.C.M. Platt, *British Investment Overseas on the Eve of the First World War: The Use and Abuse of Numbers*. New York: Palgrave Macmillan, 1986 (59).

¹³⁴ William N. Goetzmann and Andrey D. Ukhov (2005). "British investment overseas 1870-1913: A modern portfolio theory approach (Working Paper No. 11266)." Cambridge, MA: National Bureau of Economic Research.

Figure 9. Total kilometers of railways constructed in the five core polities of Global Steam, imperial metropolises only.¹³⁵

Year	Belgium	Britain	France	Netherlands	US
1860	1,729	14,603	9,167	335	49,288
1870	2,897	19,837	15,544	1,419	85,170
1880	4,112	25,060	23,089	1,841	150,091
1890	4,526	27,827	33,280	2,610	268,282
1900	4,562	30,079	38,109	2,771	311,160
1910	4,679	32,184	40,484	3,190	386,714

There was also significant railway construction in the empires and polities of the semi-periphery, and more selective construction in the colonial peripheries:

¹³⁵ B.R. Mitchell. *International Statistics*, 2005.

Figure 10. Total kilometers of railways in all semi-peripheral polities of Global Steam, imperial metropolises only.¹³⁶

Year	Austrian empire	Germany	Italy	British offshoots	Japan	Ottoman empire	Russian empire	Other European semi-peripheries	Central and South America
1860	2,927	11,089	2,404	3,323	0	0	1,626	3,711	1,402
1870	6,112	18,876	6,429	5,740	0	180	10,731	10,457	3,496
1880	11,429	33,838	9,290	18,762	0	1,542	22,865	19,735	11,099
1890	15,273	42,869	13,629	39,639	0	2,086	30,596	27,620	38,428
1900	19,229	51,678	16,429	53,469	6,300	4,543	53,234	36,440	60,808
1910	22,642	61,209	18,090	72,338	8,661	6,558	66,581	43,428	90,707

Figure 11. Total kilometers of railways in the global periphery of Global Steam.¹³⁷

Year	Belgian, British, French Africa	Ethiopia	British India	Dutch Indonesia	French Indochina	Iran	Japanese Korea and Taiwan	Thailand	Qing China
1860	0	0	1,349	0	0	0	0	0	0
1870	1,449	0	7,678	99	0	0	0	0	0
1880	4,440	0	14,478	385	0	0	0	0	0
1890	8,479	0	26,400	1,593	71	9	0	0	0
1900	15,976	0	39,834	3,574	182	9	97	125	1,516
1910	23,908	310	51,658	5,145	1717	9	1,467	896	8,601

¹³⁶ Central and South America include all of the polities of the Americas except Canada and the US, the British offshoots include Australia, Canada and New Zealand, while all other European semi-peripheries include Denmark, Greece, Norway, Portugal, Spain, Sweden and Switzerland. B.R. Mitchell, *International Statistics*.

¹³⁷ B.R. Mitchell, *International Statistics*.

In summary, the railway system of the planet increased nearly tenfold between 1860 to 1910, from 102,593 kilometers to 951,176 kilometers. Of this latter, half (49%) was located in the five core polities, two-fifths (41%) in the polities of the semi-periphery, and a tenth (10%) in the colonial and neocolonial periphery.

The United States alone accounted for two-fifths of the planet's railways, whereas the British empire controlled about one-fifth. The total rail system of the British offshoots was slightly larger than Germany's entire network, while the total railways of the Central and South American polities were about a third larger than that of the Russian empire.

While the US led the world in terms of the sheer volume of rail expansion, total passenger growth showed a less polarized pattern of development, with significant increases in mass mobility across the planet:

Figure 12. Total annual passengers in millions (imperial metropolises for Britain, Germany, Japan and US), 1860-1910.¹³⁸

Year	Britain	Germany	British India	Dutch Indonesia	Japan	Russian empire	US
1860	153.5	n/a	3.9	0	0	n/a	n/a
1870	322.2	n/a	18.2	0.2	0	21 (1871)	n/a
1880	596.6	n/a	48.0	2.5	5.3	37 (1882)	289 (1882)
1890	796.3	377	114	15.5	25.8	44	520
1900	1,114.6	805	176	38	111	104	577
1910	1,276.0	1,541	372	72	180	195	972

It should be noted that while the US rail system grew to be twice as large as that of the British empire, Britain retained its maritime and naval supremacy. "In the sixty years from 1850 to 1910 the world's merchant fleets grew from 9 to almost 35 million registered tons, a fourfold increase," noted Daniel Headrick. "Britain's share remained remarkably constant throughout that period, from 40 to 50 percent of the world total."¹³⁹

That merchant fleet was crucial to one of the most important but overlooked linchpins of Britain's economic hegemony, namely its planetary network of merchant houses. "In the late 1840s there were about 1,500 British mercantile houses overseas," observed P.L. Cottrell, "compared with 150 American and 500 French, with about half the latter located in the

¹³⁸ There is no reliable passenger data on China prior to 1947. B.R. Mitchell, *International Statistics*.

¹³⁹ Daniel R. Headrick. *The Tentacles of Progress: Technology Transfer in the Age of Imperialism, 1850-1940*. London: Oxford University Press, 1988 (22).

Mediterranean and the Levant.”¹⁴⁰ Britain’s variation of despotic industrialism transformed these mercantile houses into the imperial chartered concessions of the 1880s and 1890s:

From the 1880s a significant proportion of British overseas direct investment was undertaken to obtain raw materials required by the growth of the industrial economies of Western Europe and the United States. Chartered companies provided the "shells" for such activity, much of which was unsavory, as were the parallel activities of concession hunters. They operated in economically and politically weak nations, such as the Latin American republics, China, Persia, and the Ottoman Empire. Often these carpetbagging activities were undertaken by individuals out to make a fortune, like those who had gone to India a century and a half before: "simply an Englishman of the old school who believed in taking anything that was worth taking, and troubled his head about it no further." They preyed on financially embarrassed governments by advancing substantial sums of money, sometimes subsequently funded by publicly issued loans, to secure fiscal and other state monopoly rights ranging from petrol to matches. At the beginning of the twentieth century the proliferation of patented technology provided other opportunities, especially in the area of wireless, postal, and telegraphic enterprises. The resulting concessionary companies, which often arose out of deals struck by free-booting Western entrepreneurs with local rapacious and unstable power groups, in the cases of German and Portuguese as well as British-based enterprises, were often international in terms of ownership, control, and sphere of operations.¹⁴¹

The railroad and steamship booms were powered, literally and figuratively, by a boom in coal production. While Britain dominated the coal industry between 1820 and 1879, Germany became a major producer during the 1890s, while the US became the single largest producer in the world after 1900:

¹⁴⁰ P.L. Cottrell, *International Banking 1870-1914* (29).

¹⁴¹ P.L. Cottrell. "Chapter 1: Great Britain." In: *International Banking 1870-1914*. Edited by Rondo Cameron and V.I. Bovykin. Oxford: Oxford University Press, 1990 (30).

Figure 13. Largest coal producers in thousands of metric tons, decennial or period averages 1820-1913.¹⁴²

Period	Belgium	Britain	France	Germany	Russia	US
1820-1829	---	20.00	1.30	1.40	---	---
1830-1839	2.75	25.45	2.45	2.45	---	1.50
1840-1849	4.60	40.40	3.95	5.25	---	4.22
1850-1859	7.70	59.00	6.45	11.95	---	13.22
1860-1869	11.35	95.50	11.35	25.90	0.45	23.78
1870-1879	14.70	129.45	16.20	45.65	1.60	49.69
1880-1889	17.95	163.40	20.85	71.90	4.35	103.94
1890-1899	20.70	194.15	28.45	107.05	9.05	174.52
1900-1909	24.05	245.30	34.70	179.25	20.50	340.13
1910-1913	24.80	275.40	39.90	247.50	30.20	511.53

US production skyrocketed from 25% of the British figure in the 1860s to 90% by the 1890s, and was almost double the latter in the early 1910s. To be sure, in terms of coal production per capita, the US figure was still only 91% of the British figure by 1910, that of Germany was 63%, that of Belgium was 55%, that of France was 16% and that of Russia 3%.

That said, productivity rose much faster in the US industry than in Britain. Coal employment in Britain was 276,000 in 1861, five times larger than the 50,000 employed in the United States in 1860, and US production per worker was only four-fifths that of the British figure. By 1910, British coal employment was 1,049,400 while the comparable US figure was 725,000, which meant US productivity per worker was now 2.7 times higher than Britain.¹⁴³

The iron and steel industries followed a similar pattern of early British dominance, followed by American and German catchup. In the 1860s, Britain produced four times as much

¹⁴² Note 1 metric ton = 1000 kg = 2,204.6 lbs, and 1 US ton = 0.91 metric tons. Data for France, Germany, Russia, Britain from: B.R. Mitchell and P. Deane. *Abstract of British Historical Statistics*. Cambridge: Cambridge University Press, 1962 (8-10), and from: Carlo Cipolla, editor. *Fontana Economic History of Europe* 4:2 (747-748). US data from: Vera F. Eliasberg. "Some Aspects of Development in the Coal Mining Industry, 1839-1918." In: *Output, Employment, and Productivity in the United States after 1800*. Edited by Dorothy S. Brady. NBER, 1966 (410). Volume: <http://www.nber.org/books/brad66-1>, chapter: <http://www.nber.org/chapters/c1573>.

¹⁴³ Data for Britain from B.R. Mitchell, *British Historical Statistics*. Cambridge: Cambridge University Press, 1988 (252-253). Data for the US from Vera F. Eliasberg. "Some Aspects of Development in the Coal Mining Industry, 1839-1918". US Government, National Bureau of Economic Research, 1966. <http://www.nber.org/chapters/c1573>.

iron as France, six times as much as Germany and fifteen times as much as Russia. However, by 1910-1913 Britain produced only two-thirds as much as Germany, twice as much as France and three times as much as Russia. During the 1880s, Britain produced twice as much steel as Germany, five times as much as France and ten times as much as Russia. By 1910-1913, Britain produced only 43% as much steel as Germany, 1.7 times as much as Russia and 1.7 times as much as France.¹⁴⁴ All of the European producers were completely outshadowed, however, by the post-1890 rise of the United States to the world's steel champion. As early as 1890, the US produced 4.2 million long tons of steel, versus 3.6 million for Britain. In 1910, the US produced an astonishing 26.1 million long tons, as compared to only 6.4 million long tons in Britain.¹⁴⁵

The successful examples of British and later American despotic industrialism led other empires and polities to adopt their own variants of such. The most powerful of these empires created their own indigenous credit markets and adopted the gold standard (essentially, a currency peg to the pound sterling), whereas the weaker ones were compelled to rely on silver. Thus the Austrian empire adopted the gold standard in 1867, the empires of Belgium, France, Germany and the Netherlands in 1873, and the empires of Japan and Russia in 1897.

Meanwhile, the Italian, Ottoman, Portuguese, Spanish and Qing empires and most of the Central and South American polities retained silver-based currencies. Somewhat counterintuitively, the US did not officially adopt the gold standard until 1879, i.e. the moment when the US economy had already surpassed the British economy in absolute size, although not yet absolute wealth.

One of the reasons for this delay was that the US version of despotic industrialism was based on high tariffs on imports, combined with the accelerated settler-colonization of its westernmost and Pacific territories. These tariffs averaged 20%-30% of the value of all imports prior to 1860, 30% during the 1870s and 1880s, and 25% thereafter.¹⁴⁶ Secure behind its tariff wall, US despotic industrialism constructed railroads on a continental scale and dramatically expanded fully waged agribusiness. US political elites followed up on the Homestead Act of 1862 with significant public investment in scientific research, education, and agricultural extension projects. In essence, the US built an agrarian-industrial complex where Britain built a financial-mercantile trading complex:

The activities of the Patent Office and the privately sponsored U.S. Agricultural Society in the 1850s culminated in 1862 in the establishment of the U.S. Department of Agriculture and provision of federal

¹⁴⁴ B.R. Mitchell and P. Deane, *Abstract of British Historical Statistics*. Carlo Cipolla, editor. *Fontana Economic History of Europe* 4:2.

¹⁴⁵ Federal Reserve Bank of St. Louis. <https://fred.stlouisfed.org/series/A013BAGBA576NNBR>.
<https://fred.stlouisfed.org/series/A01208USA576NNBR>.

¹⁴⁶ US International Trade Commission. "A Centennial History of the USITC." *USITC Publication 4744*, November 2017 (37). For data between 1790-1836, the report credits Douglas A. Irwin, "New Estimates of the Average Tariff of the United States, 1790-1820," *Journal of Economic History* 63 (June 2003): 506-513; for 1837-1890, Census Bureau, *Historical Statistics of the United States: Colonial Times to 1970*, GPO, 1975, Series U 207-212 table; for 1891-1930, tables available from Interactive Tariff and Trade Dataweb, U.S. International Trade Commission, 2017.

grants for colleges devoted to the agricultural and mechanical arts. These state agricultural colleges educated the next generation of farmers' sons, and sponsored laboratory research, sometimes of a rather 'pure' and academic character. In the USDA, research bureaus had proliferated by 1900 to most branches of agricultural science. In 1887 agricultural experiment stations on the German model were added. Like the colleges, these stations were set up, one in each state, with federal funds and the expectation that state governments would provide physical facilities and supplemental funding.

With the Act of 1914 establishing the Extension Service, with agents in every county, the formal structure of agricultural research and development was complete.¹⁴⁷

Over time, other empires and independent polities began to copy the American strategy of trade protectionism and agro-industrial capitalism. While the European economies did experience some degree of increased trade interdependence during the British long peace,¹⁴⁸ this integration was counterbalanced by increased tariffs on imports.

Kevin O'Rourke has calculated that whereas Britain's average tariffs fell from 5.3% in 1875-1879 to 4.8% in 1904-1910, French tariffs rose from 5.2% to 8.9% of all imports, German tariffs from 3.7% to 7.0%, and Italian tariffs from 7.9% to 11.7% during the same period,¹⁴⁹ while Robert C. Allen estimated that Russian tariffs rose significantly between the 1880s and 1914.¹⁵⁰ Michael A. Clemens and Jeffrey G. Williamson have shown tariffs averaged 20%-40% of all imports in Central and South America between 1870 to 1913, Japan's tariffs rose from 6.2% in 1870-1899 to 7.7% in 1900-1913, while those of the Ottoman empire rose from 7.4% to 9.5% during the same period. By contrast, the corresponding tariff averages for colonized India were 3.4% and 4.7%, for colonized Indonesia 4.9% and 5.2%, and for neocolonized China 3.2% and 3.3%.¹⁵¹

What most empires and polities lacked, on the other hand, was the essential input of vast quantities of arable and thinly-populated land necessary for the American model to work. Only

¹⁴⁷ Jeremy Atack, Fred Bateman, and William N. Parker. "Chapter 6: The Farm, the Farmer and the Market." In: *The Cambridge Economic History of the United States, Volume 2: The Long Nineteenth Century*. Edited by Stanley L. Engerman and Robert E. Gallman. Cambridge: Cambridge University Press, 2008 (273).

¹⁴⁸ Michael Huberman and Wayne Lewchuk have calculated that imports plus exports for sixteen European polities (two of which were Finland and Russia) rose from 31% of GDP in 1870 to 37% of GDP in 1913. Michael Huberman and Wayne Lewchuk (2003). "European economic integration and the labour compact, 1850-1913." *European Review of Economic History* 7 (7) .

¹⁴⁹ Kevin H. O'Rourke (2000). "Tariffs and Growth in the Late Nineteenth Century." *Economic Journal* 110 (461). <https://www.tcd.ie/Economics/staff/orourke/offprints/EJ2000%20printed%20paper.pdf>

¹⁵⁰ "Russia promoted cotton more aggressively than steel or engineering. Tariffs on most industrial goods were high from the 1880s to the First World War, and Russian prices exceeded world prices by a premium that remained stable for most goods." Robert C. Allen. *Farm to Factory: A Reinterpretation of the Soviet Industrial Revolution*. Princeton: Princeton University Press, 2003 (31).

¹⁵¹ Michael A. Clemens and Jeffrey G. Williamson (2002). "Closed Jaguar, Open Dragon: Comparing Tariffs in Latin America and Asia Before World War II." *NBER Working Paper 9401* (25). <http://www.nber.org/papers/w940>

Argentina, Australia and Canada could match the accelerated territorial expansion of the United States after 1860, a.k.a. the accession of Kansas as a US state in 1861, West Virginia in 1863, Nevada in 1864, and Nebraska in 1867, the purchase of Alaska as a territory from the Russian empire in 1867, the state accessions of Colorado in 1876, of Montana, North Dakota, South Dakota and Washington in 1889, of Idaho and Wyoming in 1890, and of Utah in 1896, the annexation of Hawaii as a territory in 1898, the state accession of Oklahoma in 1907, and the state accessions of Arizona and New Mexico in 1912.¹⁵² Whereas it took one hundred and sixty-eight years to create the thirteen British American colonies, and eighty-five years to create the antebellum America of thirty states, it took only fifty-two years for the United States to complete the process of continental expansion.

The basic rhythm of American despotic industrialism was set by three vast railroad booms and three equally vast financial crises. The first boom doubled the size of the US railroad system from 35,000 miles of track in 1865 to 70,000 miles by 1873.¹⁵³ This expansion ended in the worldwide panic of 1873, a six-year depression and the political demise of the 1865-1877 Reconstruction.

A second boom between 1879 and 1883 generated an additional 39,553 miles of track, before ending in a crash and a three-year depression. The third and final boom generated 46,818 miles of track between 1886 and 1892, before ending in the crash of 1893, a four-year depression and the radical upsurge of the 1892-1896 Populist movement.¹⁵⁴

Thanks to these three booms, railroads eclipsed steamboats as a means of transportation. Steamboats transported an annual average of 1.01 million tons of cargo in 1868-1869, and reached their all-time high at 1.39 million tons per annum between 1884 and 1889.¹⁵⁵ Yet railroads already transported 39.3 million tons of cargo in 1882, a figure which rose to 79.2 million tons by 1890.¹⁵⁶ The world of Mississippi steamboats evoked by Twain's *Tom Sawyer* (1876) and *Huckleberry Finn* (1884) did not symbolize triumphant modernity, but rather irreparable nostalgia for a vanished frontier.

The railroad boom was, in turn, a key driver of the steel industry. Steel production in the US skyrocketed from 77,000 tons in 1870 to 1.4 million tons in 1880, 4 million tons in 1890,

¹⁵² State accession for Alaska and Hawaii would not occur until 1959.

¹⁵³ Richard Sylla. "Chapter 12: Experimental Federalism: The Economics of American Government, 1789-1914." In: *The Cambridge Economic History of the United States, Volume 2: The Long Nineteenth Century*. Edited by Stanley L. Engerman and Robert E. Gallman. Cambridge: Cambridge University Press, 2008 (525).

¹⁵⁴ Albert Fishlow, *The Cambridge Economic History of the United States, Volume 2: The Long Nineteenth Century* (584).

¹⁵⁵ Albert Fishlow. "Chapter 13: Internal Transportation in the Nineteenth and Early Twentieth Centuries." In: *The Cambridge Economic History of the United States, Volume 2: The Long Nineteenth Century*. Edited by Stanley L. Engerman and Robert E. Gallman. Cambridge: Cambridge University Press, 2008 (568).

¹⁵⁶ US Census. "Historical Statistics of the United States, colonial times to 1957." Series Q 23-43. https://www2.census.gov/library/publications/1960/compendia/hist_stats_colonial-1957/hist_stats_colonial-1957-chQ.pdf

11.4 million tons by 1900,¹⁵⁷ and 24 million tons by 1910.¹⁵⁸ Conversely, the average price of steel rails produced by Carnegie plummeted from \$160 per ton in 1872 to \$17 per ton in 1897.¹⁵⁹ Cheapened steel was a crucial driver of the proliferation of labor-saving farm equipment, stoves and sewing machines. It was also critical to the construction of steel bridges, skyscrapers (Carnegie steel was employed to construct the world's first skyscraper, the Home Insurance Building of Chicago, in 1885),¹⁶⁰ subways and trolley lines.

Above all, the steel industry pioneered some of the most sophisticated strategies of intensified labor exploitation and union-busting. Frederick Taylor, the inventor of the continuous labor intensification system called Taylorism, honed his skills at a steel company before becoming a consultant in 1890. The Carnegie corporation crushed the massive Homestead steel strike of 1892, the opening salvo in a highly successful campaign to destroy steel worker unions in the US (the industry would remain almost entirely non-unionized until the 1930s). In 1901, Carnegie rebranded itself as US Steel, one of the most vicious and criminal monopolies of its time:

When it officially came into being, U.S. Steel controlled 37 percent of the nation's pig-iron capacity, 55 percent of its open-hearth production capacity, and 74 percent of its Bessemer production capacity. Moreover, its manufacturing facilities produced at least 50 percent of every major steel product sold in the United States.¹⁶¹

While British and US despotic industrialism both flourished within the demesne of their respective maritime and land empires, and Belgium, France and the Netherlands invented their own versions of such, the semi-peripheral empires and economies of the periphery found themselves increasingly hard-pressed to keep up. This planetary polarization is usefully summarized in terms of the increasing gap between the per capita GDP of the core, semi-periphery and periphery:

¹⁵⁷ Hillstrom and Hillstrom, *The Industrial Revolution in America: Iron and Steel* (106). The authors credit this data to Paskoff (1989).

¹⁵⁸ Hillstrom and Hillstrom, *The Industrial Revolution in America: Iron and Steel* (42).

¹⁵⁹ Hillstrom and Hillstrom, *The Industrial Revolution in America: Iron and Steel* (83).

¹⁶⁰ Hillstrom and Hillstrom, *The Industrial Revolution in America: Iron and Steel* (84).

¹⁶¹ Kevin Hillstrom and Laurie Collier Hillstrom, editors. *The Industrial Revolution in America: Iron and Steel*. Santa Barbara: ABC Clio, 2005 (24).

Figure 14. GDP of fourteen world empires, 1860-1910.¹⁶²

Polity	1860	1870	1880	1890	1900	1910	Percent World
British metropole only	81.8	100.2	120.4	150.3	184.9	207.1	7.7%
British metropole plus semi-peripheral offshoots ¹⁶³	90.8	113.3	139.7	178.4	219.3	264.7	9.8%
British metropole plus offshoots plus peripheral colonies	--	--	--	423.4	475.1	524.8	19.2%
United States metropole only	69.3	98.4	160.7	214.7	312.5	460.5	17.1%
German metropole only	59	72.1	86.6	115.6	162.3	210.5	7.8%
French metropole only	70.6	72.1	82.8	95.1	116.7	122.2	4.5%
Russian empire	--	--	--	102.0	158.9	216.6	8.6%
Austrian empire	--	26.7	--	39.9	50.2	63	2.3%
Dutch metropole only	7.9	10.0	12.3	15.1	17.6	22.4	0.8%
Belgian metropole only	10.9	13.7	17	20.9	25.1	30.5	1.1%
Italian metropole only	38	41.8	46.7	52.9	60.1	85.3	3.2%
Ottoman empire	--	--	--	--	--	18.2	0.7%
Japanese metropole only	--	25.4	31.8	40.6	52.0	64.6	2.4%
Qing empire	--	--	--	205.4	218.2	241.4	9.0%
Spanish metropole only	19.3	20	27.8	28.8	33.2	37.6	1.4%
Portuguese metropole only	3.6 ¹⁶⁴	4.2	4.4	5.7	7.0	7.2	0.3%

¹⁶² Data from Angus Maddison 2010. <http://www.ggdcd.net/maddison/oriindex.htm>.

¹⁶³ Australia, Canada and New Zealand.

¹⁶⁴ Portuguese data for 1861.

Figure 15. Per capita GDP in the fourteen world empires and selected colonial peripheries, British core = 100%, 1860-1910.¹⁶⁵

Polity	1860	1870	1880	1890	1900	1910
British metropole	100%	100%	100%	100%	100%	100%
British peripheral colonies	--	17%	--	15%	13%	15%
United States metropole	77%	77%	92%	85%	91%	108%
German metropole	58%	58%	57%	61%	66%	73%
French metropole	67%	59%	61%	59%	64%	64%
Russian empire	--	30%	--	--	28%	30% (1913)
Austrian empire	--	34%	--	37%	37%	43%
Italian metropole	--	47%	--	42%	40%	51%
Dutch metropole	84%	86%	88%	83%	76%	82%
Dutch colonial periphery	--	18%	17%	15%	16%	17%
Belgian metropole	81%	84%	88%	86%	83%	88%
Ottoman empire	--	--	--	--	--	20%
Japanese metropole	--	23%	25%	25%	26%	28%
Qing empire	--	17%	--	13%	11%	11%
Spanish metropole	44%	38%	47%	41%	40%	41%
Portuguese metropole	--	31%	27%	28%	29%	27%

In terms of per capita GDP, the US increased from 77% of the comparable British figure in 1860 to 108% by 1910. The other three core polities, namely Belgium, France and the Netherlands, remained approximately as wealthy as they were vis-a-vis Britain. By contrast, the per capita performance of the global periphery was an unmitigated disaster. The British colonial periphery, the Dutch colonial periphery, and the Qing empire were all wracked by continental-scale immiseration.

The polities of the semi-periphery were somewhere between these two antipodes. Germany's per capita GDP rose from three-fifths to three-quarters of the British figure by 1910, while the comparable figures for Austria, Italy and Japan rose slightly. Meanwhile, the position of the Ottoman, Portuguese, Spanish and Russian empires either stagnated or declined. A similar dispersion characterized the Central and South American republics. Between 1870 and 1910, Argentina's per capita GDP rose from 41% to 83% of the comparable British figure, that of Mexico rose from 21% to 37%, while that of Brazil declined from 22% to 17%.

The second great transformation wrought by the transition to Global Steam was political.

¹⁶⁵ Data from Angus Maddison 2010. <http://www.ggdc.net/maddison/oriindex.htm>.

The abolition of wageless labor, the rise of the US to core status, and the four semi-peripheral consolidations of Italy, South America, Germany, and Japan, reconverted a world-system dominated by ten imperial nationalisms into one dominated by fourteen national imperialisms.

Many (although far from all) of the citizens and subjects of those national imperialisms participated in a wide array of anti-colonial, anti-imperial progressive movements. However, an equivalent number also began to partake of new forms of industrial revanchism and imperial aggression. These latter included everything from British industrial racism and colonial apartheid to Austrian, French, German and Russian anti-Semitism, Austrian and German Slavophobia, Great Russian and Ottoman chauvinism, Japanese Sinophobia and anti-Koreanism, and US imperial white supremacy and Jim Crow, and from ever-larger imperial wars to continental famine-genocides.

The three most significant political innovations of the first decade of Global Steam were Nikolay Chernyshevsky's invention of semi-peripheral industrial revanchism in *What is To Be Done?* (1862), a phenomenon analyzed in Chapter 2; Matthew Arnold's exposition of the politically ambiguous international liberalism of the core polities in *The Function of Criticism at the Present Time* (1864); and finally the construction of the first theories of the progressive internationalism of the core and the international progressivisms of the semi-periphery in Marx's *Capital, Volume 1* (1867).

Arnold's text was the first to stamp the commodity form ("the object as in itself it really is", i.e. Kant's thing-in-itself) with the mid-Victorian commercial logo, transforming Hegel's world-historical Spirit into the profit-seeking "creative power" – the distant but unmistakable ur-form of Horkheimer and Adorno's culture industry. By identifying the business of critical power as the power of imperial business, Arnold unwittingly acknowledged the truth of Marx's sardonic comment that the ruling ideas of an epoch are the ideas of its rulers. Even at his most utopian, Arnold cannot exorcise Marx's spectral presence, in the same way Wagner's Wotan was haunted by the curse of the Ring:

It is the business of the critical power, as I said in the words already quoted, 'in all branches of knowledge, theology, philosophy, history, art, science, to see the object as in itself it really is.' Thus it tends, at last, to make an intellectual situation of which the creative power can profitably avail itself. It tends to establish an order of ideas, if not absolutely true, yet true by comparison with that which it displaces; to make the best ideas prevail. Presently these new ideas reach society, the touch of truth is the touch of life, and there is a stir and growth everywhere; out of this stir and growth come the creative epochs of literature.

The metric of the aesthetic commodity was no longer its absolute price, but rather its relative profitability. From the perspective of the latter, the "best ideas" are those most in accordance to "a stir and a growth everywhere", i.e. those which facilitate the accumulation of hegemonic British capital.¹⁶⁶

¹⁶⁶ Arnold subsequently glosses this hegemony as cultural capital: "But, after all, the criticism I am really concerned with,—the criticism which alone can much help us for the future, the criticism which,

The single greatest 19th century critique of this latter was furnished by Marx's *Capital*. Indeed, it is worth pausing for a moment to appreciate the qualitative leap Marx made between the limited geographical range of the 1848 *Communist Manifesto* and the 1852 *Eighteenth Brumaire* – the first great theories of the post-1492 revolutions and counter-revolutions of northwestern Europe – and the truly planetary horizon of the 1867 *Capital*.

The *Manifesto* began with the specter of working-class insurrection and tracked its footprints back to the textile-mills of Birmingham, while the *Brumaire* began with the theme of regressive historical repetition and traced its footprints back to the working-class faubourgs of Paris. By contrast, *Capital* began with an anonymous consumer confronting a nameless Victorian-era commodity in a nondescript London shop, and then traced that commodity in two directions at once: forwards into the realms of use-value and exchange-value, and backwards into the labyrinths of production, finance and distribution.

Capital was the ultimate speculative historical fiction of British hegemonic capital's future. Its single greatest insight was that the two-thirds of humanity who were still subsistence farmers, craftworkers and partly waged laborers in 1860 would eventually become fully waged laborers in a planetary world-market. One hundred and forty one years later, this prediction came true, and this is why Marx's critique furnishes the indispensable metric by which all detective stories, science fiction narratives, adventure tales, political intrigues, historical accounts, philosophical expositions and sociological treatises of Global Steam can be measured.

To be sure, Marx's achievement had two historical limitations. The first was its lack of a planetary theory of geopolitics, namely the precise role of mercantile and dynastic empires, imperial hegemons, imperial semi-peripheries and colonial peripheries vis-a-vis the economic, political and cultural contradictions of the post-1492 capitalist world-system.

The second was the lack of a planetary theory of natural history, namely the role of anthropoidal and non-anthropoidal evolutionary speciation, climatology, wind directions, ocean currents, rainfall distribution, the availability of ponds, lakes and rivers, agrochemistry, soil fertility, animal domestication, human nutritional requirements, mineral resources, fuel resources, viruses and bacteria, and ecological networks vis-a-vis humanity's estimated 300,000-500,000 years of existence as a species.¹⁶⁷

The first limitation would be partly ameliorated by the political and cultural innovations

throughout Europe, is at the present day meant, when so much stress is laid on the importance of criticism and the critical spirit,—is a criticism which regards Europe as being, for intellectual and spiritual purposes, one great confederation, bound to a joint action and working to a common result; and whose members have, for their proper outfit, a knowledge of Greek, Roman, and Eastern antiquity, and of one another. Special, local, and temporary advantages being put out of account, that modern nation will in the intellectual and spiritual sphere make most progress, which most thoroughly carries out this programme. And what is that but saying that we too, all of us, as individuals, the more thoroughly we carry it out, shall make the more progress?" Matthew Arnold, *The Function of Criticism at the Present Time* (1864).

¹⁶⁷ The oldest fossil remains of our own species were found at a Moroccan site called Jebel Irhoud, has been carbon-dated to 300,000 years ago. Genetics experts suggest the first homo sapiens may have existed as early as 500,000 years ago. Fossil records indicate our nearest revolutionary predecessor, homo erectus, existed from 1.9 million to 100,000 years ago.

<https://humanorigins.si.edu/evidence/human-fossils/species/homo-erectus>.

of the early 20th century progressive thinkers, international modernists and anti-colonial uprisings. However, it would not be fully remedied until the innovations of the 1960s and early 1970s, in the form of the world-systems sociology of Immanuel Wallerstein, Theodor Adorno's project of a negative or transnational dialectics, the anti-colonial mass movements of the global semi-periphery and periphery, and the most progressive aesthetic works of the 1968-1971 cycle of uprisings.

In like manner, the second limitation would be partly remedied by the farmers' movements and scientific revolutions of the early 20th century, but not fully resolved until the invention of ecological thinking during the 1950s and 1960s. This latter was the collective achievement of the environmental movements of the core polities, the struggles of indigenous peoples' and farmers' organizations in the semi-peripheries and peripheries, the scientific discovery of DNA (1954) and the creation of the internet (1969), and the invention of the first commercial microprocessor (1971).

One of the most remarkable passages in Marx's work occurs near the end of *Capital*, which outlines the concept of originary accumulation ("ursprüngliche Akkumulation"):

The discovery of the gold and silver lands of America, the extermination, enslavement and entombment of the indigenous population in mines, the initial conquest and looting of the East Indies, the transformation of Africa into an enclosure for the trade-hunt of black skins, indicate the dawn of the capitalist era of production. These idyllic processes are the primary moments of originary accumulation ["ursprüngliche Akkumulation"]. On their heels follow the trade wars of the European nations, with the globe as a stage. It began with the secession of the Netherlands from Spain, took on gigantic proportions in England's anti-Jacobin war, and still continues in the Opium War against China etc.¹⁶⁸

This passage effectively critiqued the Victorian ideology of uniform, linear progress by revealing the history of the capitalist world-system to be a series of asynchronous, nonlinear catastrophes. The British naval expedition against Qing China in 1842 could thus be read as the steam-powered version of Columbus' maritime predations in 1492, and Britain's unequal exchange of textiles for the cotton of its African and Asian colonies as the industrial version of the Hapsburg drain of American silver.

What is not clear, however, is precisely how those catastrophes were generated by the imperial competition and geopolitical contradictions of their time, or how the looting of human

¹⁶⁸ "Die Entdeckung der Gold- und Silberländer in Amerika, die Ausrottung, Versklavung und Vergrabung der eingebornen Bevölkerung in die Bergwerke, die beginnende Eroberung und Ausplünderung von Ostindien, die Verwandlung von Afrika in ein Geheg zur Handelsjagd auf Schwarzhäute, bezeichnen die Morgenröte der kapitalistischen Produktionsära. Diese idyllischen Prozesse sind Hauptmomente der ursprünglichen Akkumulation. Auf dem Fuß folgt der Handelskrieg der europäischen Nationen, mit dem Erdrund als Schauplatz. Er wird eröffnet durch den Abfall der Niederlande von Spanien, nimmt Riesenumfang an in Englands Antijakobinerkrieg, spielt noch fort in den Opiumkriegen gegen China usw." Karl Marx. *Capital*. Chapter 31. http://www.mlwerke.de/me/me23/me23_741.htm#Kap_24_6. This is my translation.

demography related to the looting of ecologies and natural resources. The root of the problem is the conceptual confusion inherent in the term “ursprüngliche Akkumulation”, often mistranslated as “original” or “primitive” accumulation, even though its meaning is closer to “initial” or “originary”. In the same chapter of *Capital*, Marx points out how the Atlantic slave trade functioned as a source of originary accumulation for the merchants of 18th century Liverpool:

Liverpool grew mightily on the basis of the slave trade. It formed its method of originary accumulation. And until today Liverpool ‘respectability’ remains the Pindar of the slave trade, which – compare the previously cited text of Dr. Aikin from 1795 – ‘has coincided with that spirit of bold adventure which has characterised the trade of Liverpool and rapidly carried it to its present state of prosperity; has occasioned vast employment for shipping and sailors, and greatly augmented the demand for the manufactures of the country’. Liverpool employed 15 ships for the slave trade in 1730, 53 in 1751, 74 in 1760, 96 in 1770, and 132 in 1792.

While the cotton industry introduced child slavery into England, it simultaneously gave the impulse to transform the previously more or less patriarchal slave-economy of the United States into a commercial system of exploitation. The disguised slavery of the wage workers of Europe thus required the pedestal of slavery pure and simple in the new world.¹⁶⁹

What Marx could not have known, due to the lack of reliable economic data, anthropological observations and sociological analyses in his time, was that the systems of wageless labor in the Atlantic, Eastern European and West Asian regions had never been non-commercial or pre-capitalist in nature. They were the purest creation of capitalist modernization imaginable, the products of the state-chartered mercantilism and dynastic expansionism of the Dutch-French co-hegemony as well as the maritime and imperial wars of the second supercycle.

Put bluntly, the concept of originary accumulation oscillates between Arnold’s notion of linear progress and Nietzsche’s concept of eternal recurrence, a.k.a. the spatial coordinates of the British hegemony and the temporal rhythms of its business cycles, without ever quite grasping that hegemony as a concrete content. What Marx did achieve, on the other hand, was this

¹⁶⁹ “Liverpool wuchs groß auf der Basis des Sklavenhandels. Er bildet seine Methode der ursprünglichen Akkumulation. Und bis heutzutage blieb die Liverpools ‘Ehrbarkeit’ Pindar des Sklavenhandels, welcher—vgl. die zitierte Schrift des Dr. Aikin von 1795—‘has coincided with that spirit of bold adventure which has characterised the trade of Liverpool and rapidly carried it to its present state of prosperity; has occasioned vast employment for shipping and sailors, and greatly augmented the demand for the manufactures of the country’.[Quote in English in original] Liverpool beschäftigte 1730 im Sklavenhandel 15 Schiffe, in 1751: 53, in 1760: 74, in 1770: 96 und in 1792: 132.

Während sie die Kindersklaverei in England einführte, gab die Baumwollindustrie zugleich den Anstoß zur Verwandlung der früher mehr oder minder patriarchalischen Sklavenwirtschaft der Vereinigten Staaten in ein kommerzielles Exploitationssystem. Überhaupt bedurfte die verhüllte Sklaverei der Lohnarbeiter in Europa zum Piedestal die Sklaverei sans phrase in der neuen Welt.” Karl Marx, *Capital*, Chapter 31. This is my translation.

magnificent insight into the core logic of British hegemonic capital:

Capital is deceased labor which only comes to life through the vampire-like sucking of living labor, and the more it sucks, the more it lives.¹⁷⁰

The Ricardian subtext of *The Communist Manifesto* – the notion of capital as a discrete quantity of goods, services or currency-units – was superseded by the notion of capital as a constantly self-expanding network of exchange-relations.¹⁷¹ Simultaneously, Marx rewrote the specter of the Communist insurrection into the rather different spectrality of hegemonic British capital. The trope of the exponentially reproducing vampire anticipated the publication of Bram Stoker's *Dracula* (1897) by thirty years, while the spectrality of British capital anticipated Benjamin's famous offhand comment that revolutions are the emergency hand-brake of the rail-car of history by seven decades.¹⁷²

To appreciate the power of Marx's insight, consider one of the most counterintuitive expressions of post-1860 revanchist industrialism, namely the harsh state repression meted out to political dissidents, progressive parties and class-conscious workers in the United States. Despite having one of the freest presses in the world and near-universal male suffrage in three-quarters of its states, the post-1865 United States also pioneered the criminalization and mass incarceration of the poor in American cities,¹⁷³ disenfranchised African Americans and poor whites throughout

¹⁷⁰ "Das Kapital ist verstorbne Arbeit, die sich nur vampyrmaig belebt durch Einsaugung lebendiger Arbeit und um so mehr lebt, je mehr sie davon einsaugt." Karl Marx, *Capital*. Volume 1, Chapter 10. This is my own translation.

¹⁷¹ This is also the secret of Marx's recuperation of the theory of speciation outlined by Darwin's *Origin of Species* (1859): "Relics of the means of production [Arbeitsmitteln] have the same significance for the understanding of extinct economic social formations as the assembly of fossilized bones does for the comprehension of the organization of extinct animal species." ["Dieselbe Wichtigkeit, welche der Bau von Knochenreliquien fr die Erkenntnis der Organisation untergegangner Tiergeschlechter, haben Reliquien von Arbeitsmitteln fr die Beurteilung untergegangner konomischer Gesellschaftsformationen."] Karl Marx, *Capital*. Volume 1, Chapter 5. This is my own translation. http://www.mlwerke.de/me/me23/me23_192.htm

¹⁷² "Marx says, revolutions are the locomotives of world history. But perhaps its the other way around. Perhaps revolutions are when a railcar-riding human race reaches for the emergency brake." ["Marx sagt, die Revolutionen sind die Lokomotive der Weltgeschichte. Aber vielleicht ist dem gnzlich anders. Vielleicht sind die Revolutionen der Griff des in diesem Zuge reisenden Menschengeschlechts nach der Notbremse."] Walter Benjamin. *Collected Works Volume 1, Number 3*. Frankfurt: Suhrkamp, 1974 (1232). This is my translation.

¹⁷³ The classic thesis of the post-1860 US invention of mass incarceration was provided by Sidney Harring: "...the aggressive police patrol practices which came to characterize the urban and industrial North had *originated* [in italics in original] in the slave-holding South. While in the pre-industrial North the 'watch-style' of policing predominated, in the South slavery met so much resistance and slave rebellion posed such a serious threat to the semi-feudal social order that a police institution with an aggressive patrol style developed (Genovese, 1974:617-19). The infamous 'slave patrols' generally

the former Confederate states during the 1890s, and deployed Federal soldiers and state militias to destroy unions:

From 1,000 to 2,000 workers were commonly arrested in big strikes; 100 to 200, in smaller ones. The police authorities, with hastily enlarged and armed deputy forces, sufficed for most strikes. But in the few big or supposedly dangerous strikes or when scabs needed protection, in came the regular army, state militias, and private employers' armies, often deputized with legal powers – a practice virtually unknown in Europe. State militias, aided occasionally by federal troops, were used in more than five hundred disputes between 1877 and 1903; and the largest private army, the Pinkerton Detective Agency, had more men than the U.S. Army.¹⁷⁴

The United States literally created the blueprint of the European, East Asian and South American industrial revanchisms of the third supercycle. To be sure, American fascism differed significantly from Chernyshevsky's Russo-fascism in the sense that the US was a self-financing core polity with no serious continental threats to its economic or political autonomy, whereas the Russian empire was a semi-periphery dependent on core finance and technology, and bordered by increasingly powerful and well-armed imperial rivals. Russo-fascism was thus a primarily colonial project interspersed with occasional elements of neocolonialism, precisely where US fascism was a primarily neocolonial project interspersed with occasional elements of colonialism. For indigenous Americans and for the one-ninth of US citizens who were African Americans, the post-1865 US was primarily a colonial fascist state; for Asian and Central American immigrants it was intermittently colonial and fascist; and for European immigrants and poor whites, it was primarily neocolonial.

This is the place to mention the third great transformation of Global Steam, namely the sublation of the industrial realisms of 1815-1860 into the industrial modernisms of 1860-1914.¹⁷⁵

consisted of three armed men on horseback covering a 'beat' of fifteen miles maximum. All Blacks encountered were identified and, if in violation of the harsh slave codes, summarily whipped and taken home. In addition, all slave quarters were frequently searched for contraband (Henry, 1971:28-38). Southern cities as well had much more developed and aggressive police forces than Northern cities (Wade, 1972:88; Bacon, 1939). In both the North and the South, the development of the police institution and of particular policing practices was the result of the historically specific political and economic needs of powerful elites, not the fulfillment of 'value-neutral' social order requirements." Sidney Harring (1976). "The Development of the Police Institution in the United States." *Crime and Social Justice*: 5 (57).

¹⁷⁴ Michael Mann. *The Sources of Social Power, Volume 2* (645-646).

¹⁷⁵ To recapitulate our arguments from Volumes 1-3, the hegemonic aesthetic logic of the Hapsburg hegemony (1492-1618) and the Thirty Years War (1618-1648) was dynastic realism, that of the Dutch-French co-hegemony (1648-1775) was mercantile realism, that of the second supercycle (1775-1815) was plebian realism, and that of the first half of the British hegemony, Global Cotton (1815-1860), was industrial realism. In the chapters to come, we will argue that the hegemonic aesthetic logic of the third supercycle (1914-1945) was international modernism, that of the first half of the US

Whereas the greatest works of Global Cotton were speculations on imperial national audiences which were only weakly connected to each other, and which were either dominated by nobilitarian elites or still in the process of formation, the greatest works of Global Steam were co-produced by internationally-connected and far more plebianized national imperial audiences.

These audiences were crucial to the emergence of mass reading publics in Bengali, Brazilian Portuguese, Cantonese and Mandarin Chinese, Japanese, Korean, Russian, and South American Spanish, as well as the rise of the tabloid newspapers epitomized by Joseph Pulitzer and William Randolph Hearst. They were as necessary to the triumph of international artistic movements such as Impressionism, Naturalism, Symbolism and Expressionism as they were to the popularization of the national imperial Western in *Buffalo Bill's Wild West* (1883), national imperial science fiction in Jules Verne's *Journey to the Center of the Earth* (1864), national imperial children's literature in Lewis Carroll's *Alice in Wonderland* (1865) and the national imperial detective novel in Wilkie Collins' *The Moonstone* (1868).

One of the most important institutional innovations of these reading publics was the national public library. The iconic embodiments of these latter included Henri Labrousse's 1862 iron-and-glass reading room in France's National Library, British Library director Antonio Panizzi's popularization of the information catalog,¹⁷⁶ Pierre Larousse's 1866-1876 creation of the *Great Universal Dictionary of the 19th Century*, and Ainsworth Spofford's 1864-1897 stewardship of the Library of Congress which transformed a hodgepodge collection of government documents into a true archive of the American people. The total number of public libraries in England increased from 52 in 1870 to 408 by 1890 and in France from 773 in 1874 to 2,991 in 1902, and similar expansions occurred beginning in the 1880s in the Austrian empire, the German empire, Italy and the Netherlands.¹⁷⁷

There is no better example of the emergence of national imperial audiences than

hegemony, the Global Plan (1945-1973), was consumerization, that of the second half of the US hegemony, the Global Minotaur (1973-2008) was that of digitization, and that of the fourth supercycle (2008-2038) is commonization.

¹⁷⁶ "What Panizzi's labors with obscure pamphlets had shown him was the dense web of connections authors and publishers forged among works in print. Tracts answered other tracts, which might be reprintings of articles that had appeared in journals and newspapers, or excerpts from books; they could appear simultaneously in several forms, under several imprints. Such crucial information as the author's name, the publisher, and the date and place of publication might be incomplete, erroneous, or missing altogether. Panizzi developed a series of rules that reproduced these relations in the catalog, so that librarians—and crucially, readers—could trace and follow them. Unwittingly at first, he was helping to transform the library catalog from an inventory into an instrument of discovery. It's tempting to say that his discovery of intertextuality among even the most mundane books forebodes the rise of the interconnected world of the digital age; it's probably more accurate, however, to note that, from the vantage point of the wired world, Panizzi's catalog looks like the beginnings of the Internet." Matthew Battles. *Library: An Unquiet History*. New York: W.W. Norton, 2003. Chapter 5. Also see: Stefano Gambari and Mauro Guerrini (2018). "'Terrible Panizzi': Patriotism and Realism of the 'Prince of Librarians'." *Cataloging & Classification Quarterly*.

¹⁷⁷ Orlando Figes. *The Europeans: Three Lives and the Making of a Cosmopolitan Culture*. New York: Henry Holt, 2019. Chapter 8: Death and the Canon, section 4.

Wagner's two final *Ring* operas. *Siegfried* (1871) and *Twilight of the Gods* (1874) transformed opera into the live-action prefiguration of cinema, in much the same way that late 19th century Australia, Canada and the United States transformed settler-colonial farming into an industrial enterprise. The former replaced arias with motifs, instrumental modulation with sound-effects, and stagecraft with cinematography with the same industrial zeal that the latter replaced threshers with machines, horses with railroads, and manure with chemical fertilizers. Both achieved an extraordinary leap in productivity at the price of fearsome acoustic reification and environmental degradation, respectively.

Just as the Australian, Canadian and US states played a key role in facilitating their respective agricultural expansions, especially on the local levels of municipal finance and public education, so too did the Central European states play a key role in transforming Wagner into the maestro of Bayreuth. Oliver Wilmes has provided the single best account of how one of Schroeder's canonic intermediary states, the monarchy of Bavaria, was the launch-pad of Wagner's self-commercialization:

But this much is certain: in November 1863 there were still barriers in the way of a lasting union between Wagner and Cosima, both of whom were in complex dependent relationships as a result of the bonds of family and friendship between Bülow, Liszt and Wagner himself. It would require the intervention of a third party before these barriers could be removed, and until that happened in May 1864, Wagner's ship of state was to continue its wayward course towards the reefs and shoals of disaster. One after another, his plans and hopes all burst like bubbles, as he sank further and further into debt and could no longer pay his creditors as the result of a series of transactions involving dubious bills of exchange. It was in order to escape from the threat of a debtor's prison that he fled from Vienna on 23 March 1864.

Wagner was fifty years old, fleeing from his creditors, with no home to call his own. Where should he go? Where *could* [italics in original] he go? The Wesendoncks declined the pleasure of his company. And so, after passing through Munich, Wagner traveled to Mariafeld near Zurich, arriving there on 26 March and throwing himself at the mercy of a female friend, Eliza Wille, who put him up for a month. A family friend of the Willes, Friedrich von Bernhardi, recalled Wagner's arrival in Zurich:

On the run from his creditors, he alighted from a first-class compartment, declined to take the steamer to Meilen but insisted on a carriage, which he could no more afford to pay for than for the journey from Vienna to Zurich, then bought the most expensive cigars he could find, which he asked to be placed on Wille's account, ordered a red silk dressing gown – again at Wille's expense – and told everyone that he was staying with the Willes only as a favor.

No matter how badly things may have been going for him, Wagner remained true to himself and with a casualness bordering on the ridiculous demanded the luxuries that he believed were his by right. He continued to cut the capers of a deposed but still boundlessly self-confident monarch. Eliza Wille was not a little surprised to be told one day:

Mine is a different kind of organism, I have sensitive nerves, I must have beauty, radiance and light. The world owes me a living! I can't live the miserable life of an organist like your Master Bach! Is it such an outrageous demand to say that I deserve the little bit of luxury that I can bear? I, who can give pleasure to thousands?

Wagner got increasingly on his hostess's nerves, and his visit ended after a month. His next hideout was Stuttgart. Here, on 3 May 1864, the long-awaited miracle finally happened, when the cabinet secretary to the young King Ludwig II of Bavaria, Franz Seraph von Pfistermeister, tracked Wagner down to his hotel in the town and invited him to Munich, where Ludwig demanded to see him. Ludwig's top civil servant informed the bemused composer that the king was resolved to support a musician whom he revered and to ensure that his future was free from the cares and calamities of everyday life. Wagner was free at a stroke: he had finally achieved his breakthrough.¹⁷⁸

The characteristic form this breakthrough took was that of the state-backed industrial speculation. Just as Lesseps' 1859 maritime speculation of the Suez Canal had to be rescued by Napoleon III and later by the republican French state, so too was Wagner's 1854-1856 operatic speculation of the *Ring* redeemed by Ludwig II and later by the capital market of the German empire: Bayreuth was the Compagnie de Suez of sound.

Conversely, whereas the first two *Ring* operas were lightly fictionalized tales of Wagner's post-Dresden exile, the final two works were reflexive tales of Wagner's post-1860 franchise-building. As such, they mark the moment that national imperial audiences began to co-construct the aesthetic works of industrial modernism. This principle of co-construction put immense pressure on the proto-chromatic musical material and proto-national imperial dramaturgy of *The Rhinegold* and *The Valkyries*, a pressure Wagner obliquely acknowledged in the forging of Siegfried's sword of destiny from the fragments bequeathed to him by Siegmund.

This sword is named "Nothung", a German neologism best translated as "Necessitude" ("Not" is the German word for necessity). One of Wagner's most ingenious moves was to rewrite the sword of destiny from a narrative symbol of grandeur and power into a musical one of anguish and lack. Necessitude's leitmotif is a falling octave in a minor key which does not resolve into a major key, i.e. the sword of destiny is concentrated dissonance.¹⁷⁹ Conversely, the forge in which that dissonance is produced is no longer the underworld domain of the Nibelungs, the pre-industrial artisanal caste embodied by Mime, who produced the magic helm but who was unable to master industrial production. Instead, it has become the realm of the unskilled value-producing mass laborer embodied by Siegfried.

Whereas *The Rhine Gold* invented the category of foley effects in the sequence in Nibelheim wherein Wotan and Loge defrauded Alberich of the Ring – the epic inauguration of industrial sound effects in the first epic drama of industrial-scale looting – *Siegfried's* first act overflowed with hammers and industrial rhythms. These latter were not external styles or musical ornaments, but recombined the kinetic energy of the giants' leitmotif in *The Rhine Gold* and the aerial dynamism of the Valkyrie leitmotif in *The Valkyries* into the principle of musical self-propulsion.

The instrument of this self-propulsion was not the sword, but the microphone, the

¹⁷⁸ Oliver Hilmes. *Cosima Wagner: The Lady of Bayreuth*. Translate by Stewart Spencer. New Haven: Yale University Press, 2011 (64-65).

¹⁷⁹ Jason Pano (Youtube channel). "Wagner Leitmotives – 44 – Nothung." February 25, 2012. https://www.youtube.com/watch?v=GSXwfKMpsmk&ab_channel=JasonPano

complement of the loudspeaker through which Fafner's dragon speaks in *Siegfried's* Act 2.¹⁸⁰ The stage opera was transformed into a factory of sound, which melted down the shards of chord-based tonality and reforged it into post-1860 chromaticism:

Siegfried: "Away with that dross, I need it not; I won't cook up any sword with solder [Bappe]!"

Mime: "You're ruining the file, grinding the rasp to pieces! Are you really going to tear the steel to shreds?"

Siegfried: "To be red-hot, I must see it in shards: what is asunder, I force together like so."

He continues to file with great zeal.

Mime: *to himself*: "It's clear to me, nothing helps the clever here: only stupidity helps the stupid!"¹⁸¹

What is not yet clear, on the other hand, is how Mime's catastrophic cleverness related to Siegfried's equally disastrous obtuseness. In Chapter 10 of the previous volume, we noted that the *Ring* cycle relied on a series of vanishing mediators – Loge in *The Rhine Gold*, Wotan in *The Valkyries*, Mime and Fafner in *Siegfried*, and Siegfried in *Twilight of the Gods* – whose eclipse symbolized the passing of the dynastic-mercantile era and the emergence of national imperial capitalism.

One of Wagner's greatest achievements was the rewriting of these mediators into ciphers of national imperial audiences. On closer inspection, four out of five of these mediators were mean-spirited portraits of Wagner's patrons, superimposed on equally repellent self-portraits of Wagner at specific moments of his career.¹⁸²

Loge was half Meyerbeer and half Wagner during his tenure as a Dresden conductor; Wotan was part Otto Wesendonck, the cosmopolitan silk merchant who was the wife of Wagner's love-interest, Mathilde Wesendonck, and part Wagner during his Swiss exile; Mime was half Bavaria's Ludvig I (the libretto oozes incipient anti-Semitism as well as rampant homophobia, Wagner's response to Ludvig's romantic infatuation with the composer), and part Wagner as the pre-1863 writer of crackpot tracts, mounting debts and unstageable dramas; while Siegfried was part Bismarck and part Wagner as the doyen of Bayreuth.

¹⁸⁰ While Wagner would complete the writing of *Siegfried* in 1871, six years before Edison's invention of the phonograph, an argument can be made that the final two *Ring* operas were the first musical works explicitly designed for a future mass market of record-players.

¹⁸¹ Siegfried: "Fort mit dem Brei, Ich brauch' ihn nicht; mit Bappe back' ich kein Schwert!"

Mime: "Du zerfeilst die Feile, zerreibst die Rassel! Wie willst du den Stahl zerstampfen?"

Siegfried: "Zersponnen muß ich in Spähne ihn seh'n: was entzwei ist, zwing' ich mir so."

Er feilt mit großem Eifer fort.

Mime: *für sich*: "Hier hilft kein Kluger, das seh' ich klar: hier hilft dem Dummen die Dummheit allein!"

Richard Wagner, *Siegfried*, 1871. Act 1, Scene 3. This is my own translation.

¹⁸² Wagner's greatness as an artist, curious as it sounds, was due to the fact that he was as cruel to himself as he was to his patrons. In this, Wagner's chromaticism paralleled Nietzsche's concept of transvaluation: the self-loathing of chord-based tonality in the former echoed with the self-loathing of national imperial ideology in the latter.

The one vanishing mediator which did not fit this pattern was Fafner, the symbol of Napoleon III's Second Empire, whose main narrative function was not so much to showcase Siegfried's heroism as to donate the potion-like blood which endowed Siegfried with the power to comprehend birdsong and thereby escape Mime's treachery.¹⁸³

On the level of content, whereas Mime symbolized the fate of the pre-industrial artist rendered obsolete by national imperial audiences, Siegfried signified the triumph of the one-hit wonder, whose success remained as mysterious to the aesthetic producer as to the consuming audience itself. To paraphrase Alfred Polgar's famous witticism, Mime's quest is hopeless but not serious, whereas Siegfried's quest is serious but not hopeless.¹⁸⁴

Perhaps the greatest innovation of the final two *Ring* operas was Wagner's invention of national imperial mythos. This latter updated the story-telling practices of pre-industrial mythology very much as the Bessemer steel furnace industrialized the Iron Age fire-pit. Whereas the reception of all mythology depended on the credulity of pre-industrial audiences, the reception of Wagnerian mythos was dependent on audience credibility.

As a dramatist, Wagner realized that just as mythology was meaningful to subsistence farmers because it retold a story they already knew by heart, national imperial mythos could only become meaningful to fully waged workers by means of the laborious self-repetition of that mythos into the hearts and minds of consumers. The art-work of industrial modernism had to be its own advertising campaign. Adorno captured this logic of self-commercialization in Wagner with precision:

The concealment of production through product placement [Erscheinung des Produkts: external appearance of the product] is Richard Wagner's law of form. The product presents itself as something self-producing; thus too the primacy of the lead motif and chroma. Since the aesthetic appearance [Erscheinung: external appearance] no longer permits any view of the forces and conditions of its real existence as something produced, the former raises the latter's appearance [Schein: appearance, semblance, financial note] to something more seamless than the claim of the existent. The fulfillment of appearance [Schein] is simultaneously the fulfillment of the illusory character of the work of art as something which is real sui generis [Latin: as its own special case], which constitutes itself in the realm of absolute appearance [Erscheinung], without renouncing in any case replicability [Abbildlichkeit: picturability, copyability]. Wagner's operas tend towards works of bedazzlement [Blendwerk], as Schopenhauer called 'the outside of the bad commodity': towards phantasmagoria.¹⁸⁵

¹⁸³ Wagner could read French but was never fluent in the language, and had a permanent love-hate relationship with French Grand Opera dating from his years in Paris. Put bluntly, Fafner's blood was the magic potion of Francophilia.

¹⁸⁴ The quote is often misattributed to Karl Kraus. Alfred Polgar's original quote from 1921: "The situation in Austria is hopeless, but not serious." [Die Lage in Österreich ist hoffnungslos, aber nicht ernst.] <http://anno.onb.ac.at/cgi-content/anno?aid=ptb&datum=19210208&seite=3&zoom=33&query=%22hoffnungslos%20aber%20nicht%20ernst%22&ref=anno-search>.

¹⁸⁵ "Die Verdeckung der Produktion durch die Erscheinung des Produkts ist das Formgesetz Richard Wagners. Das Produkt präsentiert sich als sich selbst Produzierendes: daher auch der Primat von Leitton

This phantasmagoria compensated for the loss of the tonal rigor and improvisatory nuance of its historical predecessor, the fantasia of French Grand Opera, by means of cinematic density.¹⁸⁶ Vast swathes of *Siegfried* and *Twilight of the Gods* are the demythologized versions of scenes in *The Rhine Gold* and *The Valkyries*, which are transformed into proto-cinematic storyboards.¹⁸⁷ These storyboards brought inattentive or untutored members of the mass audience up to speed on the latest developments, while offering a few choice musical and dramatic morsels to keep the musically sophisticated members of that audience entertained.

They are testament to the moment the audience reception of fully waged audiences became a motive force of world history. Wagner acknowledged those audiences by moving the center of gravity of the *Ring* cycle away from the tragedy of proto-industrial or originary accumulation staged by *The Rhine Gold*, and towards the tragedy of industrial accumulation depicted by *Twilight of the Gods*.¹⁸⁸

und Chroma. Indem die ästhetische Erscheinung keinen Blick mehr durchläßt auf Kräfte und Bedingungen ihres realen Produziertseins, erhebt ihr Schein als lückenloser den Anspruch des Seins. Die Vollendung des Scheins ist zugleich die Vollendung des illusionären Charakters des Kunstwerks als eines Wirklichen sui generis, das im Bereich der absoluten Erscheinung sich konstituiert, ohne doch auf Abbildlichkeit zu verzichten. Wagners Opern tendieren zum Blendwerk, wie Schopenhauer die »Außenseite der schlechten Ware« nennt: zur Phantasmagorie.” Theodor Adorno. *Versuch Über Wagner* (82). This is my own translation.

¹⁸⁶ The scene of Siegfried’s battle with Wotan was the template of every Hollywood superhero action sequence to come:

He [Siegfried] cleaves the Wanderer’s spear in two: a lightning-bolt leaps therefrom to the rocky cliffs, whose previously dull glow begins to blaze brighter and brighter with fiery flames. A peal of thunder, which quickly fades, accompanies the cleave. The pieces of the spear roll at the Wanderer’s feet. He picks them calmly up.

Wanderer: “Go on! I cannot stop you!”

He disappears suddenly in complete darkness.

[Er haut dem Wanderer mit einem Schlage den Speer in zwei Stücken: ein Blitzstrahl fährt daraus nach der Felsenhöhe zu, wo von nun an der bisher mattere Schein in immer helleren Feuerflammen zu lodern beginnt. Starker Donner, der schnell sich abschwächt, begleitet den Schlag. Die Speerstücken rollen zu des Wanderers Füßen. Er rafft sie ruhig auf.

Wanderer: Zieh’ hin! Ich kann dich nicht halten!

Er verschwindet plötzlich in völliger Finsterniss.] Richard Wagner, Siegfried. Act 3, Scene 2. This is my translation.

¹⁸⁷ This is a restatement of Adorno’s insightful comment in one of his later essays on Wagner: “That which is absolute – the deliverance from mythos, even if it were that of catastrophe – is only possible as reprise. Mythos is permanent catastrophe.” [“Das Absolute, die Erlösung vom Mythos, sei es auch die als Katastrophe, ist nur als Reprise möglich. Der Mythos ist die Katastrophe in Permanenz.”] Theodor W. Adorno. “Wagners Aktualität.” In: *Gesammelte Schriften. Volume 16: Musikalische Schriften I-III*. [“Wagner’s Contemporaneity”.] Frankfurt: Suhrkamp, 1997 (561). This is my translation.

¹⁸⁸ To take only the most obvious example, Alberich is modeled on the post-hegemonic Hapsburg despot,

This necessitated the transformation of Brünnhilde from the supporting character of *The Valkyries* and *Siegfried* into the main protagonist of *Twilight of the Gods*, one of the greatest midcourse retcons in the history of opera.¹⁸⁹ The biographical precondition for this retcon was Wagner's partnership with Cosima, his second wife and the indispensable assistant and manager of his post-1863 career. Hilmes had this penetrating insight into Cosima's character:

The belief that suffering could help her to grow and that she was a kind of martyr was Cosima's strategy for dealing with the world psychologically. In short, she accepted the many emotional wounds that she suffered early in life as so many challenges. If Cosima withstood these trials with humility, then her inner logic dictated that she was destined to walk in the footsteps of Christ. As a result, she developed an almost pleasurable propensity for suffering that was caught up with a submissive willingness for self-sacrifice on the one hand and a mixture of pride and absolute self-control on the other. But there was also something specious about these characteristics: they were, after all, only a small step away from affected suffering, counterfeit emotion and showy gestures. Had not the Abbé Gabriel described the married woman as a 'living host' and likened her life to a constant 'sacrifice'? Cosima seems to have taken this to heart, for her marriage to Wagner many years later was notable for its altogether masochistic emotionalism. Everything from Wagner's passing remarks ('the Master's words') to his marital infidelity was invested with a theatricality of positively histrionic proportions.¹⁹⁰

Cosima was crucial to the completion of Wagner's final four operas as well as to the construction of Bayreuth. Less happily, this partnership also magnified Wagner's anti-Semitism, originally little more than professional jealousy of Mendelssohn's success with the French public, into something far more sinister. It is worth pointing out that Jews were a tiny minority in pre-1914 Germany, comprising less than 1% of its population. By contrast, 2.2 million Jews lived in the Austrian empire in 1914, 4.2% of its population,¹⁹¹ while 5.2 million lived in the westernmost regions of the Russian empire in 1897, or about 3% of its population.

What this meant is that Wagner's post-1860 anti-Semitism was a disguised Slavophobia. It was the imperial jealousy of the Austrian and Russian empires' repression of their respective ethno-confessional minorities. In the decades after Wagner's death, Cosima and Wagner's heirs transformed this Slavophobia into Bayreuth's death-cult of industrial revanchism, the template of the international revanchist mythos of German Fascism.

The signal irony of this transformation is that far from being the acme of German imperialism, the *Ring* operas were among the most devastating critiques of national imperial

whereas Hagen is modeled on the early 19th century industrial dynast.

¹⁸⁹ Retcon refers to "retroactive conversion", the rewriting of past episodes of a mass media franchise by newer ones in order to explain away contradictions and loose ends in franchise lore.

¹⁹⁰ Oliver Hilmes, *Cosima Wagner* (26-27).

¹⁹¹ Wróbel Piotr (1994). "The Jews of Galicia under Austrian-Polish rule, 1869-1918." *Austrian History Yearbook* 25 (97-138).

http://jgaliciabukovina.net/sites/default/files/article_file/Piotr%20Wrobel%2C%20Jews%20of%20Galicia%20Under%20Austrian-Polish%20Rule%201867-1918.pdf

mythos ever created. The art-work of industrial modernism was not just its own advertising campaign, it was also its own self-critique. The motor of this self-critical impulse was the plebianization of the national imperial audience. The numerical and demographic expansion of this audience increasingly compelled artists to respond to the economic crises, cultural aspirations and political innervations of the industrial era.

The single most striking narrative metric of this plebianization in the *Ring* cycle was the ever-increasing power of the Ring. Whereas the Ring was primarily a tempter during *The Rhine Gold*, capable of no more than local theft and opportunistic fratricide, in *The Valkyries* it successfully planned and executed the assassination of Siegmund, and deeply damaged Wotan's authority by triggering Brünnhilde's exile. During *Siegfried*, the Ring liquidated Fafner and Mime, shattered Wotan's authority, and co-sponsored Siegfried's conquest of Brünnhilde. By the end of *Twilight of the Gods*, the Ring has orchestrated a planetary conflagration with the panache of Archduke Ferdinand.

This increasing power was not, however, matched by any corresponding stage presence. The Ring was literally the greatest franchise supervillain of all time to never get its own monologue. Conversely, the sole counterforce against the growing might of the Ring, namely Brünnhilde, was the greatest franchise superhero of all time to never get her own highlight reel.

One of Wagner's most subtle achievements in *The Rhine Gold* was to link the origin story of the Ring with that of Brünnhilde. Brünnhilde's mother was Erda, the primal earth-mother who convinced Wotan to yield the Ring to the giants before it completely overthrew his mind. While Erda limited herself to appealing to Wotan's dynastic-mercantile sensibilities, Brünnhilde actively defied Wotan's authority in *The Valkyries* and disrupted the Ring's plot to eradicate the Wälsungs.

During *Siegfried*, Brünnhilde moves from the position of defendant to that of prosecutor, subjecting the supposedly all-conquering hero to a withering psychological cross-examination in the guise of a love-duet. After hammering through Act 1 like an industrial worker of the Ruhr and marching through Act 2 like one of Moltke's soldiers, Siegfried's bravado abruptly disintegrates under Brünnhilde's steely skepticism in the middle of Act 3, scene 3:

Siegfried: "...yet what your singing tells me
dumbfounded I don't understand it at all.
I cannot grasp distant things [das Ferne] in any real way [sinnig]
when all my senses see and feel only you!
You chain me with choking fear:
you alone have taught me to be afraid;
binding me in powerful cords,
do not deny me my courage!"¹⁹²

¹⁹² Siegfried: "...doch was du singend mir sagst, / staunend versteh' ich's nicht. / Nicht kann ich das Ferne sinnig erfassen, / wenn alle Sinne dich nur sehen und fühlen! / Mit banger Furcht fesselst du mich: / du Einz'ge hast ihre Angst mich gelehrt; / den du gebunden in mächtigen Banden, / birg meinen Muth mir nicht mehr!" Richard Wagner, *Siegfried*. Act 3, Scene 3. This is my translation.

What strikes terror into Siegfried's heart is not sexual difference per se, but an institution which Freud would theorize in *The Interpretation of Dreams* (1899), namely the late 19th century marketplace of desire: the aspiration of semi-peripheral elites to access the primarily British, French and American industrial consumer goods of Global Steam.¹⁹³ It is Siegfried's provincial ignorance of these latter which causes him to instantly forget what he does not have the capacity to properly digest in the first place, the ur-form of Hagen's memory-wiping potion ("...and the fear that, alas! I never learned, / the fear you scarcely taught me: / the fear, it seems to me, / Stupid me, I've completely forgotten it now!").¹⁹⁴

The antipode of this forgetting was the nascent self-awareness of fully waged workers as aspirational political and cultural subjects, which is not to be confused with a fully-developed class consciousness. Consumption-driven forgetting and consumerist aspiration are given their most tangible form in the finale of Act 3, scene 3, wherein Siegfried celebrates the acquisition of Brünnhilde at the same moment that Brünnhilde celebrates the impending downfall of Valhalla.

Wagner ingeniously foregrounded the fundamental incompatibility of the two voices by composing each to diverge rhythmically from the other. They never sing the same lines or on the same accented beat until the very end. This is the moment both declare, as if to some offscreen bailiff, that each is the lawful property of the other:

¹⁹³ Kasper Holten's 2006 Copenhagen *Ring* was one of the first productions to follow through on this insight, by staging the cycle as an Ikea walk-in showroom.

¹⁹⁴ Siegfried: "...und das Fürchten, ach! das ich nie gelernt, / das Fürchten, das du mich kaum gelehrt: / das Fürchten, mich dünkt, / ich Dummer vergaß es nun ganz!" Richard Wagner, *Siegfried*. Act 3, Scene 3. This is my translation.

Figure 16. Finale of Brünnhilde and Siegfried's duet.¹⁹⁵

Brünnhilde	Siegfried
Depart, Valhalla's luminous world	Brünnhilde lives, Brünnhilde laughs!
Disintegrate into dust, you proud residence!	Hail to the day which radiates around us!
Farewell, resplendent pomp of the gods!	Hail to the sun, which shines on us!
End in bliss, you eternal race!	Hail to the light, which emerges from the night!
Let the Norns tear the rope of runes!	Hail to the world, in which Brünnhilde lives!
The twilight of the gods gathers apace!	She wakes, she lives
Night of annihilation, mists arising!	She smiles at me:
Now Siegfried's star shines on me:	Brünnhilde's resplendent star shines on me!
He is mine forever, is mine always,	She is mine forever, is mine always,
inheritance [Erb] and property [Eigen], one and all,	inheritance [Erb] and property [Eigen], one and all,
Luminous love, laughing death! Luminous love, laughing death! Luminous love, laughing death!	Luminous love, laughing death! Luminous love, laughing death! Luminous love, laughing death!

The threefold repetition of the closing refrain ("luminous love, laughing death") is not just the foreshadowing of the dazzling light-show and chthonic doom of the end of the *Ring* cycle. It is also a ritual curse. That which exists is turned into its opposite, the abstract negation: the crowning of the couple's endless love heralds the doom of universal lovelessness.

¹⁹⁵ "Brünnhilde: "Fahr' hin, Walhalls leuchtende Welt! / Zerfall' in Staub deine stolze Burg! / Leb' wohl, prangende Götterpracht! / End' in Wonne, du ewig Geschlecht! / Zerreißt ihr Nornen das Runen Seil! / Götterdämm' rung, dunkle herauf! / Nacht der Vernichtung neb'le herein! / Mir strahlt zur Stunde Siegfriedes Stern: / er ist mir ewig, ist mir immer, / Erb' und Eigen, Ein und All'!"
Siegfried: "Brünnhilde lebt, Brünnhilde lacht! / Heil dem Tage, der uns umleuchtet! / Heil der Sonne, die uns bescheint! / Heil dem Licht, das der Nacht enttaucht! / Heil der Welt, der Brünnhilde lebt! / Sie wacht, sie lebt, / sie lacht mir entgegen: / prangend strahlt mir Brünnhildes Stern! / Sie ist mir ewig, ist mir / immer, Erb' und Eigen, Ein und All'!"
Beide: "Leuchtende Liebe, lachender Tod! / Leuchtende Liebe, lachender Tod: / leuchtende Liebe, lachender Tod!" Richard Wagner, *Siegfried*. Act 3, Scene 3. This is my translation.

The true dimensions of this lovelessness are revealed only in Act 1, scene 2 of *Twilight of the Gods*, wherein Siegfried ingested Hagen's potion, is instantly mesmerized by Guttrune, and agrees to hand-deliver Brünnhilde as Gunther's bride in exchange for Guttrune's hand. Crucially, Wagner's stage directions indicated that the Gibichungs dwelled in the Rhine river-valley, the most commercialized region of the mid-19th century as well as the region bordering the core polities of France and the Netherlands. Imperial national temporality fell into national imperial space, transforming Siegfried into the final vanishing mediator of the *Ring* cycle.

It follows that whereas the love-potion in *Tristan and Isolde* was the mutual fabrication of two already-infatuated lovers, Hagen's potion was the ceremonial toast sealing the induction of the Wälsungs into the Gibichung family proprietorship. It is not that Siegfried somehow forgot who he was, it is that he never learned to properly love in the first place. Alberich's individual renunciation of love for the sake of originary accumulation has become the universal blight of lovelessness for the sake of industrial accumulation.

Our first glimpse of the titanic human and ecological cost of this transformation occurs during Act 1, Scene 3 of *Twilight of the Gods*, when Brünnhilde's sister, Waltraute, reveals that Valhalla stands on the brink of ruin:

Waltraute: "Thus he [Wotan] sits, speaking not a word,
mute and solemn at the high seat;
holding fast the splinters of the spear in hand;
he no longer touches Holda's apples.
The gods stare frozen in astonishment and horror.
He sent both his ravens on a trip:
should even one return with good news,
then the god would – for the very last time!
– smile eternally.
Clasping his knee, lay we Valkyries;
he remains blind to our pleading gaze:
all of us are consumed
with dismay and boundless fear."¹⁹⁶

Yet when Waltraute subsequently implores Brünnhilde to return the Ring to the Rhine-maidens, Brünnhilde refuses. This is not because she has been wholly corrupted by its power, but because the Ring is Siegfried's love-pledge, by which his love is both validated and preserved ("For from

¹⁹⁶ Waltraute: "So sitzt er, sagt kein Wort, / auf hehrem Sitze stumm und ernst; / des Speeres Splitter fest in der Faust; / Holdas Äpfel rührt er nicht an. / Staunen und Bangen binden starr die Götter. / Seine Raben beide, sandt' er auf Reise: / kehrten die einst mit guter Kunde zurück, / dann noch einmal zum letzten Mal! / lächelte ewig der Gott. / Seine Knie umwindend, liegen wir Walküren; / blind bleibt er den flehenden Blicken: / uns alle verzehrt / Zagen und endlose Angst." Richard Wagner, *Twilight of the Gods*, Act I, Scene III. This is my translation.

it shines Siegfried's love blissfully on me, Siegfrieds' love!").¹⁹⁷

In one of the most arresting passages in musical history, Brünnhilde's voice reprises the sorrowful renunciation motif first intoned by Alberich at the beginning of *The Rhine Gold*: "I will never let go of love, / you'll never wrest love from me, / even if Valhalla's shining glory should collapse into rubble!"¹⁹⁸ Alberich's catastrophic abjuration accedes to Brünnhilde's catastrophic adoration, while the Ring's betrayal of the Tarnhelm-masked Alberich to Loge and Wotan mimics its betrayal of Brünnhilde to the Tarnhelm-masked Siegfried.

By the same token, Brünnhilde's subsequent protest against her abduction to the Gibichungs was far more than just a melodramatic plot device. Throughout the *Ring* cycle, the power of the Ring increases in lockstep with the power of Brünnhilde's agency, and Act 2 of *Twilight of the Gods* marks the moment when these two powers become openly antagonistic.

Whereas Erda submissively implored Wotan to honor the terms of his feudal compact with the giants, Brünnhilde openly denounces Siegfried's violation of the marriage-contract to the assembled Gibichungs and their retainers, a.k.a. the nascent proletariat. Although her appeal fails to sway Siegfried, who is now almost completely under the baleful spell of the Ring, she succeeds in opening a channel of communication between herself, Hagen and Gunther.

In Act 2, Scene 5, all three seal an opportunistic alliance to ensure Siegfried's demise in a magnificent chorale involving three voices and one non-vocalized participant. These voices deliver their lines out of sync, emphasizing their contrasting motives, and only converge rhythmically at the very end, when Brünnhilde and Gunther swear on the existing collateral of their past and present marriage-contracts while Hagen swears on the future speculative acquisition of the Ring:

¹⁹⁷ Brünnhilde: "Denn selig aus ihm leuchtet mir Siegfrieds Liebe, / Siegfrieds Liebe!". Richard Wagner, *Twilight of the Gods*, Act I, Scene III. This is my translation.

¹⁹⁸ Brünnhilde: *etwas ausgedehnt*: "die Liebe ließe ich nie, mir nähmen nie sie die Liebe, / stürzt' auch in Trümmern / Walhalls strahlende Pracht!" Richard Wagner, *Twilight of the Gods*, Act 1, Scene 3. This is my translation.

Figure 17. Three-part chorus of conspirators against Siegfried (each row is sung simultaneously).¹⁹⁹

Brünnhilde	Gunther	Hagen
Eldritch avenging God!	Eldritch avenging God!	Elf-father, fallen Prince!
Vow-knower, oath-keeper!	Vow-knower, oath-keeper!	Night-Warden! Nibelung Lord!
Wotan! Turn to me!	Wotan! Turn to me!	Alberich! Pay heed to me!
Come forth the terrifying host of the gods	Come forth the terrifying host of the gods	Call forth anew the host of the Nibelungs
here to obey the oath of vengeance!	here to obey the oath of vengeance!	to obey you, lord of the ring!

What none of the three can foresee is that the non-vocal participant of the scene, namely the Ring, will formally grant them their respective wishes, but in a manner which completely inverts their respective intentions. During Act 3, Siegfried's death will transform Brünnhilde from Siegfried's predestined soulmate into the agent of his destruction, Gunther from Siegfried's blood-brother into his mortal foe, and Hagen from Alberich's filial offspring into a soulless supervillain.

The model for this catastrophic fulfillment was the closing spectacle of Act 2. This latter retrofitted the visual pageantry of the double wedding procession of Gunther-Brünnhilde and Siegfried-Gutrune with a sound-track connoting imminent doom. At one point the score features a passage of the most extreme dissonance, coinciding with the moment Brünnhilde shrinks back from the procession but is compelled to participate by Hagen. The score concludes with a none-too-convincing heroic flourish – a.k.a. the false or parodic reconciliation of the double wedding – followed by an ominous bass line which falls slowly downwards, as if to symbolize the limitless malevolence and growing power of the Ring.

This closing spectacle negated the industrial revanchism of the musical phantasmagoria by means of the industrial progressivism of an emancipated chromaticism. This latter expanded the musical leitmotif from a local representation of a specific character, mood or setting into a global principle of operatic construction. Rather than composing an entirely new set of leitmotifs for each *Ring* opera, Wagner created new variants of existing leitmotifs for each iteration, adding

¹⁹⁹ Gunther und Brünnhilde: "Allrauner rächender Gott! / Schwurwissender, Eideshort! / Wotan! Wende dich her!"

Hagen: "Albenvater, gefall'ner Fürst! / Nachthüter! Niblungenherr! / Alberich! Achte auf mich!"

Gunther und Brünnhilde: "Weise die schrecklich heilige Schaar, / hieher zu horchen dem Racheschwur!"

Hagen: "Weise von Neuem der Niblungen Schaar, / dir zu gehorchen, des Reifes Herrn!"

Richard Wagner, *Twilight of the Gods*, Act 2, Scene 5. This is my translation.

and subtracting coloratura as needed.

This addition and subtraction replaced the logic of tonal thematic development with the logic of musical spatialization. This is the genesis of the *Ring* cycle's strategy of continuous self-quotation, as the leitmotifs and dramatic events of each opera were cited, refashioned and spatialized by their sequels in what Warren Darcy called Wagner's strategy of dramaturgic parallelism.²⁰⁰ Elsewhere, Darcy has provided a skillful and nuanced reading of the immolation sequence of Act 3, Scene 3 in terms of its major and minor leitmotifs and tonal transitions, arguing that the ending signified Wagner's philosophy of the dissolution of all dissonance into the reharmonized cosmos of the Schopenhauerian Will.²⁰¹

We will complement Darcy's account by pointing out that the immolation sequence is literally only half of the story. Act 3 consisted of two narrative halves, the first of which was Guttrune's story and the second of which was Brünnhilde's. Each of these halves were further subdivided into four discrete episodes, which depicted their respective female leads rebelling against the prevailing order and setting literally everything on fire.

The firestarter of the first four episodes is Guttrune, a marginal character who suddenly asserts her dignity and ignites a fatal clash within the ranks of the Gibichungs. The arsonist of the second four episodes is Brünnhilde, only this is no longer the Brünnhilde who accepted the authority of Wotan, who permitted herself to be outranked by Siegfried, and who could not bring herself to relinquish the Ring in response to Waltraute's plea. This is the Brünnhilde who decisively relinquishes *all three at once*.

The first episode of the first half showcased Guttrune's anxious soliloquy over Siegfried's delayed return, while the second episode featured her outraged protest against his killing, triggering a fight between her brother Gunther and Hagen and the subsequent death of Gunther.

The third episode unveiled the true power of the Ring, or more precisely its limitless malevolence. Just when Hagen is on the brink of triumph, the Ring betrays him by causing Siegfried's undead ring-hand to rise of its own accord, warding off Hagen and freezing everyone in horror. The score plays the majestic descending triads of the "Twilight of the Gods" leitmotif, reminding us that the Ring has no masters, only servants. The fourth episode is Brünnhilde's interchange with Guttrune, wherein each recognizes the validity of the others' insurrection on the common grounds of the marriage-claim.

Conversely, the first episode of the Brünnhilde sequence showcases her meditation on the

²⁰⁰ "Strong dramatic parallelisms may also be observed between the last two acts of *Götterdämmerung* [Twilight of the Gods] and the last two scenes of *Das Rheingold* [The Rhine Gold]. Alberich appears at the opening of *Götterdämmerung* [Twilight of the Gods], act 2, just as he does at the beginning of *Das Rheingold* [The Rhine Gold], scene 3; the dwarf's lordship over the Nibelungs is reflected by Hagen's leadership of the Gibichung vassals. The altars to Wotan, Fricka, and Donner that brood over Gibichung Hall remind us that we are viewing a mortal reenactment of events that originally involved the gods. The fatal combat between the half-brothers Gunther and Hagen recalls that between the brothers Fasolt and Fafner; Erda's intervention at the critical moment (preventing Wotan from keeping the ring) is paralleled by Brünnhilde's intervention (preventing Hagen from seizing the ring). The list is endless." Warren J. Darcy (1986). "The Pessimism of the Ring." *The Opera Quarterly* 4:2 (35).

²⁰¹ Warren J. Darcy (1994). "The Metaphysics of Annihilation: Wagner, Schopenhauer, and the Ending of the *Ring*." *Music Theory Spectrum* 16:1 (36-43).

finality of Siegfried's death, the second on Brünnhilde's mythological appeal to the gods and Rhine-maidens, the third to Brünnhilde's immolation, and the fourth on the destruction of the realm of the Gibichungs by flood and the annihilation of Valhalla by fire (the fate of the Ring is more ambiguous, and connected to a musical transformation we will identify in just a moment).

Putting all the pieces together, the Gutrune sequence symbolized the insurrection of the partly waged domestic workers and women of the semi-feudal household, precisely where the Brünnhilde sequence symbolized the insurrection of the fully waged laborers of Global Steam.²⁰² The two halves of Act 3 are mapped out below:

Figure 18. Dramatic and musical events in Act 3.²⁰³

Act 3, first half events	Act 3, first half musical leitmotifs	Act 3, second half events	Act 3, second half musical leitmotifs
Gutrune's soliloquy	Gutrune, Siegfried, Love's Greeting	Brünnhilde orders pyre to be built, grieves for Siegfried	Funeral Pyre, Magic Fire, Siegfried, Love's Greeting, Sword
Gutrune's protest, Hagen kills Gunther	Siegfried, Hagen, Curse	Brünnhilde addresses the gods and Rhine-maidens	Fate, Valhalla, Curse, Funeral Pyre, Rhine, Ring, Curse
Unveiling of Ring's power, enter Brünnhilde	Twilight of the Gods	Brünnhilde's closing words and immolation	Magic Fire, Twilight of the Gods, Valhalla, Spear, Valkyries, Redemption, Siegfried
Solidarity between Brünnhilde and Gutrune	Gutrune	Immolation of Gibichung hall and drowning of Hagen, inundation of Rhine and immolation of Valhalla	Magic Fire, Rhine-maidens, Curse, Rhine-maidens, Valhalla, Siegfried, Twilight of the Gods, Redemption

One of Wagner's most remarkable accomplishments was the revolutionary musical synthesis which occurs at the very end of Scene 3, in the primarily instrumental passage

²⁰² This strategy was invented by the ninth book of Elizabeth Barrett-Browning's blank verse epic *Aurora Leigh* (1856), wherein Marian symbolized the partly waged reader and Aurora symbolized the fully waged laboring writer.

²⁰³ The leitmotifs listed in the rightmost column are extracted from Darcy's analysis of the immolation sequence. Darcy's parts 1 and 2 correspond to the first episode, 3 and 4 to the second, 5 and 6 to the third, and 7 and 8 the fourth. See: Warren J. Darcy, "The Metaphysics of Annihilation: Wagner, Schopenhauer, and the Ending of the *Ring*" (12).

following Brünnhilde's final lines. In all of Wagner's previous works, leitmotifs supplemented the harmonic synthesis of the First Viennese School, but did not fundamentally diverge from such, either. The diminished seventh chords of *Tristan and Isolde* yoked the unruly forces of chromaticism into the service of thematic development, just as the harsh dissonances of the Neapolitan chords scattered throughout the first three *Ring* operas reinforced rather than undermined the Valhalla of a restored tonality.

By contrast, the conclusion of Scene 3 depicted the moment that the industrial energies of chromaticism burst the fetters of tonality. After Brünnhilde rides into the flames, the sound-track portrays the Rhine overflowing its banks, as the Rhine-maidens arrive to reclaim their golden treasure. The Ring's final act of malevolence is to incite Hagen to desperately lunge into the flood ("Back from the Ring!" he cries to the Rhine-maidens, succeeding only in consigning himself to a watery doom). Hagen's demise is accompanied by a final citation of the Curse leitmotif, which is broken off in mid-course by the musical effect of a high-hat – a.k.a. the cinematic sound-effect of the splash of a body falling into the water.

The ending of the Curse triggers the final citation of the Valhalla leitmotif into the single most grandiose and spectacular of all its incarnations. This version does more than integrate some of the most extreme dissonances of the *Ring* cycle into the harmonic material. Instead of employing techniques of musical repetition to signify movement, the musical material is dynamized and begins to move of its own accord, like a coal-fired engine pulling a train.

From this moment onwards, leitmotifs no longer complement or supplement the harmonic material. They *are* the harmonic material. The leitmotifs of the Rhine-maidens, of Valhalla, of Siegfried, and of Redemption all converge into an overarching mega-motif, which concludes by quoting from the final cadence of *Tristan and Isolde*.

The result is incomparably more grand than anything the Valhalla leitmotif could have depicted, infinitely more heroic than anything the Siegfried leitmotif could have portrayed, and infinitely more touching than the Redemption motif could have expressed by itself. It forms the shimmering prototype of decades of industrial musical modernisms to come: a musical whole which is greater than the sum of its parts, because it consciously renounces the sacrifice of dissonance to the bad universality of compulsory harmony.²⁰⁴ This musical whole is not the end of the world, but just its beginning.²⁰⁵

As part of this beginning, the finale of the *Ring* invented the category of the feel-good franchise ending. This latter was relayed by the three proto-cinematic scenes accompanying the instrumental finale. The first of these was the spectacle of Brünnhilde on horseback, disappearing into the flames which consume the hall of the Gibichungs. These flames are subsequently doused by the rising waters of the Rhine, generating a vast cloud of steam. The second scene portrayed the Rhine-flood, Hagen's demise therein, and a brief glimpse of the

²⁰⁴ Wagner will spatialize this renunciation in the ending of Act 1, Scene 1 of *Parsifal*, namely the moment Gurnemanz sings "Here time becomes space". We will explore the profoundly subversive implications of this musical spatialization in Chapter 8.

²⁰⁵ "The end of the world in the *Ring* is simultaneously a 'happy end' [in English]." ["Der Weltuntergang am Ende des Rings ist zugleich ein Happy-End."] Theodor W. Adorno. "In Search of Wagner" [Versuch Über Wagner.] *Collected Works 13* [Gesammelte Schriften 13]. Frankfurt am Main: Suhrkamp Verlag, 1971 (139).

Rhine-maidens playing merrily with the Ring. The third scene highlights the immolation of the gods, Valkyries and heroes of Valhalla into bright flame.

These three scenes constitute a classic Hegelian triad wherein Brünnhilde's fiery thesis (the Napoleonic hero on horseback, refunctioned into the avatar of industrial-era insurrection) is negated by the antithetical flood which douses the fire and defeats Hagen, and then both terms are sublated into the spectacle of a static panorama dynamized into a field of flames – the visual analogue of the *Ring's* leitmotifs converging into the concluding mega-motif.

Just as Hegel's location in early 19th century Prussia, a semi-peripheral polity with a large internal agrarian periphery, prevented him from rising to the level of the concrete negation and compelled him to pass off a copy of the thesis as its supposed sublation, so too was Wagner's visual triad unable to overcome the German empire's semi-peripheral position vis-a-vis its five core competitors (Belgium, Britain, France, the Netherlands and the United States). Valhalla's immolation was the cyclical repetition of Brünnhilde's immolation, as opposed to the fully-realized national imperial spectacles typical of Jules Verne and Emil Zola.

That said, *Twilight of the Gods* did achieve something no other operatic work of its time could match. This was its critique of national imperial mythos.²⁰⁶ Put bluntly, Brünnhilde's immolation and the return of the Ring is not quite the Wagnerian rewriting of the British colonial trope of sati (widow-burning) one might assume it to be. The more appropriate parallel is to the ending of Collins' *The Moonstone*, wherein a precious gem stolen by an officer of the East India Company elicits a frenzy of murder and mayhem in the imperial metropole, before it is returned to South Asia by a group of South Asian conspirators.²⁰⁷

Collins' moonstone and Wagner's Ring were the twin avatars of dynastic-mercantile adornment transformed into quasi-sentient agents of capitalist expansionism. They expressed the cultural logic of the imperial expansionism of Global Steam, precisely where Nietzsche's notion of the every-person [Übermensch]²⁰⁸ expressed its political logic and Marx's diagnosis of British capital expressed its economic logic.

But whereas Wilkes' location in the core polity of Britain enabled him to envision the restitution of colonial plunder to the colonies from the transcendental perspective of the London banker – the zero-hour of the anti-colonial nationalisms of the global periphery – Wagner's location in the continental European semi-periphery enabled him to grasp the immanent pole of the same contradiction. The radical sting of Brünnhilde's final act is that she *renounces the marriage ring*.

Her disappearance into the flames is not the last gasp of the intermediary state, but the inaugural rebellion of the fully waged workers who would construct the industrial unions, socialist parties and plebian consumerisms of Global Steam. Rather than witnessing the end of

²⁰⁶ We will see in Volume 7 how this anti-imperial critique was rediscovered seventy-three years later by J.R.R. Tolkien's *Lord of the Rings* trilogy.

²⁰⁷ While Collins miscast these conspirators as Hindu religious devotees, their true social model can be found in the overlapping African, Caribbean and Asian diasporic networks of partly waged and fully waged colonial laborers who would establish the anti-colonial nationalisms of the 1880s.

²⁰⁸ While the term "Übermensch" is often translated as Overman or Superman, the prefix "über" has primarily spatial and not hierarchical connotations, e.g. "überall" means everywhere. "Universal person" or "all rounder" might come closest to Nietzsche's plebian intent.

the world, Brünnhilde signals the beginning of the class struggles of the post-1860 proletariat, who were approximately one quarter of the planet in 1874.²⁰⁹ The bravura finale of *Twilight of the Gods* was the musical telegram announcing the emergence of this proletariat as a co-actor of world history.

²⁰⁹ Žižek was the first to perceive this: “And Wagner’s genius was to propose a woman as the agent of this political love, of the love binding the emancipatory collective, in clear contrast to the standard ideology (to which he usually submits) which reserves the collective domain of political activity to men and constrains women to intimate privacy. Brünnhilde from the end of the Ring belongs to the same series as Joan of Arc: a woman leading the emancipatory non-patriarchal collective.” Slavoj Žižek. “Afterword”. In: Alain Badiou. *Five Lessons On Wagner*. Translated by Susan Spitzer. London: Verso, 2010 (223).

Chapter 6

Immiseration of the Periphery

Where the empires of the second supercycle and Global Cotton committed the horrors of the Blood Islands (the cotton, jute, opium, sugar and tobacco plantations of the Caribbean which annihilated the lives of millions of wageless laborers for profit) and the Blood Companies (the looting of vast swathes of Africa, the Americas and Asia by state-chartered corporations), the empires of Global Steam perpetrated continental famine-genocides.

These latter were not the result of distribution bottlenecks or crop failures. They were the inexorable outcome of the post-1860 agro-industrialization of the global periphery. While this agro-industrialization increased world agricultural output and enriched a tiny class of imperial elites and compradors, it also inflicted unprecedented misery on subsistence farmers and devastated forests, wetlands and watersheds. “All told,” observed Corey Ross, “the expansion of agricultural land in colonial Asia claimed around 62 million hectares of grassland, desert, forest, and swamp between 1880 and 1950.”²¹⁰ This was an amount equal to 40% of total US arable land, 36% of the European Union’s arable land, and 52% of China’s arable land in 2016.²¹¹

Agro-industrialization was accompanied by an equally momentous political transformation. Hundreds of millions of subsistence farmers and craftworkers previously governed by a welter of dynastic, feudal and kinship-based social systems were forcibly conscripted into empires of capital and national imperial capitalisms. These latter were organized via planetary networks of steamships, railroads, canals, telegraphs and undersea cables.

This violent integration fundamentally transformed the nature of global unequal exchange. Whereas the industrial despotisms of Global Cotton compelled wageless laborers to produce primary commodities (unprocessed agricultural and mineral products) in exchange for textiles produced by fully waged laborers in the core, the despotic industrialisms of Global Steam compelled the subsistence farmers and partly waged laborers of the periphery (sharecroppers and rural debt peons) to produce primary commodities in exchange for industrial consumer goods and machinery produced by the fully waged laborers of the core and semi-peripheries. These despotic industrialisms also extracted the surplus of partly waged and wageless domestic laborers who were members of joint families, hieratic bodies, lineage associations, and other extended kinship structures – e.g. wives, in-laws, children and domestic servants. Last but not least, these industrialisms extracted and monopolized the scientific and technical knowledge of the peoples and cultures of the periphery.²¹²

²¹⁰ Corey Ross. *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World*. Oxford: University of Oxford, 2017 (318).

²¹¹ World Bank and Eurostat data from 2016. <https://data.worldbank.org/indicator/AG.LND.ARBL.HA>. https://ec.europa.eu/eurostat/statistics-explained/index.php/Farms_and_farmland_in_the_European_Union_-_statistics.

²¹² Part of this surplus consisted of the scientific knowledge of the peoples and cultures of the global

The main economic engine of the despotic industrialism of the periphery was the export of agricultural and mineral commodities to metropolitan markets, generating trade surpluses which were siphoned off by imperial and comprador elites.²¹³ The single largest of these surpluses was extracted by the British hegemon, in a manner described by Utsa and Prabhat Patnaik:

The total (£428.58 million) of commodity export surplus earnings over the period 1871 to 1901 was identical with the total expenditure in England charged to Indian revenues (£428.93), as Table 9.2 shows. It is important to note that this surplus, defrayed through Council bills, is the balance of merchandise trade plus the balance of commodity gold flows. Additional financial gold flows also occurred that belong in the capital account. Figure 9.2, depicting these two series, makes clear that India's export surplus earnings fluctuated greatly depending on internal factors and on world market conditions, but the sterling expenditure by England using these earnings rose much more steadily. This was because, to deal with fluctuations of trade, a form of buffer-stock operation with regard to currency was carried out, of sterling in England and of rupees in India. If India's net external earnings rose sharply in a particular year, in excess of spending required by England, then the sterling balances maintained by the Secretary of State were added to, being drawn down in other years when the opposite situation prevailed. In such a case of sharp rise in external earnings, at the Indian end there would be an unusually large value of Council bills tendered and thus excess demand for rupees, so in addition to the bulk of the planned payment of the bills out of the budget, the paper currency reserve (and more rarely the gold standard reserve) at the margin would be drawn down, being replenished in other years of a decline of India's external earnings and hence slackening of demand for rupees.

The new arrangement that operated from 1861 thus retained the basic feature of the earlier direct

periphery monopolized by imperial elites. Clive Dewey has noted the signal importance of the British Indian Civil Service, the predecessor of independent India's IAS (Indian Administrative Service), to the fields of anthropology, cultural studies, history, linguistics and sociology: "Their collective works — the settlement reports, the gazetteers, the censuses, the directories of castes and tribes, the linguistic survey, the more important commissions — made immense contributions to the western understanding of South Asia: they were 'monuments more lasting than brass'. There are no indigenous substitutes for the great bulk of the data they collected or the categories they evolved; subsequent inquiries, in field after field, have begun where they left off. A handful of outstanding works, written in the interstices of busy official careers, rank among the more impressive intellectual achievements of a century of discovery. Sir Alfred Lyall's *Asiatic Studies* (1884) can stand for them all. His articles on the origin of religious cults and the nature of Indian polities were fifty years ahead of their time. They occupied a different mental universe from Max Müller's philological fantasies or Sir James Frazer's fairy tales. In their reliance on first-hand observation, in their exploration of the functions Indian institutions fulfilled, in their delicate dissection of the interplay between mentalities and behaviour, they might have been written by a student of Evans-Pritchard out of Levi-Strauss." Clive Dewey. *Anglo-Indian Attitudes: the Mind of the Indian Civil Service*. London: Hambledon Press, 1993 (6-7).

²¹³ A number of exchange banks were established to intermediate this surplus, the most important of which were the Chartered Bank of India, Australia and China (1853), the National Bank of India (1863), the Hong Kong and Shanghai Banking Corporation (1864), the Mercantile Bank of India (1893), and the Eastern Bank (1910).

system under the Company: *the merchandise export surplus continued to be “paid” to its colonized producers out of their own taxes, and hence was not paid for at all* [italics in original]. It continued to be obtained gratis by the metropolis, with the global earnings from it, the gold and foreign exchange, being retained by the metropolis.²¹⁴

The second largest of these surpluses was siphoned off by the Dutch empire from colonial Indonesia’s commodity exports, which Alec Gordon has estimated at somewhere between \$400 billion to \$5 trillion in 2012 dollars for the period between 1878 and 1941.²¹⁵ The third largest was most likely that of the French empire, given its extensive holdings in Africa and Southeast Asia (e.g. colonial Vietnam exported an average of 809,000 tons of rice from 1899-1903 and an average of 1.582 million tons during 1933-1937),²¹⁶ although scholars have not yet proposed a numerical estimate of the total drain. The fourth largest was the Belgian empire, whose despoliation of the Congo has been summarized by Frans Buelens and Stefaan Marysse as follows:

Leopold II used the growing income from the Congo to erect a number of impressive buildings in Belgium. Thanks to the enormous amounts of rubber, ivory, and copal coming from the Congo, the Antwerp harbor in Belgium went through a rapid process of international expansion, together with the shipping company Compagnie Belge Maritime du Congo and the shipbuilding company Cockerill Yards (in Hoboken, near Antwerp). The selling of ivory in Antwerp went from 46,500 kilograms (in 1889) up to 336,000 kilograms (in 1900), making it a more important market place than London for the selling of ivory at the time. The same held true for the selling of rubber, where imports went from 4,600 kilograms (1889) in Antwerp up to 5.8 million kilograms (1901), whereas London imported only one million kilograms in 1901. In the same manner, Leopold II granted monopoly exploitation in 1901 to the Compagnie du Kasai for the rich natural resources of Kasai, in the central south of the Congo, near Angola and west of Katanga.²¹⁷

The one other predatory drain which should be mentioned here is one of the most difficult to quantify, namely that of Qing China’s comprador elites. Hao Yen-ping estimated the total profits of these elites from all sources averaged 10.2 million taels per annum between 1842 and 1894. This was a comparatively small figure when compared to the central government’s annual revenues of 89 million taels in the 1890s and 103 million during the 1900s, and the Qing gentry’s

²¹⁴ Utsa Patnaik and Prabhat Patnaik. *Capital and Imperialism: Theory, History, and the Present*. New York: Monthly Review Press, 2021 (141-142).

²¹⁵ Alec Gordon. “How Big was Indonesia’s “Real” Colonial Surplus in 1878–1941?” *Journal of Contemporary Asia* 42:4 (560-580).

²¹⁶ Charles Robequain. *The Economic Development of French Indochina*. Translated by Isabel A. Ward. London: Oxford University Press, 1944 (308)

²¹⁷ Frans Buelens and Stefaan Marysse (2009). “Returns on investment during the colonial era: the case of the Belgian Congo.” *Economic History Review* 62:S1 (140).

surplus of 645 million taels per annum, but did account for between 5% and 10% of Qing China's total external trade during this period.²¹⁸ These compradors played a key role in fostering the neocolonial expansion of Qing China's textile industry.

Far from being the result of Smith's invisible hand, the extraction of colonial surpluses required a permanent and massive occupation army of colonial and neocolonial administrators, clerks, soldiers and merchants. One of the most characteristic features of this occupation was imperial extraterritoriality, i.e. the right of citizens of the world empires and a few of the most powerful polities of the semi-periphery to be governed solely by the laws of their own polities, and not by those of the peripheral or neocolonial polities they traveled or worked in.

For example, British citizens were granted extraterritoriality by the Ottoman empire from 1825-1923, by Iran from 1825-1928, and by Thailand from 1855-1937.²¹⁹ Similarly, Japan was compelled to grant extraterritoriality to the citizens of the US (1854-1894), Russia (1855-1895) (though it should be noted that the Russian empire also granted extraterritoriality to Japanese citizens within the Russian empire during this period, and that both empires mutually rescinded extraterritoriality in 1895), Britain (1856-1899), the Netherlands (1856-1896), France (1858-1896), Germany (1861-1896), Switzerland (1864-1896), Belgium (1866-1896), Italy (1866-1894), Denmark (1867-1895), Spain (1868-1897), Sweden-Norway (1868-1896), Austria (1869-1896) and Hawaii (1871-1894).²²⁰ For its part, Qing and Republican China granted extraterritoriality to the citizens of Britain (1843-1943), France (1844-1946), United States (1844-1943), Norway (1847-1943), Sweden (1847-1945), Denmark (1863-1946), the Netherlands (1863-1945), Belgium (1865-1943), Italy (1866-1947), Japan (1871-1943), Portugal (1887-1947), Germany (until 1917), Austria (until 1917), and Russia (1851-1924). By 1918, the list of polities with extraterritoriality in China also included Brazil, Mexico, Peru and Switzerland.²²¹

From a planetary perspective, the despotic industrialisms of the periphery took two main forms, namely hydro-despotisms which extracted profits from imperial canals, waterways and dams, and agro-mineral despotisms which extracted profits from agriculture and geological deposits. The textbook example of hydro-despotism was imposed on the Punjabi and Sindh regions of British South Asia via the Northern India Canal and Drainage Act of 1873. This led to a significant expansion of wheat farming in the region, the distant antecedent of the post-1973 Green Revolution:

In the 1880s the British began building a vast system of permanent weirs and perennial canals designed to convey a reliable year-round supply of water to millions of hectares of the western Punjab and Sind. By the early twentieth century it had grown into one of the largest irrigation systems in the world, covering

²¹⁸ Hao Yen-P'ing. *The Comprador in Nineteenth Century China: Bridge between East and West*. Cambridge: Harvard University Press, 1970 (104-105).

²¹⁹ Turan Kayaoglu. *Legal Imperialism: Sovereignty and Extraterritoriality in Japan, the Ottoman Empire, and China*. Cambridge: Cambridge University Press, 2010 (6).

²²⁰ Turan Kayaoglu, *Legal Imperialism* (67).

²²¹ Mariya Tait Slys. *Exporting Legality: The Rise and Fall of Extraterritorial Jurisdiction in the Ottoman Empire and China*. Geneva: Ecahiers de l'Institut, 2014. <http://books.openedition.org/iheid/788>.

roughly 5 million hectares by 1918 and around 7.5 million hectares (an area slightly larger than Ireland) by the mid-1940s.²²²

This hydro-despotism enriched London financiers, Punjabi and Sindh compradors and landed elites, while criminalizing the everyday survival strategies of subsistence farmers.²²³ Although total grain output increased, average productivity stagnated and the Punjab and Sindh regions did not develop agricultural equipment and food processing industries comparable to those of late 19th century Argentina, Australia, Canada and the United States. As Akhtar Husain Siddiqi observed, "...the development of [Punjabi] agriculture in this period [1850-1900] implied no scientific transformation of local farming techniques, but merely the superimposition of large-scale public works on small and diversified land holdings."²²⁴

This hydro-despotism was applied to other regions of the British empire, most notably the Nile River delta of Egypt, which became one of the British empire's staple cotton belts:

In Lower Egypt, the completion of the Delta Barrage in 1891 raised summer water levels and extended cotton cultivation across the entire Delta. Further upstream, the Assiut Barrage (1903) and the first Aswan Dam (1902) extended year-round water supplies to much of Middle and Upper Egypt. By the eve of the First World War over 1.6 million hectares had been converted to perennial irrigation, leaving only 522,000 hectares under traditional basin irrigation. Cotton was not, of course, the only cultivar grown on these lands: maize, sugar cane, and rice also became important summer crops. But it was very much the driving force behind the changes, and accounted for over three-quarters of the total summer acreage in the early 1900s. It was less a matter of irrigation promoting cotton cultivation than the other way around. As contemporaries clearly recognized, 'the increasingly important role of cotton in Egyptian agriculture is the cause of the unremitting advance of irrigation'.²²⁵

The rise of this cotton belt created a tiny comprador elite of wealthy landowners – by 1888, the

²²² Corey Ross, *Ecology and Power in the Age of Empire* (316).

²²³ "[Article] 73. Power to arrest without warrant.— Any person in charge of or employed upon any canal or drainage-work may remove from the lands or buildings belonging thereto, or may take into custody without a warrant and take forthwith before a Magistrate or to the nearest police station, to be dealt with according to law, any person who, within his view, commits any of the following offences:- (1) willfully damages or obstructs any canal or drainage-work; (2) without proper authority interferes with the supply or flow of water in or from any canal or drainage-work, or in any river or stream, so as to endanger, damage or render less useful any canal or drainage-work." <http://extwprlegsy1.fao.org/docs/pdf/pak64507.pdf>

²²⁴ Akhtar Husain Siddiqi (1986). "Agricultural Changes in Punjab in the Nineteenth Century: 1850-1900." *GeoJournal* 12:1 (54).

²²⁵ Corey Ross. *Ecology and Power in the Age of Empire: Europe and the Transformation of the Tropical World*. Oxford: University of Oxford, 2017 (37).

top one percent of Egyptians owned approximately two-fifths of arable land²²⁶ – along with a vast pool of farmers who sank into debt peonage. Because cotton plants absorb large amounts of nitrogen and potassium, the cotton boom exhausted the natural fertility of the soil, putting additional pressure on rural populations at chronic risk of famine. Cotton cultivation also led to massive overirrigation, which triggered salinization (the deposition of excessive salt) as well as epidemic levels of schistosomiasis, a deadly parasitic worm infection spread by freshwater snails dwelling in stagnant water.

By 1975, ninety-three years after the British colonization of Egypt and thirty-three years after Egypt's true independence, anywhere between 25% and 60% of the rural population suffered from excessive salinity, while a 1992 survey estimated salinization threatened one-third of all arable land.²²⁷ As late as 1983, two-fifths of Egyptians suffered from waterborne schistosomiasis, a number reduced by public health campaigns to 11.9% by 1996 and 0.6% by 2008.²²⁸

By a coincidence of geography, Egypt's Sinai isthmus became one of the two premier sites of French hydro-despotism, namely the 1859-1869 Suez canal (the other was Indochina, as we shall see in just a moment). The canal began as a classic mid-19th century joint stock speculation under the auspices of Ferdinand Lesseps. However, the staggering financial cost of the project required the state backing of France's Second Empire, very much as the later Panama Canal required the backing of the US empire.

The technical demands of the Suez canal spurred the invention of mechanized digging and dredging machines by French engineers Paul Borel and Alexandre Lavalley. "For the first phase of its construction," observed Zachary Karabell, "it [the Suez canal] was a reflection of the past; during the second, it became a harbinger of the future."²²⁹ This future consisted of the mechanization of excavation, construction and dredging by coal-powered steam engines:

Train tracks had to be configured to accommodate the machines. Some dredgers would be anchored on barges and used to remove the mud and sand from the bottom of the canal, whereas others would be placed on tracks along the banks of the canal. The angles for the conveyor belts and the depth of

²²⁶ "In 1888, six years after the British occupation, the top 1 per cent of Egyptian landowners owned over two-fifths of the land, while the bottom 80 per cent held only one-fifth." Corey Ross, *Ecology and Power in the Age of Empire* (38).

²²⁷ "An early soil survey indicated that the percentages of salt-affected soils relative to total cultivated lands was 60% in the Lower Delta, 25% in the Middle Delta, 20% in the Upper Delta and Middle Egypt, and 25% in the Upper Egypt (Aboukhaled et al., 1975). A rather recent inventory concluded that almost 35% of the agricultural lands (ca. 1 Mha) in Egypt suffer from salinity, wherein the electrical conductivity of the extract from saturated soil is higher than 4 dS/m (GARE, 1992)." Tarek H.S. Kotba, Tsugihiko Watanabeb, Yoshihiko Oginob, and Kenneth K. Tanjic (2000). "Soil salinization in the Nile Delta and related policy issues in Egypt." *Agricultural Water Management* 43 (248).

²²⁸ Ahmed Abdelhalim Yameny (2017). "The evolving schistosomiasis agenda 2017-2020 in Egypt: Moving from control toward final elimination." *Journal of Bioscience and Applied Research* 3:2 (50).

²²⁹ Zachary Karabell. *Parting the Desert: The Creation of the Suez Canal*. New York: Alfred A. Knopf, 2003 (156).

the elevators would differ, depending on where they were used. The amount of weight each bucket could carry depended on the consistency of the earth, which varied greatly throughout the isthmus.

The result was that more than a dozen different types of machines had to be designed, constructed, and then installed. Many of these came in four, five, or six different sizes. The initial prototype often went through several models. Once they were actually deployed, the new machines were subject to tinkering or redesigns. Some of that could be done in the workshops at the isthmus stations, but some of the customization had to be done in France.²³⁰

Thanks to these devices, the annual 6.7 million cubic yards excavated by hand from 1861 to 1864 increased to an annual 19.6 million cubic yards excavated by machine from 1865 to 1869.²³¹ The construction zone became one of the largest industrial sites on the planet, employing a workforce which increased from 10,000 in 1865 to a peak of 34,000 in 1868.²³² Given Egypt's 1882 population census of 6.7 million, this latter would have been the equivalent of a workforce of more than half a million vis-a-vis Egypt's population of 102 million in 2020.

The canal also ushered in the age of industrial-grade corporate advertising, via a visually stunning diorama at the Paris world exposition of 1867, which received 11 million visitors from 42 of today's polities. This diorama was created by the staffers of the Paris Opera in tandem with a canal architect, anticipating the Hollywood-Pentagon co-productions of the 20th century:

Though primitive by the later standard of motion pictures, the diorama manipulated light and three-dimensional images to convey an illusion of watching the canal take shape in real time. Devised at great expense by the decorator of the new Opera in Paris in collaboration with one of the company's architects, the diorama was a collage of painting, photographs, and figurines. It filled a semicircle, from the Mediterranean on the far left to the Red Sea on the right. It depicted villages, machines, and cities along with the canal itself, from the harbor at the northern entrance to the lakes along the way. There were figurines of workers, dredgers, buildings, and ships. Visitors emerged from the exhibit exhilarated at the verisimilitude and claimed that they felt transported from the busy parks of Paris to the bustling Isthmus of Suez.²³³

The canal was unquestionably a technological and logistical triumph. Between 1870 and the turn of the 20th century, traffic through the Suez canal rose by sevenfold, the number of passengers rose tenfold, and total tons of capacity rose twenty-two times over:

²³⁰ Zachary Karabell, *Parting the Desert: The Creation of the Suez Canal*. New York: Alfred A. Knopf, 2003 (209).

²³¹ "Altogether, 78,500,000 cubic yards were dug by machine in 1865-69, compared to 20,000,000 by hand from 1861 to 1864." Daniel R. Headrick, *The Tools of Empire: Technology and European Imperialism in the Nineteenth Century*. New York: Oxford University Press, 1981 (155).

²³² Zachary Karabell, *Parting the Desert* (234).

²³³ Zachary Karabell, *Parting the Desert* (226).

Figure 19. Annual Suez Canal Traffic, 1870-1900.²³⁴

Year	Number of Ships	Tons of Capacity	Passengers
1870	486	436,609	26,578
1875	1,494	2,009,984	n/a
1880	2,026	3,057,422	101,551
1885	3,624	6,335,753	n/a
1890	3,389	6,890,094	n/a
1895	3,434	8,448,383	n/a
1900	3,441	9,738,152	282,511

By the same token, the canal was only a middling economic success. Due to the high cost of construction and the necessity for regular maintenance, it took decades for the canal to turn a profit. Lesseps would later overreach himself in the attempt to construct a Panama canal after 1881, a project which failed to attract state patronage and went bankrupt in 1889. While the Suez canal was a short-term prestige boost for the French empire, its long-term effect was to convince the British authorities to transform the canal into a joint Anglo-French consortium in 1876, and later to quash the 1879-1882 Urabi revolt by the full-scale colonization of Egypt in 1882.

The other iconic example of French hydro-despotism was its industrial dredging campaign in the Mekong River delta of colonized Cambodia, Laos and Vietnam. This campaign began in earnest after 1893, and would eventually create 1,300 kilometers of canals by 1939, linking innumerable rivers to create a network of 2,000 kilometers of navigable waterways.²³⁵

This network transformed the Mekong delta from a hinterland into the centerpiece of French colonial rule, helping to boost rice exports from 284,000 tons in 1880 to 1.5 million tons in the 1930s.²³⁶ Between 1900 and 1930, French dredgers removed 165 million cubic meters of mud and soil, making the canalization of the delta the third largest earthmoving exercise in history, just behind the Suez and Panama canals.²³⁷ These dredging crews were some of the first international workforces created in the rural interior of the Indochinese region, with equipment operation reserved for the colonizers and manual labor reserved for the colonized:

²³⁴ Daniel R. Headrick, *The Tools of Empire* (155). Valeska Huber. *Channeling Mobilities: Migration and Globalisation in the Suez Canal Region and Beyond, 1869–1914*. Cambridge: Cambridge University Press, 2013 (43).

²³⁵ Charles Robequain, *The Economic Development of French Indochina* (111).

²³⁶ “From 1880 to the 1930s the combined paddy area of Cochin China rose from 522,000 to 2.2 million hectares, with rice exports growing even faster from 284,000 to over 1.5 million tons.” Corey Ross, *Ecology and Power in the Age of Empire* (314).

²³⁷ Corey Ross, *Ecology and Power in the Age of Empire* (313).

Whereas older canal projects involved negotiations with local officials who gathered thousands of laborers to dig the channels, the machine-dredged projects required a smaller, traveling coterie of about a hundred men. More akin to colonial militias than *corvée* laborers, they traveled for long distances with the dredge as salaried employees of the French contractor. A list of one dredge's crew in 1908 included a project chief (European), a dredge captain (European), a mechanic (European), eight guards, thirty-nine laborers to clear land ahead of the dredge, twenty-seven laborers to work around the dredge, ten laborers to level tailings in the rear, and five public-works laborers to level a towpath along one of the canal's banks. In the muddy, deforested pathways trailing the dredges, these motley crews of men were the first, temporary inhabitants of the leveled spaces along the new waterway. While the surrounding landscape varied from villages and fields to swamp forests and endless marshes, the scene along the border of a new canal varied little from one place to another. The dredge distributed its tailings on either side in large slices of clay. Lodged in the sulfurous clay were all manner of broken artifacts—bones, bricks, tree stumps, and so on. Given the frequent heavy rains, these surfaces were treacherously slippery. The work crews did not sleep aboard the dredge but atop these muddy banks in lean-tos. Each day, work lasted for a grueling nineteen hours, except on Sundays and during frequent stops for repairs.²³⁸

Whereas the British and French hydro-despotisms were concentrated geographically in the four major regions and river deltas of the Nile, the Sinai, the Punjab and the Mekong, and focused primarily on acreages of cotton, wheat and rice, the agro-mineral despotisms of Global Steam's periphery were organized around a far broader range of commodities and territories.

The largest of these agro-mineral despotisms produced coal and jute in British Bengal (present-day West Bengal and Bangladesh), cocoa in British West Africa, cotton in British Gujarat, Russian Central Asia and Japanese China, tea and opium in British South Asia, petroleum in Russian Azerbaijan and Dutch Indonesia, rice in British Myanmar and French Vietnam, rubber in the Belgian Congo, British South Asia and Dutch Indonesia, and tin in British Malaysia. All of these despotic industrialisms relied on strategies of debt peonage vis-a-vis subsistence farmers and craftworkers, and semi-coercive rather than fully coercive systems of partly waged labor. Tariq Omar Ali describes how the jute farmers of Bengal were locked into long-term immiseration:

The expansion of jute production during the 1890s was also accompanied by a sharp increase in peasant indebtedness. Jute was a more expensive crop to cultivate than rice and required more hired labor in thinning out the fields during April and May and during harvest. Further, while laborers working on the rice harvest were often paid in kind, jute workers had to be paid in cash. Jute production was financed by cash loans to be repaid in cash after the fibers were sold. The substitution of commercial grain with commercial fiber hence entailed increasing dependence on loans and was a critical element in the rise of debt and interest as the major mechanism of expropriating peasant surplus.

Peasant indebtedness did not, however, reach alarming proportions during the 1890s, as they would during the expansion after 1905. Fiber had not yet compromised food security for most peasant

²³⁸ David Biggs. *Quagmire: Nation-building and Nature in the Mekong Delta*. Seattle: University of Washington Press, 2010 (44-45).

households, and much of the debt incurred was to smoothen household subsistence during periods of seasonal scarcity. Even as the agrarian frontier reached its limits and peasant smallholdings fragmented, most jute cultivators were able to extend jute cultivation without compromising subsistence rice production. They did so by increasingly double-cropping jute and aman on lowlands, by transplanting aman seedlings onto farms just cleared of jute. Double-cropping entailed considerably harder work, particularly during September and October, when jute was harvested, aman seedbeds prepared, and aman seedlings transplanted on the same piece of land. This extra labor, however, produced diminished returns: jute plants depleted the soil of nutrients and aman yields were drastically reduced when planted onto lands just cleared of jute. The 1890s thus witnessed the beginnings of a long decline in the productivity of agrarian labor in the delta, which would only reverse with the arrival of green revolution technologies in the 1970s.²³⁹

Since many subsistence farmers preferred to stay on their land rather than work in the jute mills, large numbers of migrant laborers were recruited from the non-jute-growing regions of Bengal and the present-day regions of Bihar, Uttar Pradesh and Odisha. They were squeezed dry by systems of indentured labor, as well as local usurers.²⁴⁰

The jute mills were also characterized by the widespread use of child labor, e.g. of the 230,627 workers employed by the jute industry in 1914, one-ninth (11.3%) were children. Child employment was rampant in the mills until 1930, after which it was largely abolished.²⁴¹

The low cost of this labor pool meant that the jute mills had no incentive to invest in labor-saving machinery, which meant that the general stagnation of rural productivity was matched by an equivalent stagnation in mill productivity. Whereas employment increased eight times over between 1880 and 1910, the number of looms increased only six times over, and the number of spindles nine times over, i.e. there was virtually no technological development during these thirty years and consequently little impetus for a local machine-tool sector:

²³⁹ Tariq Omar Ali, *A Local History of Global Capital*, Chapter 1.

²⁴⁰ “The mills passed on the entire cost of migration to the workers as well as the costs of the maintenance and reproduction to the rural household. The jute mill workers' wages were insufficient for the maintenance of a family in the expensive cities and towns; they were insufficient even for the survival of the man in the city and his household in the village. As a result, the men in the city were caught in a vicious cycle of indebtedness. An enquiry in 1930 revealed that, ‘most of the families are in a chronic state of indebtedness and the apparent savings of 8 per cent are spent on the payment of debts and interests, except a few families, who really do make a saving’. Though a certain part of the debt was incurred in the village, a large part, perhaps the major part, was incurred in the mill area itself. Apparently, Rs 45 of the total debt of Rs 60 incurred by Hindus from UP [Uttar Pradesh], and Rs 75 out of a total debt of Rs 94 incurred by the madrasis, were actually incurred in the mill area itself. Annual interest rates ranging from 72-150 per cent were paid by 75-90 per cent of the workers. The average debt per head among 30,000 workers was calculated to be Rs 189. The margin of savings was, of course, too low for them ever to be able to repay their debts, though interest was cut off at source.” Samita Sen, *Women and Labour in Late Colonial India: The Bengal Jute Industry*. Cambridge: Cambridge University Press, 1999 (51).

²⁴¹ Samita Sen, *Women and Labour in Late Colonial India* (5).

Figure 20. Total employment, looms and spindles deployed in colonial Bengal jute mills.²⁴²

Year	Employment	Looms	Spindles
1879-80	26,826	4,876	69,456
1889-90	58,830	7,629	155,318
1899-1900	101,630	14,021	293,218
1909-1910	204,104	31,418	645,862

Given that Bengal's population was approximately 47 million in 1900, this workforce would be the demographic equivalent of 1.12 million employees vis-a-vis West Bengal's and Bangladesh's combined 2020 population of 260 million.

The other main agricultural export of South Asia was tea. "Annual tea production in South Asia rose from 98 million pounds during 1886-1890 to 251.1 million pounds in 1906-1910," observed Amiya Bagchi, "with about two-thirds of the total produced by Assam and about a quarter by Bengal."²⁴³ These tea plantations employed three-quarters of a million male and female laborers annually between 1870 and 1900, many of whom were from tribal communities.²⁴⁴ Hugh Tinker summarizes the industry as follows:

The 1870s were a period of steady development, and by 1880 there were 207,600 acres in the Indian hills under tea, producing a total of 40,000,000 lb. of tea annually. Tea production, unlike the processing of sugar and coffee, was an all-the-year-round industry. The leaves were plucked almost wholly by female coolies. The tea factory (one of which was located on every estate) was another rather simple establishment, where the leaves were dried, chopped and sorted into grades for packaging. A large work-force was required to discharge all the parts of production. Assam, producing about half India's tea, employed 107,847 workers in 1885.²⁴⁵

In addition to jute and tea jute, the other significant industrial workforces of British South Asia were those of the coal mines, textile mills and railroads. All of these industries had complex and occasionally contradictory effects on different ethnic, confessional and linguistic groups, as

²⁴² Amiya Kumar Bagchi. *Colonialism and Indian Economy*. New Delhi: Oxford University Press, 2010 (161).

²⁴³ Amiya Bagchi, *Colonialism and the Indian Economy* (164).

²⁴⁴ "Between 700,000 and 750,000 recruits for the tea industry came to Assam between 1870 and 1900 (they included families) and of these about 250,000 came from Chota Nagpur." Hugh Tinker. *A New System of Slavery: The Export of Indian Labour Overseas 1830-1920*. London: Oxford University Press, 1974 (50-51).

²⁴⁵ Hugh Tinker. *A New System of Slavery* (30).

well as on mercantile and feudal caste structures. Naina Banerjee summarizes the intertwining of the tea and coal diasporas, and their concomitant economic and social polarizations:

Even the Bengali population in the coal mining district of Burdwan, preferred to stay away from mining jobs. They actually preferred to work in sub-divisional government offices, as orderlies, pankha pullers, as clerks etc. Hence, very few Bengalis were found in the coal mines. Even they too preferred to work as clerks in the coal-companies. Their presence led to the emergence of a number of Babus viz., bati babu [lamp boss], compass babu etc. in the collieries.

Between 1880 and 1920, there was considerable increase in the volume of emigration from Chhota Nagpur. A shift in the destination was also noticed. Emigration was henceforth directed more towards the tea plantations of Assam and Dooars. After 1900, with the opening of coal mines in Jharia and Hazaribagh, emigration was also directed towards the coalfields.

The bulk of the migrants to the tea plantations were drawn from the ranks of the aboriginal tribal groups inhabiting Chota Nagpur. These tribal groups were the Mundas, Oraons, Kharias of Ranchi, Kols or Hos from Manbhum, Hazaribagh and Ranchi. Some low caste sections of the Hindu population like Bhogtas, Rautias, Chamars Dasads etc. were also found among the migrants. Strikingly enough, both the mines of Chhota Nagpur and the Tata Iron and Steel Company (TISCO) in Singhbhum, began to rely on adivasi workforce towards the end of the nineteenth century. Many of them were drawn from the far away districts of Orissa and Central Province. According to the Labour Enquiry Commission of 1896, the coal mines of Lower Bengal concentrated in Raniganj, Govindpur and Giridih, drew their labor mostly from the North-Western Provinces and Oudh. The key elements in the labor force were Kols, Muslims and Gonds, recruited from Jabalpur area, and Santhals recruited from Chhota Nagpur. According to the evidence given to the Enquiry Commission, many of the mines recently started working but “a stream of migration seems to have set in”. The emigrants came on their own accord, after the expenses of the first two or three batches had been paid. Besides, the expansion of the Bengal Nagpur Railways up to Damodar (now in Purulia) gave an opening to the labor elements of Manbhum. They could now easily come to Asansol and avail of jobs in mines.

...

Amongst the miners, the Bauris were the most important caste. They had cut coal in the neighboring Raniganj fields since its inception in the 1860s. By 1902, the Bauris considered coal-cutting to be their caste's occupation. After the Bauris, the Bagdis, Bhuiyas, Ghatwals, Turi, Teli, Jolaha, Kahar, Kalwar, Musahars and Dosadhs were the most important. The Santhals constituted approximately 10 per cent of the total workforce. Excluding them, all other castes were either pure laborers or service castes. Most of them were what the Chief inspector called 'semi-aboriginals'.²⁴⁶

This diverse workforce increased coal production in Bengal from 957,243 tons in 1878 to 1,380,594 tons in 1888, and then from an average of 4.228 million tons in 1896-1900 to 10.896 million tons in 1906-1910 (for the sake of comparison, this was about 4% of 1910 coal production in the British isles). An average of only 7% of Bengal's coal was exported between

²⁴⁶ Naina Banerjee. *Coal industry in Bengal 1870 to 1947: structural changes, capital labour and trade union movement*. (Dissertation) Visva Bharti University 2014, Department of History.
<http://hdl.handle.net/10603/22094> (Chapter 2, 85-87)

1896 and 1910, i.e. production was driven by local demand.²⁴⁷

There was a comparable expansion in Mumbai's cotton mills, where employment increased five times over from 44,410 in 1880 to 233,624 by 1910. During the same period, the number of spindles rose from 1.4 million to 6.2 million, and the number of looms from 13,502 to 82,725.²⁴⁸ This was an achievement comparable to the limited industrialization of the Central and South American semi-peripheries, e.g. the semi-peripheral economy of Argentina had 9000 spindles and 1200 looms in 1911, while Brazil had 1 million spindles and 35,000 looms that same year.²⁴⁹

The biggest industrial workforce of South Asia by far was that of the British railroad system, where the number of employees rose sixfold from 69,233 in 1870 to 437,535 in 1905.²⁵⁰ Total passengers increased twelve times over from 19.283 million in 1871 to 231.283 million in 1905, while freight increased fifteen times over from 3.542 million tons in 1870 to 52.506 million in 1905.²⁵¹

The construction of this rail network became one of the largest earth-moving enterprises of Global Steam, comparable in scale and significance to the canalizations of Suez and the Mekong.²⁵² In addition to moving earth and rock, the project also moved millions of South Asians from their home communities to railroad labor camps:

Millions of Indians – perhaps 10 million in the last half of the 19th century alone – were mobilized to build the railroads. Men, women, and children often traveled great distances to a worksite. The construction labor market extended across the regions of India. In the 1890s railways were built in Assam by Pathan labor. Makranis (from the Makran Coast, west of Karachi) were also present as were coolies from less distant Chapra (west of Patna) and Tirhut. Other earthworkers came from the Central Provinces and from Bengal. Nepalese did the dry stonework; carpenters, stonemasons, and bricklayers came from the Punjab while Cutch supplied masons and bricklayers; riveters and bridge erectors came from Bombay. In the same decade Punjabis and men from Maharashtra worked on the bridge over the Kistna river at

²⁴⁷ Naina Banerjee, *Coal industry in Bengal 1870 to 1947* (Chapter 2, 70-72).

²⁴⁸ Amiya Kumar Bagchi, *Colonialism and Indian Economy* (185).

²⁴⁹ David Rock. "Chapter 4: The Argentine Economy, 1890-1914: Some Salient Features." In: *The Political Economy of Argentina 1880-1946*. Edited by Guido di Tella and D.C.M. Platt. Oxford: Palgrave Macmillan, 1986 (70).

²⁵⁰ Ian J. Kerr. *Engines of Change: The Railroads that Made India*. Westport: Praeger, 2007 (65).

²⁵¹ Ian J. Kerr, *Engines of Change* (67).

²⁵² "The vast labor demands of the Bhore (and nearby Thal) Incline set labor in motion across an extensive part of western India. Some twenty-five tunnels, eight substantial, arched masonry viaducts, the cutting of 54 million cubic feet of hard rock, and the embanking of 67.5 million cubic feet of material were among its requirements. Its cost was equally substantial: some £1,100,000 (over £70,000 per mile) and perhaps 25,000 lives, although the human cost, unlike the financing, was not closely recorded.

Some 10,000 people were employed in 1856, rising to over 20,000 in early 1857. In 1860–1861 the employment averaged 25,000 and peaked at 42,000 in January 1861." Ian J. Kerr, *Engines of Change* (41-42).

While the British and French maritime empires gradually switched over from strategies of industrial despotism to those of despotic industrialism over the course of the 1860s and 1870s, and whereas the post-1885 Belgian, German, Italian, Japanese and US maritime empires were all established as despotic industrialisms from their beginning, the transition took a more circuitous form in the Dutch, Portuguese and Spanish maritime empires. The Spanish transition occurred under the auspices of the Cuban Ten Years' War of 1868-1878, which led to the abolition of wageless labor and the transformation of Cuba into an economic neocolony of the US. By contrast, the Portuguese empire entered its despotic industrial phase during the 1880s and 1890s, when the post-1885 imperial partition of Africa forced Portugal to solidify its control over the restive countryside of Angola and Mozambique.²⁵⁴ In Dutch Indonesia, the coercive cultivation system established during Global Cotton was gradually replaced by semi-coercive systems of migrant and indentured labor after 1870:

Labour mobilization was one of the most critical issues in implementing large-scale export production in the Outer Islands (Bremen 1989). In this respect, Deli acquired a notorious reputation. For countless poor Chinese and Javanese laborers, the word 'Deli' became synonymous with brutal repression, deceit and maltreatment. The tobacco companies in Deli urged special measures to safeguard the supply of labor in the thinly populated area where they were starting operations.

The legal basis was the Coolie Ordinance of 1880, which granted employers extreme legal powers to deal with immigrant employees. These included the so-called penal clause (*poenale sanctie*) that allowed for criminal prosecution if employees were judged, by the employers, to have failed to fulfill their contractual obligations. This much hated and ill-reputed legal weapon remained in force until 1931. The Coolie Ordinance and the penal clause were defended as indispensable to recovering the investment in overseas recruitment and transport of coolies to East Sumatra.

...

By the first decade of the 20th century, the number of coolies working in the Outer Islands exceeded 100,000, about 80% in East Sumatra alone (Houben, Lindblad et al. 1999). The colonial authorities assisted the recruitment of coolies by sending emissaries to poverty-stricken regions in South China and setting up depots in the main ports of Central Java. Government support became controversial

²⁵³ Ian J. Kerr, *Engines of Change* (62-63).

²⁵⁴ "It was also towards the end of the nineteenth century that Portugal embarked on the systematic military conquest of its African territories, following agreements with the United Kingdom and Germany on frontier demarcation, and this continued until 1920. Settlements were established in the subjugated territories, agricultural products, mainly coffee, cotton and cocoa, were grown for export, and the first steps were taken towards legal and administrative assimilation, based on the logic of the centralised modern state. This is a key historical turning point in the internationalisation and transnationalisation of imperial and colonial issues, and it produced a new normative framework for 'imperial civilization'." José Luís Garcia, Chandrika Kaul, Filipa Subtil and Alexandra Santos. "The Portuguese Empire: An Introduction." In: *Media and the Portuguese Empire*. Edited by José Luís Garcia, Chandrika Kaul, Filipa Subtil and Alexandra Santos. Cham: Palgrave Macmillan, 2017 (10-11)

in the early years of the 20th century. In 1902 the employers in East Sumatra were charged with gross abuse of coolies. An investigation was ordered, but the contents of the resulting report were not disclosed even to members of the Dutch Parliament. Later publication of the report showed that the accusations were well founded (Bremas 1989: 179–205). Although since the 1880s the government had maintained facilities in Medan to give the appearance of official protection to newly arrived coolies, not until 1908 did the government in fact take action by establishing a Labour Inspectorate for the Outer Islands. Its specific task was to alleviate abuses and check whether contractual obligations were being met by employers.²⁵⁵

Given Indonesia's population of 38 million in 1900, the indentured laborers of that time comprised a workforce equivalent to 720,000 workers vis-a-vis Indonesia's 2020 population of 274 million.

Dutch imperialism also played a key role in co-inventing mineral despotism in the form of the Royal Dutch company, founded in 1890 to exploit Indonesia's oil resources. This company merged with the British Shell Transport and Trading in 1907 to form the Anglo-Dutch Shell oil company conglomerate, one of the most powerful energy companies of the 20th century.²⁵⁶

The ultimate price humanity paid for the despotic industrialisms of Global Steam was not limited to factory exploitation, rural pauperization and ecological destruction. It also included industrial-era genocide. Ten of the fourteen world empires, three of the dynastic empires and one of the constitutional monarchies of Global Steam carried out famine genocides and bullet genocides on their own populations, murdering somewhere between 60.8 million and 64 million human beings.

The largest of the genocides are listed below, with two cautionary qualifications. First, they represent the midpoint of the most plausible demographic estimates of historians rather than a definitive count, due to the lack of census data in the global periphery and semi-periphery. Second, they do not include the much smaller or local atrocities perpetrated by more powerful communities against less powerful ones throughout the planet during Global Steam. The empires of the capitalist world-system did not invent human predation, they industrialized it on a planetary scale:

²⁵⁵ J. Thomas Lindblad. "Chapter 4: The Outer Islands in the 19th century: contest for the periphery." In: *The Emergence of a National Economy: An Economic History of Indonesia, 1800-2000*. Edited by Howard Dick, Vincent J.H. Houben, J. Thomas Lindblad and Thee Kian Wie. Honolulu: University of Honolulu Press, 2002 (103-104).

²⁵⁶ J. Thomas Lindblad, *The Emergence of a National Economy: An Economic History of Indonesia, 1800-2000* (105).

Figure 21. The largest genocides of 1860-1914.²⁵⁷

Polity	Famine and Bullet Genocides	Percent ethnic group or total population	Estimated deaths
Qing Chinese empire	Famines in Hebei, Henan, Shanxi, Shaanxi and Shandong provinces in 1876-1879 (8-13 million), and 1907 (25 million)	2%-3% of population in 1876-1879 and 6% in 1907-1911	35.5 million
British empire	Famines in Upper Doab 1860-1861 (2 million), Orissa 1866 (1 million), Rajputana 1869 (1.5 million), southern India 1876-1878 (5.5 million), Orissa, Ganjam and northern Bihar 1888-1889 (150,000), India 1896-1897 and 1899-1900 (2 million)	3%-4% of population, unknown number of local populations	12.2 million
Belgian empire	Genocide 1885-1908 (8 million)	50% population	8 million
Iranian empire	Famine 1870-1872 (200,000-3 million)	2%-3% of population	200,000-3 million
Russian empire	Genocide of Circassians 1864-1867 (625,000), famine in Finland 1866-1868 (150,000), famine in southern Russia 1891-1892 (375,000-500,000)	42%-50% of Circassians, 15% Finns, 0.6%-0.7% Russians	1.2-1.3 million

²⁵⁷ Famine estimates are collated from Mike Davis. *Late Victorian Holocausts: El Niño Famines and the Making of the Third World*. New York: Verso, 2001 (7). "The effect of famines on the population of India." *The Lancet* 157:4059, June 15, 1901 (1713-1714). Michelle B. McAlpin (1983). "Famines, Epidemics, and Population Growth: The Case of India." *The Journal of Interdisciplinary History* 14:2 (351-366). Jürgen Osterhammel, *The Transformation of the World* (202, 205). Bertrand Taithe (2010). "The 1866-1868 Famine in Algeria: Construction and Media Coverage Of a Disaster." *Revue d'histoire du XIXe siècle [Historical Review of the 19th Century]*: 41 (113-127). <https://journals.openedition.org/rh19/4051>. David Fieldhouse (1996). "For Richer, for Poorer?" In: *The Cambridge Illustrated History of the British Empire*. Edited by P.J. Marshall. Cambridge: Cambridge University Press, 1996. Kathryn Edgerton-Tarpley. *Tears from Iron: Cultural Responses to Famine in Nineteenth-Century China*. Berkeley: University of California, 2008. Chapter 1.

Ethiopian empire	Famine 1888-1892 (1 million)	8%-9% of population	1 million
US empire	Genocide of Filipinos 1898-1903 (1 million)	14% of Filipinos	1 million
French empire	Algerian famine 1866-1868 (820,000)	17% of Algerians	820,000
Brazilian empire	Northeastern Brazilian famine 1879 (400,000-500,000)	4%-5% of population)	400,000-500,000
Spanish empire	Cuban genocide 1895-1898 (271,000-371,000, three-quarters from famine)	16%-22% of Cubans	271,000-371,000
Ottoman empire	Armenian (Hamidian) genocide 1894-1896 (80,000-325,000), Assyrian genocide of up to 25,000	5%-15% Armenians, unknown percent of Assyrians	80,000-325,000
German empire	Herero genocide 1903-1907 (65,000)	81% of Herero	65,000
Portuguese empire	Cape Verdean famine 1863-1867 (20,000-30,000)	Unknown	20,000-30,000
Total	—	3%-4% average world population of 1860-1914	60.8-64 million

Given the world population of about 1.8 billion in 1910, the total loss of life was the demographic equivalent of 234-312 million human beings vis-a-vis the 2020 world population of 7.8 billion. This was far worse than the smaller genocides of the second supercycle and Global Cotton, although not quite as catastrophic as the combined bullet and famine genocides of the third supercycle, which would claim at least 100 million lives (the equivalent of 400 million deaths in the world of 2020). It is also significant that the genocides of Global Steam took place almost entirely in the global peripheries or in the peripheral regions of semi-peripheral polities, whereas about two-thirds of the killings of the third supercycle occurred in the semi-peripheral regions of Eastern Europe, West Asia and East Asia and only one-third in peripheral Africa and Asia, for reasons we will explain in the next volume.

The most terrible of the genocides of Global Steam occurred in the Qing polity in two main waves, the famines of 1876-1879 and 1907. The first famine devastated the provinces of Hebei (referred to in the 19th century as Zhili), Henan, Shanxi and Shaanxi in the Yellow River

basin, a region comprising about one-quarter of China's population,²⁵⁸ whereas the second afflicted the provinces of Anhui, Hunan and Jiangsu. While the immediate triggers of the famine were inclement weather, their true genesis was the terminal crisis of the Qing model of landlordism and extensive agricultural settlement, a.k.a. the dynasty's inability to adopt the intensive agricultural production strategies of late 19th century northwestern and central Europe, the Americas and Japan. Zhihong Shi has estimated that whereas the total acreage of Qing China increased by 7.9% between 1850 and 1911, average yields fell by 9.5% during the same period, resulting in widespread famine and stagnant population growth.²⁵⁹

The second worst of the genocides occurred in British South Asia, where the key issue was not the incapacity of the state, but its malevolence. Mike Davis has summarized the factors which triggered the 1876 famine of southern India, namely a global economic downturn, the export of South Asian food surpluses to British consumers, and the accelerated immiseration of subsistence farmers and craftworkers for the benefit of a tiny elite of urban compradors and rural landlords:

The worsening depression in world trade had been spreading misery and igniting discontent throughout cotton-exporting districts of the Deccan, where in any case forest enclosures and the displacement of gram by cotton had greatly reduced local food security. The traditional system of household and village grain reserves regulated by complex networks of patrimonial obligation had been largely supplanted since the Mutiny by merchant inventories and the cash nexus. Although rice and wheat production in the rest of India (which now included bonanzas of coarse rice from the recently conquered Irrawaddy delta [in Myanmar]) had been above average for the past three years, much of the surplus had been exported to England. Londoners were in effect eating India's bread. "It seems an anomaly," wrote a troubled observer, "that, with her famines on hand, India is able to supply food for other parts of the world."

There were other "anomalies." The newly constructed railroads, lauded as institutional safeguards against famine, were instead used by merchants to ship grain inventories from outlying drought-stricken districts to central depots for hoarding (as well as protection from rioters). Likewise the telegraph ensured that price hikes were coordinated in a thousand towns at once, regardless of local supply trends. Moreover, British antipathy to price control invited anyone who had the money to join in the frenzy of grain speculation. "Besides regular traders," a British official reported from Meerut in late 1876, "men of all sorts embarked in it who had or could raise any capital; jewelers and cloth dealers pledging their stocks, even their wives' jewels, to engage in business and import grain." Buckingham, not a free-trade fundamentalist, was appalled by the speed with which modern markets accelerated rather than relieved the famine:

The rise [of prices] was so extraordinary, and the available supply, as compared with well-known requirements, so scanty that merchants and dealers, hopeful of enormous future gains, appeared determined to hold their stocks for some indefinite time and not to part with the article which was becoming of such unwonted value. It was apparent to the Government that facilities for moving

²⁵⁸ Kathryn Edgerton-Sharp (2010). "'Pictures to Draw Tears of Iron': The North China Famine of 1876-1879." https://visualizingcultures.mit.edu/tears_from_iron/tfi_essay01.html

²⁵⁹ Shi estimated Qing China's population at 436 million in 1850 and 439 million in 1911. Zhihong Shi. *Agricultural Development in Qing China: A Quantitative Study, 1661-1911*. Leiden: Brill, 2018 (95).

grain by the rail were rapidly raising prices everywhere, and that the activity of apparent importation and railway transit, did not indicate any addition to the food stocks of the Presidency ... retail trade up-country was almost at standstill. Either prices were asked which were beyond the means of the multitude to pay, or shops remained entirely closed.

As a result, food prices soared out of the reach of outcaste laborers, displaced weavers, sharecroppers and poor peasants. "The dearth," as *The Nineteenth Century* pointed out a few months later, "was one of money and of labor rather than of food."

In response, the British authorities cemented their status as the worst criminals of the 19th century by inventing the modern concentration camp. This latter took the form of the "Temple wage" system of famine relief, which forced famine refugees to labor on public works while deliberately failing to provide them with enough calories to physically survive. Davis pulls no punches:

If, as a modern authority on famine emphasizes, "emergency relief, like development aid, is only truly effective if the recipients have the power to determine what it is and how it is used," Temple's perverse task was to make relief as repugnant and ineffective as possible. In zealously following his instructions to the letter, he became to Indian history what Charles Edward Trevelyan – permanent secretary to the Treasury during the Great Hunger (and, later, governor of Madras) – had become to Irish history: the personification of free market economics as a mask for colonial genocide.

In a lightning tour of the famished countryside of the eastern Deccan, Temple purged a half million people from relief work and forced Madras to follow Bombay's precedent of requiring starving applicants to travel to dormitory camps outside their locality for coolie labor on railroad and canal projects. The deliberately cruel "distance test" refused work to able-bodied adults and older children within a ten-mile radius of their homes. Famished laborers were also prohibited from seeking relief until "it was certified that they had become indigent, destitute and capable of only a modicum of labor." Digby later observed that Temple "went to Madras with the preconceived idea that the calamity had been exaggerated, that it was being inadequately met, and that, therefore, facts were, unconsciously may be, squared with this theory.... He expected to see a certain state of things, and he saw that – that and none other."

In a self-proclaimed Benthamite "experiment" that eerily prefigured later Nazi research on minimal human subsistence diets in concentration camps, Temple cut rations for male coolies, whom he compared to "a school full of refractory children," down to one pound of rice per diem despite medical testimony that the ryots – once "strapping fine fellows" – were now "little more than animated skeletons ... utterly unfit for any work." (Noting that felons traditionally received two pounds of rice per day, one district official suggested that "it would be better to shoot down the wretches than to prolong their misery in the way proposed.") The same reduced ration had been introduced previously by General Kennedy (another acerbic personality, "not personally popular even in his own department") in the Bombay Deccan, and Madras's sanitary commissioner, Dr. Cornish, was "of the opinion that 'experiment' in that case [meant] only slow, but certain starvation." Apart from its sheer deficiency in energy, Cornish pointed out that the exclusive rice ration without the daily addition of protein-rich pulses (dal), fish or meat would lead to rapid degeneration. Indeed, as the lieutenant-governor was undoubtedly aware, the

Indian government had previously fixed the minimum shipboard diet of emigrant coolies "living in a state of quietude" at twenty ounces of rice plus one pound of dal, mutton, vegetables and condiment. In the event, the "Temple wage," as it became known, provided less sustenance for hard labor than the diet inside the infamous Buchenwald concentration camp and less than half of the modern caloric standard recommended for adult males by the Indian government.

The unprecedented scale and scope of these genocides was accompanied by an equally unprecedented wave of progressive political and cultural mobilizations by partly waged and fully waged workers throughout the periphery. Politically, these mobilizations included everything from the establishment of Edmund Morel's *The West African Mail*, the independent newspaper which denounced the Belgian empire's extermination of approximately one-half of the Congolese population via rubber plantations,²⁶⁰ to the famine relief efforts of foreign missionaries and Chinese merchants during the 1876-1879 famine of northern China, and from the foundation of the Indian National Congress in 1885 to W.E.B. Dubois' ringing address to the 1900 Pan-African Congress.²⁶¹ These mobilizations were a crucial template for the anti-colonial activists and movements of the third supercycle, and it is no accident that Morel's key collaborator, Roger Casement, became a member of the Irish anti-colonial insurgency and was martyred during the 1916 Easter uprising.

One of the most striking expressions of these cultural mobilizations was the creation of the first modern novels written in the vernacular languages of the periphery, a list which includes Prathapa Mudaliar Charithram's Tamil-language novel *The Life of Prathapa Mudaliar* (1857), Bankim Chandra Chatterjee's Bengali-language historical romance *Durgeshnandini* [The Chieftain's Daughter] (1865), Nandshankar Mehta's Gujarati-language historical novel *Karan Ghelo: Gujarat's Last Rajput King* (1866), Deputy Nazeer Ahmed's Urdu-language novel *The Bride's Mirror* (1869), Shardha Ram Phillauri's Hindi-language novel *Bhagyawati* (1877), Kandukuri Veeresalingam's Telugu-language novel *Rajashekhara Charita* (1878), O. Chandu Menon's Malayali-language novel *Indulekha* (1889), Tran Chanh Chieu's Vietnamese-language novel *The Unjust Suffering of Hoang To Anh* (1910) and Muhammad Husayn Haykal's Arabic-language novel *Zaynab* (1911).

These literary vernaculars emerged in parallel with significant diasporic vernaculars, the most prominent of which included Multatuli's *Max Havelaar* (1860), the Dutch-language novel which denounced the predations of the cultivation system of colonial Indonesia,²⁶² as well as Jose

²⁶⁰ Adam Hochschild. *King Leopold's Ghost: A Story of Greed, Terror, and Heroism in Colonial Africa*. New York: Houghton Mifflin, 1998.

²⁶¹ "The problem of the 20th century is the problem of the color line...

...the modern world must remember that in this age when the ends of the world are being brought so near together the millions of black men in Africa, America and the Islands of the Sea, not to speak of the brown and yellow myriads elsewhere, are bound to have a great influence upon the world in the future, by reason of sheer numbers and physical contact." W.E.B. Dubois. "Address to the Nations of the World," 1900. www.blackpast.org/1900-w-e-b-du-bois-nations-world.

²⁶² The novel details the economic looting and military genocides of the Dutch colonial regime in Indonesia, and ends with a ringing invocation of international anti-colonial solidarity: "And if this were to

Rizal's towering Spanish-language novels *Touch Me Not* (1886) and *The Subversive* (1891), the twin literary anticipations of the 1895-1902 Philippine anti-colonial uprising.

These political and cultural mobilizations were accompanied by the first industrial-era labor protests of the periphery, everywhere from the successful 1859 Indigo Mutiny by Bengali farmers and rural laborers against rapacious indigo growers to a major labor uprising at a South Asian railroad construction site that same year.²⁶³ Most of these mobilizations took place in the fast-growing cities of the periphery, especially those established as imperial administrative centers or neocolonial economic centers. These metropolises were islands of industrialism in an ocean of subsistence economies, zones where farmers began to turn into workers, handicraft consumption into industrial consumerism, and partly waged scribal elites, hieratic specialists, and feudal literati into fully waged clerks, teachers and media-workers.

For example, France's Second Empire established Dakar, the future capital of Senegal, in 1857 and oversaw the growth of Algiers from 56,000 in 1888 to 172,397 in 1912.²⁶⁴ Similarly, the Ethiopian empire under Menelik established the city of Addis Ababa as its capital in 1886. The Egyptian cities of Alexandria and Cairo played key roles in incubating the 1879-1882 Urabi revolt of army officers against Ottoman rule, the event which triggered full-scale British colonization in 1882, while the population of Dutch-controlled Jakarta more than doubled from

no avail?

Then I should translate my book into Malay, Javanese, Sundanese, Alfoer, Boegi, and Battah.

And I should sharpen the klewangs, the scimitars and sabres, by rousing with warlike songs the minds of those martyrs whom I have promised to help – I, Multatuli, would do this!" Multatuli. *Max Havelaar: Or, the Coffee-auctions of the Dutch Trading Company*. Translated by Alphone Nahuys. Edinburgh: Edmonton & Douglas, 1868.

²⁶³ "The Indian workforce on the Ghat turned violently against their European masters on January 20, 1859, after the subcontractors, some of whom were months in arrears with their wage payments, had begun on January 17 to pay out wages at half the promised rate.

Europeans were attacked with sticks and stones. Later, armed Europeans went to the coolie huts to arrest the ringleaders. A shower of stones drove the Europeans away. One European who had wandered away from the armed party was later found shot dead, but by whom and why was never discovered.

The riot was the culmination of a festering situation on the Ghat. After a visit to the Ghat works in August 1858 a junior British official reported to his superior that the workers were subjected to 'constant instances of trivial ill-treatment which go quietly to form the settled popular feeling that the English are an oppressive race and the Government indifferent.' Later, after the outbreak in January 1859, one senior British official observed that it was a wonder given the conditions on the Ghat and the undoubtedly shameful treatment of the laborers that an outbreak had not occurred sooner. Moreover, he said, 'It is evident that the labourers have been most grossly abused in the matter of their wages.' Subsequently, official enquiries were launched, the police presence increased, and legislation rapidly passed (Act IX of 1860, The Employers' and Workmen's Disputes Act) to provide the government with additional powers to deal with strained labor relations at the sites of public works." Ian J. Kerr, *Engines of Change* (44-45).

²⁶⁴ Data from 1888 from Appleton's European Guide Book. *Algiers*. New York: D. Appleton & Co., 1888. Data from 1912 from Statesman's Year-Book. *France: Africa: Algeria*. London: Macmillan and Co., 1921 (880-886).

96,957 in 1880 to 234,687 in 1918.²⁶⁵ The population of neocolonial Shanghai tripled from an estimated 302,767 in 1880 to 1.2 million by 1900, while the population of colonial Kolkata rose from 639,003 in 1872 to 1 million in 1911.²⁶⁶ Sumanta Banerjee has provided this vivid description of the proletarian landscape of Kolkata in the 1870s:

...the bulk of the city's daily population consisted of the lower orders, comprising domestic servants (of various categories like 'khan-samahs' or butlers, cooks, 'punkah-pullers' or those who pulled the elaborate hanging fans, and gardeners, employed by the Englishmen and the rich Bengalis); barbers, water-carriers, washermen; laborers engaged in transport like palanquin bearers, coachmen, boatmen and porters; artisans like potters, bangle-makers, clay modelers, braziers; persons employed in traditional manufactures like oil-makers and sellers, salt workers; the first generation of the industrial proletariat – the jute and mill workers; and, what is important for our present discussion, the numerous types of artistes from these lower orders who were popular enough to be enumerated in the 1876 census – street musicians and singers, actors, dancers and jugglers.²⁶⁷

This urban landscape was the crucial sociological precondition of the post-1860 Hindu reform movements led by Ramakrishna and his disciple, Swami Vivekananda. It was also crucial to the success of figures such as Father Eugene Lafont, a teacher at St. Xavier's College who helped to initiate South Asia's popular science movement between 1866 and 1899, and who also played a key role in popularizing the media technology of the phonograph.²⁶⁸

Above all, Kolkata was the engine which revolutionized the Bengali language, catapulting Bengali literary industrial modernism into planetary prominence. No other vernacular languages of the periphery produced more literary classics during Global Steam than Bengali, and none exerted such a powerful influence on the other literary industrial modernisms of this epoch.

These classics include Rashsundari Debi's autobiography *My Life* (1876), the first realist female autobiography from South Asia, Bankim Chandra Chatterjee's anti-colonial novel *Anandamath* [Abbey of Joy] (1882), Rabindranath's poetry collections *Mind's Creation* [মানসী] (1890) and *Song Offering* [গীতাঞ্জলি] (1910), and finally Rabindranath's four great novels

²⁶⁵ Data for 1880 from Encyclopædia Britannica. *Batavia*. New York, 1910. Data for 1918 from Statesman's Year-Book. *Netherlands: Dutch East Indies*. London: Macmillan and Co., 1921.

²⁶⁶ Data for 1881 from Charles J. Bullock. "Yangtse Kiang: Shanghai." In: *China Sea Directory*. London: Admiralty Hydrographic Office, 1884. Shanghai data for 1915 from Christian Henriot. *Scythe and the City: A Social History of Death in Shanghai*. Stanford: Stanford University Press, 2016 (14). Data for Kolkata from L.S.S. O'Malley. *Census of India 1911, Volume 6*. Calcutta: Bengal Secretariat Book Depot, 1913 (2).

²⁶⁷ Sumanta Banerjee. *The Parlor and the Streets: Elite and Popular Culture in Nineteenth-Century Calcutta*. Calcutta: Seagull Books, 1989 (76).

²⁶⁸ Amitabha Ghosh. "The Pre-Commercial Era of Wax Cylinder Recording in India." *Music and Modernity: North Indian Classical Music in an Age of Mechanical Reproduction*. Edited by Amlan Das Gupta. Kolkata: Thema, 2007 (22).

Broken Nest [নষ্টনীড়] (1901), *Mote in the Eye* [চোখের বালি] (1902), *Boat-wreck* [নৌকাডুবি] (1906) and *White* [গোরা] (1909).

Nor were the other vernacular languages of the periphery far behind. Consider this extraordinary moment in Rizal's *Touch Me Not*, where Rizal identified the social actors transforming Spanish-controlled Manila into a hotbed of anti-colonial insurrection:

Ibarra's carriage was passing through a part of the busiest district in Manila, the same which the night before had made him feel sad, but which by daylight caused him to smile in spite of himself. The movement in every part, so many carriages coming and going at full speed, the carromatas and calesas, the Europeans, the Chinese, the natives, each in his own peculiar costume, the fruit-vendors, the money-changers, the naked porters, the grocery stores, the lunch stands and restaurants, the shops, and even the carts drawn by the impassive and indifferent carabao [Southeast Asian buffalo], who seems to amuse himself in carrying burdens while he patiently ruminates, all this noise and confusion, the very sun itself, the distinctive odors and the motley colors, awoke in the youth's mind a world of sleeping recollections.

Those streets had not yet been paved, and two successive days of sunshine filled them with dust which covered everything and made the passer-by cough while it nearly blinded him. A day of rain formed pools of muddy water, which at night reflected the carriage lights and splashed mud a distance of several yards away upon the pedestrians on the narrow sidewalks. And how many women have left their embroidered slippers in those waves of mud!

Then there might have been seen repairing those streets the lines of convicts with their shaven heads, dressed in short-sleeved camisas and pantaloons that reached only to their knees, each with his letter and number in blue. On their legs were chains partly wrapped in dirty rags to ease the chafing or perhaps the chill of the iron. Joined two by two, scorched in the sun, worn out by the heat and fatigue, they were lashed and goaded by a whip in the hands of one of their own number, who perhaps consoled himself with this power of maltreating others. They were tall men with somber faces, which he had never seen brightened with the light of a smile. Yet their eyes gleamed when the whistling lash fell upon their shoulders or when a passer-by threw them the chewed and broken stub of a cigar, which the nearest would snatch up and hide in his salakot, while the rest remained gazing at the passers-by with strange looks.²⁶⁹

Colonial time – the overlapping temporalities of centuries of imperial and maritime diasporas – fell into industrial space, wherein the protagonist's privileged gaze (Ibarra has recently returned from a study tour in Europe) was answered for by the autonomous gaze of partly waged convict laborers.

There was a strikingly similar transformation of colonial time into industrial space at the conclusion of Fakir Mohan Senapati's magnificent Oriya-language novel, *Six Acres and a Third* (1899). A fatal illness strikes down the villainous zamindar (landowner) responsible for expropriating the ancestral lands of the local villagers, but seconds before he expires, he has the following nightmare:

²⁶⁹ José Rizal. *Touch Me Not* [Nole Me Tangere]. Translated by Charles Derbyshire. Manila: Philippine Education Society, 1912. Chapter 8.

He drifted back to sleep and saw looming on the horizon the horrifying skeleton of a human with its jaws wide open, watching him intently, waiting silently to devour him. Mangaraj was certain that it was no one other than the woman who had starved herself to death in front of his house, because he had taken away her land. He also saw thousands of lunatics like Bhagia the weaver come rushing out of black shrouds in the sky, holding swords and iron clubs. He felt as if all these clubs were raining down on his head. Mangaraj wanted to scream and run away; but he could not utter a word, and he felt too weak to move. Feeling utterly helpless, he turned his thoughts in heartfelt ardor to the one who protected the unprotected and redeemed the fallen. And then he saw the consoling vision of a woman, full of light, seated on a jeweled throne far above the circle of the sun in the endless sky. In times past, a lady used to sit beside Mangaraj's sickbed and comfort him by passing her hand over his limbs. This brilliant and beauteous figure of a woman seated on the jeweled throne was an image of this lady. She beckoned to Mangaraj. His soul left his mortal frame and flew toward her. The house swelled to chants of the Lord's name: 'Haribol, Haribol, Haribol'.²⁷⁰

The true identity of the beauteous lady glimpsed in Mangaraj's final moments was of course Queen Victoria, crowned Empress of India in 1876, and the comprador narrator thereby confesses his guilt for colluding with Britain's imperial land-grabs and famine-genocides.

Yet the most interesting reference of all is the imaginary crowd of weavers wielding "swords and iron clubs". This is a reference to the possibility of a new kind of proletarian agency, one which was the long-term result of a series of uprisings which detonated in the politics of the global semi-periphery and core between 1862 and 1878.

²⁷⁰ Fakir Mohan Senapati. *Six Acres and a Third*. Translated by Rabi Shankar Mishra, Satya P. Mohanty, Jatindra K. Nayak and Paul St.-Pierre. New Delhi: Penguin Press, 2006 (216-217).

Chapter 7

Sightings of the Nautilus 1862-1878

Let's change the world at its base
We who are nothing will be everything!²⁷¹

Between 1862 and 1878, a wave of economic, political and cultural uprisings of a fundamentally new type erupted in the world-system. Their fourteen most prominent instances were a series of anti-colonial rebellions, anti-imperial insurgencies, and wars of national liberation which struck terror into the hearts of imperial elites, setting the headlines of the world's periodicals ablaze like the sightings of Jules Verne's legendary submarine.²⁷² While twelve of these fourteen uprisings were crushed by the might of the world's empires and the other two won purely local victories, henceforth the Nautilus of world revolution would prowl ceaselessly beneath the surface of the British-ruled waves.

This Nautilus did not consist of a single movement, organization or cultural form. Verne's craft was the perceptive distillation of a wide range of the cooperative economic arrangements, progressive political mobilizations, and egalitarian cultural practices which emerged during the first two decades of Global Steam, best described as humanity's first industrial commons. This commons had evolved over decades of struggle between small but growing numbers of fully and partly waged workers on the one hand, and the imperial elites who ruled the national imperial capitalisms of the core polities, the empires of capital and oligarchic republics of the semi-periphery, and the dynastic-mercantile empires and feudalisms of the periphery on the other. It expressed the class project of a new subject of world history, namely the fully and partly waged laborers of Global Steam.

What made this commons such an extraordinary force in world history was the fact that, in Marx's scintillating phrase, it had no abstract ideals to realize – precisely because it already

²⁷¹ "Le monde va changer de base / Nous ne sommes rien, soyons tout!" Eugène Pottier. *The Internationale*. 1871. This is my translation.

²⁷² These fourteen uprisings include the abolitionist phase of the US Civil War (1862-1865), the 1863 Polish uprising against the Russian empire, the US Reconstruction of the former Confederate states (1865-1876), the 1866-1869 Cretan rebellion against the Ottoman empire, the 1868-1878 anti-colonial Ten Years War in Spanish-controlled Cuba, the anti-colonial uprising of 1868-1869 in French-controlled Algeria, the 1868-1874 civil war of the Dominican Republic against US annexation, the 1871 Paris Commune in France, the 1871 Rakovica revolt by Croatian nationalists in Austria, the 1872 Cavite mutiny of soldiers against imperial Spain in the Philippines, the First Spanish Republic of 1873-1874, and the anti-Ottoman uprisings of the Serbs of Herzegovina in 1875, the Bulgarians in 1876, and the North Macedonians of Kumanovo in 1878.

embodied the changes it wished to enact.²⁷³ Put another way, the fourteen anti-colonial rebellions and wars of national liberation of this period were only the surface manifestations of an oceanic current of economic, political and cultural change.

This latter encompassed everything from the foundation of the first industrial unions and socialist parties to the dramatic expansion of male suffrage, from the expansion of systems of public education, mass transit and public sanitation to the creation of the first employment-based health insurance schemes and citizenship-based forms of social protection, and from the popularization of the phonograph, the telephone and the radio to the aesthetic revolutions of visual impressionism, musical chromaticism, and literary naturalism. English biologist Thomas Henry Huxley astutely summarized the emancipatory potential of this commons in an 1874 speech:

Change is in the air. It is whirling feather-heads into all sorts of eccentric orbits, and filling the steadiest with a sense of insecurity. It insists on reopening all questions and asking all institutions, however venerable, by what right they exist, and whether they are, or are not, in harmony with the real or supposed wants of mankind [sic]. And it is remarkable that these searching inquiries are not so much forced on institutions from without, as developed from within. Consummate scholars question the value of learning; priests condemn dogma; and women turn their backs upon man's ideal of perfect womanhood, and seek satisfaction in apocalyptic visions of some, as yet unrealised, epicene reality.²⁷⁴

For all its remarkable achievements, the industrial commons suffered from two endemic and debilitating weaknesses. The first was that fully and partly waged laborers remained a distinct minority of humanity during Global Steam, accounting for somewhere between one-fifth

²⁷³ “The working class expected no miracles from the Commune. It has no ready-made utopias to introduce by popular decree. It knows that in order to work out its own emancipation, and along with this, that higher mode of living [Lebensform] towards which contemporary society strives irresistibly through its own economic development, that it, the working class, must go through long battles, a whole series of historical processes, through which human beings as well as circumstances [Umstände] are totally transformed. It has no ideals to realize [verwirklichen: material fulfillment, completion]: it has only to set free the elements of the new society which have already developed in the womb of a collapsing bourgeois society.” [“Die Arbeiterklasse verlangte keine Wunder von der Kommune. Sie hat keine fix und fertigen Utopien durch Volksbeschluß einzuführen. Sie weiß, daß, um ihre eigne Befreiung und mit ihr jene höhere Lebensform hervorzarbeiten, der die gegenwärtige Gesellschaft durch ihre eigne ökonomische Entwicklung unwiderstehlich entgegenstrebt, daß sie, die Arbeiterklasse, lange Kämpfe, eine ganze Reihe geschichtlicher Prozesse durchzumachen hat, durch welche die Menschen wie die Umstände gänzlich umgewandelt werden. Sie hat keine Ideale zu verwirklichen; sie hat nur die Elemente der neuen Gesellschaft in Freiheit zu setzen, die sich bereits im Schoß der zusammenbrechenden Bourgeoisgesellschaft entwickelt haben.”] Karl Marx. *The Civil War in France*. Address to the General Council of the International Workers' Association. May 1871. This is my translation. http://www.mlwerke.de/me/me17/me17_319.htm.

²⁷⁴ Thomas Huxley. “Universities: Actual and Ideal.” *Inaugural Address of the Lord Rector of the University of Aberdeen*. February 27, 1874. <https://www.gutenberg.org/files/52344/52344-h/52344-h.htm>

to one-quarter of the planetary population in 1860 and only thirty percent by 1914. They resided primarily in the most urbanized and industrialized regions of the world empires, and their patterns of economic consumption, political aspirations and cultural habitus were heavily mediated by the internationalism of British hegemonic capital.

By contrast, the livelihoods, mentalities and life-worlds of the rural subsistence farmers and craftworkers who comprised the vast majority of humanity were mediated primarily by a range of despotic industrialisms, regional dynastic-mercantile regimes, and local feudalisms. The class struggles of progressive fully and partly waged laborers could only intermittently and with great difficulty unite with the diffuse and heterogeneous struggles of progressive subsistence farmers and craftworkers.

The second weakness of this commons was the lack of intermediaries capable of sustaining the connections between its economic, political and cultural wings. Fully and partly waged workers had limited political rights, low levels of literacy and education, little access to industrial communications networks, and only a rudimentary consciousness of themselves as a class. Conversely, most workers identified far more readily with pre-industrial and agrarian collectivities of ethnicity, race, language, religion, gender, caste, kinship, occupation and numerous other categories rather than with members of their own class. Progressive workers also had to contend with the possibility of arrest, torture, exile and execution by the armies and police forces of the national imperial capitalisms and empires of capital (the tolerance of the British hegemon vis-a-vis exiled European radicals such as Karl Marx and Victor Hugo was the exception, not the norm).

The combination of these two weaknesses resulted in a pattern of spectacular but narrowly-based eruptions of radicalism, followed by counterrevolutionary revanchisms which rolled back whatever small political gains had been made. For example, US revolutionary abolitionism abolished slavery, defeated the Confederacy and initiated the reforms of the US Reconstruction. After 1876, however, an alliance of northern plutocrats and southern white terrorists transformed former wageless laborers into partly waged sharecroppers and debt peons, deprived African Americans and poor whites of the right to vote through Jim Crow legislation, and re-enslaved tens of thousands of African Americans via carceral wageless labor.

Similarly, while the Dominican Republic managed to succeed in preserving its independence from the US and Bulgaria and Romania won de facto autonomy from the Ottoman empire, the Algerian, Cuban, Parisian and Polish revolts were drowned in blood by the French, Russian and Spanish empires, the First Spanish Republic fell to a constitutional monarchy, and the other Balkan uprisings were crushed or suborned by the Austrian and Russian empires.

By the same token, none of these counterrevolutions was able to halt the spread of industrialization, urbanization and mediatization, or to resuscitate systems of wageless labor or other industrial despotisms. Put another way, whereas the 1848-1851 uprisings terminated in the 1859-1871 consolidations of semi-peripheral empires of capital and the formation of national imperial capitalisms, those of the first industrial commons had no fixed time-table or date of expiration.

This open-ended logic was most apparent in the less spectacular but equally influential reform wave which accompanied the uprisings of 1862-1878. While open insurrections occurred in only two of the five core polities and only four of the empires of the semi-periphery of Global

Steam, this wave manifested itself in all five core polities and every single one of the empires and republics of the semi-periphery. Its most typical pattern was a series of significant reforms in the industrial heartlands of the five core polities, followed by their proliferation in the most industrialized of the empires and republics of the semi-periphery. Conversely, a smaller but still significant number of reforms began in the semi-peripheries and later spread to the core.²⁷⁵

The following chart illustrates just one dimension of this reform wave, namely the spread of democratic electoral participation in the polities of the core and the semi-periphery:

Figure 22. Expansion of the electorate 1860-1913.

Polity	Political Reforms
Argentina	Universal male suffrage established in 1912
Australia	Suffrage was near-universal among male white settlers by 1860. Women won the franchise in the colonies of South Australia (1895) and Western Australia (1899), and universal suffrage for white males and females was established in 1901 (most indigenous citizens could not vote until 1962).
Austria	The first parliament was established in 1861, a separate parliament granted in Hungarian branch of empire in 1867, male suffrage was expanded to 6% of population in 1873, universal suffrage was granted in 1896 but was restricted to a minority of seats in the parliament, and universal male suffrage was achieved in 1906.
Belgium	Only 1.1% of the population (male only) could vote in Belgium's first elections in 1831. The franchise was expanded to 1.8% of the population in 1848. After the 1894 general strike, the franchise increased to 37.3% (male only). Proportional representation was introduced in 1900.
Brazil	After the establishment of a republic in 1891, about 2% of the population (male only) could vote. This rose to 3% (male only) by 1910.
Britain	Between 1860 and 1867, 4.8% of the population (male only) could vote. The franchise was expanded to 7.9% of the population (male only) in 1867.

²⁷⁵ Most notably, the semi-peripheries led the way in the creation of progressive political parties. Denmark's Social Democratic Party was founded in 1871, Austria's Social Democratic Party in 1874, and Germany's Social Democratic Party in 1875. This predated the foundation of France's Federation of the Socialist Workers in 1879, the Workers' Party of Belgium in 1885, the Social Democratic Party of Sweden in 1889, the Labor Party of Australia in 1891, the Social Democratic Workers' Party of the Netherlands in 1894, the Labor Party of Britain in 1900, the Social Democratic Party of Japan in 1901, the Socialist Party of the United States in 1901, and the Socialist Revolutionary Party of Russia in 1902.

	After the Third Reform Act of 1884, 60% of all adult males could vote.
Canada	Male suffrage gradually expanded from 11.2% of the total population in 1867 to 25.3% in 1911. ²⁷⁶
Chile	Universal male suffrage established in 1888.
Costa Rica	Universal male suffrage and proportional representation were established in 1913.
Denmark	Suffrage was near-universal for males since 1849. Women won the right to vote in municipal elections in 1908.
Dominican Republic	Universal male suffrage was established in 1866.
France	Male suffrage rose from 3% prior to 1848 to near-universal status thereafter, but political power was concentrated in Bonaparte's electoral despotism between 1851 and 1870. The Third Republic established genuine universal male suffrage in 1871.
Finland	Suffrage for local parliamentary elections rose from 9% of males at the turn of the century to universal suffrage for men and women in 1907 (in practice, the Finnish parliament was repeatedly dissolved by the Russian empire between 1908 and 1917).
Germany	Universal male suffrage was established in 1871, but the parliament had limited power.
Greece	Universal male suffrage under a constitutional monarchy was established in 1864.
Italy	The male franchise was 1.9% of the population in Italy's first national elections in 1861, 2.2% in 1880, 7% in 1882, 8.5% in 1911 and 24.6% in 1912.
Japan	About 1% of the male population could vote for the 1891 parliament, and 2% could vote by 1900.
Netherlands	In 1883, 3% of Dutch males could vote, a figure which rose to 6% by 1894. In 1896, the franchise was enlarged to 11.6% of the population, and by 1913 to 15.6% (male only).

²⁷⁶ Statistics Canada. <https://www.elections.ca/content.aspx?section=ele&dir=turn&document=index&lang=e>.

New Zealand	Universal suffrage was won by Maori men in 1867, by white males in 1879, and by women in 1893.
Norway	Male suffrage was universal in principle since 1866 under Swedish rule (Norway achieved independence in 1905). About 9% of the total population voted in elections in 1897, and about 20% in the elections of 1900 and thereafter. Female suffrage was established in 1913.
Portugal	About 8%-10% of males voted in parliamentary elections between 1860 and 1913. The parliament had limited power.
Russia	Universal male suffrage was established in 1905, albeit with some limitations. The parliament had limited power.
Spain	Male suffrage increased from 5% of the population after 1876 to 25% in 1890. The parliament had limited power.
Sweden	Universal male suffrage was established in principle by 1866 (in practice, only 20% of the population could vote until 1907), proportional representation and truly universal male suffrage were introduced in 1907, and local elections permitted women to vote after 1909.
United States	Suffrage was near-universal among white males prior to 1860, albeit with literacy and property requirements, but was nominally granted to all males via the Fourteenth Amendment (1868) and the Fifteenth Amendment (1870). Jim Crow laws denied almost all African Americans and poor whites the right to vote in all of the former Confederate states between 1876 and 1965, while most African Americans did not have the right to vote in many of the northern states until the 1870s and 1880s. State-level female suffrage was established in Wyoming (1869), Utah (1895), Colorado (1893), Idaho (1896), Washington (1910), California (1911), Arizona and Oregon (1912), and Illinois (1913).

The reform wave was not limited to the expansion of the electorate. As noted above, Britain almost doubled the electoral franchise in 1867, from 4.8% of the total population (one-eleventh of all males) to 7.9% (one-sixth of all males). Yet one of the most significant reforms of the 1862-1878 period was the opening of the first six kilometer stretch of the London Underground to the public in 1863.

The system was a technological and logistical marvel for its time, and profoundly democratized urban mobility in Britain's largest city. Despite the limitations of the steam engine technology of the day, the metro provided fast, cheap and remarkably safe transit²⁷⁷ to millions of

²⁷⁷ "Despite isolated incidents such as these, the Metropolitan had a remarkably unblemished safety record

passengers. It attracted 9.5 million riders during its first year of operation²⁷⁸ and 45 million by 1875.²⁷⁹

Equally momentous changes occurred in the fields of citizenship, education and labor regulation. In 1870, the Married Women's Property Act (later strengthened via the Second Married Women's Property Act of 1882) granted wives the right to keep their own income. Union picketing was legalized in 1875, while the 1878 Factory Act prohibited child labor under ten, mandated half-days for laborers aged 10 to 14, and restricted working hours for women to 56 hours per week. The Elementary Education Act passed in 1870 encouraged free and universal public education for children between the ages of 5 and 12, while the Sandon Act of 1876 obligated parents to educate their children (to be sure, it was not until the Elementary Education Act of 1880 that school attendance was mandated until the age of 10).²⁸⁰

In the realm of public sanitation, British physician William Budd published a groundbreaking epidemiological study in 1873 on typhoid fever, paving the way for the Public Health Act of 1875, which mandated pavements, street lighting, sanitary authorities, running water and drainage in all new construction projects. Last but not least, the Cruelty to Animals Act of 1876 established a key precedent for environmental protection.

Whereas Britain's reform wave was driven by a combination of urbanization (the British isles became a majority urban society in 1861), Victorian progressive campaigns and trade union militancy, France's reform wave was heavily mediated by the Franco-Prussian war, the collapse of the Second Empire and the 1871 Paris Commune.

This last was more than just the belated eruption of the radical energies suppressed and canalized for two decades by the Bonapartist autocracy. The Commune's greatest single achievement was the construction and operation of the first city government in France which listened to the electorate of fully and partly waged workers and acted to improve their daily living conditions. Both participants and neutral observers of the Commune marveled at the fact that in the midst of raucous public assemblies, unprecedented policy innovations, and the most heated political rhetoric, the revolutionary authorities scrupulously cleaned the streets, maintained public security, and kept shops open and the economy functioning.

Whereas Marx and Engel's Communism was almost entirely spectral, the Commune's version of proletarian agency was a ghost from America's New Deal future. The new authorities

and in its first forty-four years did not experience a single railway accident resulting in the death of a passenger, which is extraordinary given the intensity of service, the use of steam engines and high passenger numbers. Indeed, according to the definitive history of London's transport, 'during the whole period of steam operation, there was no fatal accident to any passenger in these cuttings and tunnels' caused by a train collision or derailment." Christian Wolmar. *The Subterranean Railway: How the London Underground was built and how it changed the city forever*. London: Atlantic Books, 2004. Chapter 3.

²⁷⁸ Edward Walford. *New and Old London: Volume 5*. London: Cassell, Petter & Galpin, 1878.

<https://www.british-history.ac.uk/old-new-london/vol5/pp224-242>.

²⁷⁹ Christian Wolmar, *The Subterranean Railway*. Chapter 4.

²⁸⁰ By comparison, education for children aged 6-12 was not compulsory in the Netherlands until 1901. While the first Dutch legislation banning child labour under the age of 12 was passed in 1874, regular factory inspections to enforce the act did not begin until 1882. Similarly, Belgium did not ban child labor under the age of 12 until 1880.

made a serious attempt to feed the hungry, house the homeless, and grant dignity to those previously denied basic civil rights, almost as if Paris were under the two-month rule of New York City's legendary Roosevelt-era reformist mayor, Fiorella La Guardia.²⁸¹

The single greatest weakness of the Commune, on the other hand, was the fact that two-thirds of French citizens lived in the countryside and were deeply nostalgic for the rule of a constitutional monarch.²⁸² The single most striking evidence for this nostalgia was the national parliamentary elections of February 8, 1871, held ten days after the January 26, 1871 armistice signaling the end of hostilities in the Franco-Prussian war and at a moment when one-third of the country was still under Prussian occupation. An overwhelming majority of 396 seats (62.1%) were won by the monarchists (Orleanists and Legitimists), a significant minority of 222 (34.8%) were garnered by Republicans and liberals, and only 20 (3%) went to the thoroughly discredited Bonapartists.

Ten days after this election, a series of urban uprisings exploded in Paris and later in urban centers across France. The largest and most successful of these became the Paris Commune, which administered a teeming metropolis of 1.8 million with remarkable competence for seventy-one days (March 18-May 28, 1871).²⁸³ The city of Lyon (population 325,000) experienced two neighborhood uprisings, the first near l'Hôtel de ville which lasted from March 22 until March 25, and a second which lasted from April 30 to May 1 in the neighborhood of Guillotière. Smaller uprisings took place in Marseille (population 300,000) between March 22 and April 5, in Saint-Étienne (population 111,000) from March 24 until March 28, in Toulouse (population 127,000) from March 25 until March 27, and in the small towns of Le Creusot and Narbonne.

The pragmatic actions of the Commune, much like its revolutionary rhetoric, were a rainbow of contradictions. While the Commune passed some of the most progressive reforms of its time, it also displayed the classic morbid symptoms of the progressive-sounding but revanchist-acting one-party states of the third supercycle.

On the positive side, the city elections held on March 26 were some of the most democratic electoral contests held in Parisian history, albeit skewed by the last-minute nature of the ballot, limited campaigning time, and the flight of approximately one-third of the electorate due to the war.²⁸⁴ The new city council abolished the death penalty and military conscription, and

²⁸¹ Fiorella La Guardia was the mayor of New York City from 1933 until 1945 and a key urban ally of Roosevelt's New Deal.

²⁸² Marx's scintillating analysis of the class contradictions of the one-third of France which was urbanized at the time of the Commune, namely *The Civil War in France* (1871), lacked an equivalent analysis of the contradictions of the two-thirds of France which was still rural. To his credit, Marx sought to remedy this deficiency via his close study of the agrarian economy and rural conditions of the Russian empire during the 1870s and 1880s.

²⁸³ The exact timing of the Commune may have been influenced by Prussia's victory parade in Paris on February 17, which had been one of Bismarck's conditions for the armistice, one day prior to the uprising. That said, the deep reservoir of popular support the Commune enjoyed over the next two months must be explained by factors indigenous to Paris itself.

²⁸⁴ "There had been a great exodus of population during and after the siege, amounting to some 700,000 people or over a third of the city. Only 230,000 of the remaining 485,000 voters participated in the hastily

freed the political prisoners jailed by the Bonapartists and the Republican authorities.

One of the most popular and effective acts of the Commune was to cancel rents and ban evictions. “The Commune of Paris,” observed Manuel Castells, “holds the dubious title of being the most repressed rent strike in history.”²⁸⁵ That said, the Commune never proposed a long-term housing or neighborhood planning policy, and militants set fire to a number of historic Parisian buildings during the final days of the Commune.

The Commune declared civil unions and their resulting children to be as valid as church-approved marriages and their corresponding offspring. Marriage was transformed into a civil rather than confessional institution, and women were granted the right to divorce for the first time since 1816. The Commune also mandated free public education for all, ending the Catholic church’s control over the school system and anticipating the major educational reforms of the Third Republic by decades.²⁸⁶ At the same time, the leadership of the Commune was almost entirely male and never seriously considered granting women the right to vote.

On the negative side, a formidable secret police with powers of arbitrary detention and execution emerged under the direction of Raoul Rigault in record time. On March 21 the Commune banned the publication of pro-Republican newspapers, mirroring the Republican government’s banning of pro-Commune press sentiment in publications outside of Paris. The Commune also declared a disastrous and self-defeating policy of shooting four Republican hostages for every hostage taken by the Republican government. During the final week of the uprising, elements of the Commune set fire to numerous historic buildings and murdered sixty-three hostages (including Bishop Georges Darboy, who by a cruel irony had been one of the most progressive bishops in a mostly reactionary Catholic Church).

None of this is justification, to be sure, for the appalling murder of six to seven thousand Parisians by the Republican army during the final crushing of the Commune,²⁸⁷ almost all of whom were innocent of any crime and many of whom were simply in the wrong place at the wrong time. Yet what needs to be explained is why just five years after the defeat of the Commune and the triumph of the monarchists, the Republicans and their allies achieved an epochal victory in the parliamentary election of 1876, winning 393 out of 533 seats (73.7%) versus 140 for the monarchists (26.3%).²⁸⁸ This victory was followed by a quarter century of

called ballot. A map of electoral participation shows that the middle class western districts tended to abstain, while the working class east of Paris voted heavily, and for the most radical elements.” Donny Gluckstein, *The Paris Commune* (133-134).

²⁸⁵ Manuel Castells. *The City and the Grassroots: A Cross-cultural Theory of Urban Social Movements*. London: Edward Arnold, 1983 (23).

²⁸⁶ “The Third Republic that followed [the Commune] would only bring in compulsory free education after ten years, a fully secular school system after 33 years, and equal pay among teachers after 44 years.” Donny Gluckstein. *The Paris Commune: A Revolution in Democracy*. London: Bookmarks Publication, 2006 (40).

²⁸⁷ Initial estimates of twenty to thirty thousand killed were exaggerated. For a comprehensive and thorough review of the evidence, see: Robert Tombs (2012). “How Bloody was La Semaine Sanglante [The Week of Blood] of 1871? A Revision.” *The Historical Journal* 55:03 (679-704).

²⁸⁸ http://geoelections.free.fr/France/histoire/1876L_elus.htm.
https://web.archive.org/web/20080724230726/http://www.roi-president.com/elections_legislatives/legislat

Republican reforms copied wholesale from the Commune's playbook, ranging from the secularization of public education in 1882 to the limited right of women to divorce in 1884. The Commune lost the battle, but won the war.

The reform wave of the United States combined many of the internal factors specific to the British reforms – breakneck urbanization, elite reform campaigns, and the mass militancy of the estimated 100,000 workers who participated in the Great Railroad Strike of 1877 – with the external factors of the French reforms, most notably the Civil War-induced transformation of the United States from a semi-periphery into a core polity.

One of the most important consequences of the Civil War was the induction of one-fifth of all African American males under the age of 45 into the ranks of the Union Army as soldiers and logistics workers.²⁸⁹ As early as 1862, the Union states established the first system of national public pensions on behalf of Civil War veterans and their families. By 1863, the Union mobilization had triggered the beginning of true desegregation in the northern states:

In 1863, California for the first time permitted blacks to testify in criminal cases; early in 1865 Illinois repealed its laws barring blacks from entering the state, serving on juries, or testifying in court, while Ohio eliminated the last of its discriminatory “black laws.” And in May 1865, Massachusetts passed the first comprehensive public accommodations law in American history. In January 1865 the issue of segregated transport became a national cause célèbre when Robert Smalls, a black war hero, was ejected from a Philadelphia streetcar and forced to walk several miles to the navy yard where the Planter, the ship he had spirited from Charleston harbor nearly three years earlier, was undergoing repairs. Despite concerted pressure by the city's blacks and white allies, including banker Jay Cooke, integration did not come to Philadelphia transport until 1867, but New York City, San Francisco, Cincinnati, and Cleveland all desegregated their streetcars during the war.²⁹⁰

These victories were all the more remarkable considering that only five New England states (Maine, Massachusetts, New Hampshire, Rhode Island and Vermont) permitted African American males to vote in 1865. Between 1865 and 1868, state referendums granting African American suffrage were defeated in Connecticut, Kansas, New York, Ohio, the territory of Nebraska, and Wisconsin, and won only in two states, Iowa and Minnesota. As late as 1868, African American males could vote in only seven of the thirty-seven US states.²⁹¹

There was a similar pattern of remarkable local achievements in the teeth of ferocious revanchism in the case of the Bureau of Refugees, Freedmen, and Abandoned Lands established

[ives 1876.php](#)

²⁸⁹ “By the war's end, some 180,000 blacks had served in the Union Army—over one fifth of the nation's adult male black population under age forty-five. The highest percentage originated in the border states, where enlistment was, for most of the war, the only route to freedom. Nearly 60 percent of eligible Kentucky blacks served in the armed forces.” Eric Foner. *Reconstruction: America's Unfinished Revolution*. New York: HarperCollins, 1988. Chapter 1.

²⁹⁰ Eric Foner, *Reconstruction*. Chapter 1.

²⁹¹ Eric Foner, *Reconstruction*. Chapter 4.

by the Lincoln administration on March 3, 1865. The greatest single success of the Bureau was the construction of 3,000 schools for a population of 150,000 African American students throughout the south. These schools also embodied a remarkable degree of racial and gender solidarity, as white females from New England comprised the majority of teachers:

Because of its limited resources, however, the Bureau did not establish schools itself, but coordinated the activities of Northern societies committed to black education. By 1869 nearly 3,000 schools, serving over 150,000 pupils, reported to the Bureau, and these figures did not include many evening and private schools operated by the missionary societies and by blacks themselves. Plagued by financial difficulties and inadequate facilities, and more successful in reaching black youngsters in towns and cities than in rural areas, Bureau schools nonetheless helped lay the foundation for Southern public education. Education probably represented the agency's greatest success in the postwar South.

In a number of states local whites, some with blatantly racist attitudes, staffed the freedmen's schools, but most of the teachers were middle-class white women, the majority from New England, sent south by the Northern aid societies. Most had received some higher education, either in normal schools or in the few colleges, like Oberlin, that admitted women, and nearly all carried with them a commitment to uplifting the freedmen. 'I feel that it is a precious privilege,' one wrote, 'to be allowed to do something for these poor people.' Their letters of application invoked the example of husbands and brothers who had fought for the Union, and spoke of teaching as a way women could enlist as 'soldiers' in a peacetime campaign to fulfill the promise of emancipation.²⁹²

The high tide of Reconstruction was the passage of the Reconstruction Act of 1867 over President Johnson's veto, legalizing African American suffrage in the District of Columbia as well as in all US territories in 1867. This year also saw the zenith of the Union League, an organization of African American citizens which swept the south during the immediate postwar years.²⁹³ Most striking of all, African Americans achieved significant political power in the state

²⁹² Eric Foner, *Reconstruction*. Chapter 4.

²⁹³ "In Union Leagues, Republican gatherings, and impromptu local meetings, ordinary blacks in 1867 and 1868 staked their claim to equal citizenship in the American republic. Like Northern blacks schooled in the Great Tradition of protest, and the urban freemen who had dominated the state conventions of 1865 and 1866, former slaves identified themselves with the heritage of the Declaration of Independence, and insisted America live up to its professed ideals. In insistent language far removed from the conciliatory tones of 1865, an Alabama convention affirmed its understanding of equal citizenship:

We claim exactly the same rights, privileges and immunities as are enjoyed by white men—we ask nothing more and will be content with nothing less.... The law no longer knows white nor black, but simply men, and consequently we are entitled to ride in public conveyances, hold office, sit on juries and do everything else which we have in the past been prevented from doing solely on the ground of color.

At their most Utopian, blacks in Reconstruction envisioned a society purged of all racial distinctions. This does not mean they lacked a sense of racial identity, for they remained proud of the accomplishments of

of South Carolina.²⁹⁴

Most of these successes were undone by a ferocious wave of post-1876 industrial racism and white terrorism. Where the imperial revanchisms of the Austrian, French, Spanish, Ottoman and Russian empires murdered hundreds of thousands of civilians and anti-colonial insurgents, US imperial revanchism murdered tens of thousands of African Americans in the southern states, as well as hundreds of indigenous Americans in North America's western regions.

The single largest mass killing of African Americans occurred on April 13, 1873 near Colfax, Louisiana, when white supremacists murdered somewhere between 62 to 153 African Americans. While a number of perpetrators were eventually arrested, none was ever sentenced, and in 1876 the revanchists of the US Supreme Court gutted the Federal government's ability to enforce the Fourteenth Amendment.²⁹⁵ The revanchist wave was a catastrophe for African Americans and poor whites, who were denied the basic rights of citizenship in the former Confederate states between 1876 and the mid-1950s and immiserated as debt peons in a sharecropper economy.

Similarly, the single most dramatic episode of working-class mobilization of the 1870s, namely the Great Railroad Strike of 1877, was crushed by the armed forces of state and town militia, company thugs and Federal soldiers at the cost of about a hundred lives.

By the same token, the revanchists were unable to roll back other achievements of the industrial commons. These latter included everything from the expansion of pension benefits for Union civil war veterans to the creation of the Marine Hospital Service (the forerunner of today's

black soldiers, and preferred black teachers for their children and black churches in which to worship. But in the polity, those who had so long been proscribed because of color defined equality as color-blind."

Eric Foner, *Reconstruction*. Chapter 7.

²⁹⁴ "Only in South Carolina did blacks come to dominate the legislative process. Throughout Reconstruction, they comprised a majority of the House of Representatives, controlled its key committees, and, beginning in 1872, elected black speakers. "Sambo ..." reported Northern journalist James S. Pike in 1873, "is already his own leader in the Legislature.... The Speaker is black, the Clerk is black, the doorkeepers are black, the little pages are black." The next year, blacks gained a majority in the state senate as well (elsewhere, nearly all black lawmakers sat in the lower house).

Despite the overall pattern of white political control, the fact that well over 600 blacks served as legislators—the large majority, except in Louisiana and Virginia, former slaves—represented a stunning departure in American politics. Moreover, because of the black population's geographical concentration and the reluctance of many scalawags to vote for black candidates, nearly all these lawmakers hailed from plantation counties, home of the wealthiest and, before the war, most powerful Southerners. The spectacle of former slaves representing the low-country rice kingdom or the domain of Natchez cotton nabobs epitomized the political revolution wrought by Reconstruction." Eric Foner, *Reconstruction*. Chapter 8.

²⁹⁵ "After a lengthy appeal, the United States Supreme Court, ruling in 1876 in the case of *Cruikshank vs. United States*, voided key sections of the Enforcement Act and decided that the Fourteenth Amendment applied only to actions committed by state governments and not by private individuals. The justices remanded the case to the jurisdiction of the state courts of Louisiana. None of those participating in the attack were ever convicted or punished for any crime connected with the battle of Colfax." James K. Hogue. "The 1873 Battle of Colfax: Paramilitarism and Counterrevolution in Louisiana." (18).

<http://www.libertychapelcemetery.org/files/hogue-colfax.pdf>.

Department of Health and Human Services) in 1870. On the state level, Massachusetts established a State Board of Health in 1869, while the American Public Health Association was founded in 1872. As John Blake observed, the major public sanitation and infrastructure reforms of the 1880s and 1890s (e.g. Lawrence, Massachusetts became the first US city to adopt a mandatory plumbing code in 1881)²⁹⁶ began as local initiatives in the 1870s:

While constant advances were being made in nearly all fields of environmental sanitation during the 1880s and 1890s, the developments in medical theory also prompted the extension and improvement of old techniques of infectious disease control long used for smallpox. In 1873 Brooklyn first required notification of scarlet fever and typhoid, and though this development was slow to spread, by 1900 32 states and many communities in others required notification of communicable diseases. In 1894 Boston introduced the first regular system of medical examination of school children, followed by Chicago in 1895, by New York in 1897, and by Philadelphia in 1898. Placarding of houses for infectious diseases became nearly universal by 1900.²⁹⁷

Other landmarks of this era include the foundation of the American Society for the Prevention of Cruelty to Animals in 1866 and the New York Society for the Prevention of Cruelty to Children in 1875. These organizations grew rapidly during the final quarter of the 19th century and played a key role in numerous legislative reforms as well as the establishment of the US Bureau Child Protection in 1912.

The reform wave took on a far more complicated character in the polities of the semi-periphery, due to the vast internal heterogeneity of semi-feudal empires of capital with large populations of ethnically, linguistically, and confessionally diverse subsistence farmers, as well as to the external contingencies of imperial geography. For example, the settler-colonial semi-peripheries of British Australia, Canada and New Zealand followed the lead of Britain and to a lesser extent the United States, e.g. Edward Playter published Canada's first professional public health journal between 1874 and 1892, while Ontario passed its first Public Health Act in 1873.²⁹⁸ By contrast, semi-peripheries such as Argentina, Denmark, Sweden and Switzerland tended to follow developments in Britain and France. For example, Sweden passed its first Public Health Act in 1874 mandating the construction of clean water and sanitation systems, one year before Britain's comparable 1875 legislation.²⁹⁹

The Austrian empire adopted a number of significant reforms during the 1862-1878 conjuncture, most notably the 1867 compromise which divided the empire into an Austria-ruled zone and a Hungarian-ruled zone and created seventeen local parliaments with authority over health care, education and other civil affairs. All remaining forms of legal discrimination against

²⁹⁶ John H. Blake (1948). "The Origins of Public Health in the United States." *American Journal of Public Health* 48 (1542). <https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.38.11.1539>

²⁹⁷ John H. Blake, "The Origins of Public Health in the United States" (1544).

²⁹⁸ Christopher Ruttly and Sue C. Sullivan. *This is Public Health: A Canadian History*. Ottawa: The Canadian Public Health Association, 2010 (1.4, 1.5).

²⁹⁹ Dorothy Porter. *Health, Civilization and the State*. New York: Routledge, 1998 (98).

the empire's Jewish population were abolished, and male suffrage expanded to 6% of the population in 1873, although the power of the parliament was sharply constrained. In the field of education, attendance in the empire's middle schools – primary schools were administered by seventeen local parliaments established in 1867 – rose from 79,383 in 1893 to 160,000 in 1913, while attendance at universities increased from 16,288 to 43,225 during the same period.³⁰⁰

For its part, the newly-formed German empire adopted universal male suffrage and banned child labor under the age of ten in 1871, expanded its systems of secondary and tertiary education, and adopted numerous sanitation reforms. The most prominent of these latter was the construction of a comprehensive sewage system by the municipal authorities of Berlin between 1873 and 1893. The success of this project, spearheaded by medical reformer Rudolf Virchow and urban planner James Hobrecht, became a model for sewage projects in cities around the world.³⁰¹

The only two partial success stories of the anti-colonial uprisings against Ottoman rule, namely Bulgaria and Romania, were the result of insurgent nationalisms combined with a favorable geopolitical conjuncture. Between 1870 and 1872, Bulgarian nationalist Vasil Levski organized a secret revolutionary society of approximately 1,000 members called the International Revolution Organization. While Levski was captured by the Ottoman authorities in 1872 and executed in 1873, his movement continued to flourish underground, and a number of regions of Bulgaria erupted into a national uprising in April 1876. The insurgent army of roughly 10,000 volunteers was no match for the much larger Ottoman army, and Hristo Botev, editor of the main newspaper of the revolutionaries and author of the iconic poem “The Hanging of Vasil Levski” (1876), was martyred in one of the final battles against Ottoman forces on June 1, 1876.

However, the conflict triggered the subsequent Russo-Turkish War of 1876-1877, as the Russian empire used the conflict as an excuse for its own program of anti-Ottoman regional expansionism. Following the defeat of the Ottomans by Russian forces in 1877, the 1878 Congress of Berlin handed the former Ottoman regions of Bosnia-Herzegovina over to Austria, Cyprus to Britain, and the provinces of Batum (present-day Georgia), Budjak (Bessarabia, present-day Moldova and Ukraine) and Kars (present-day Türkiye) to the Russian empire. At the same time, Bulgaria, Montenegro, Romania and Serbia all became de facto independent states.

These polities were halfway between the traditional buffer states which had constrained the American, French and Russian empires during Global Cotton, and the politically independent but economically neocolonial republics of Central and South America. As semi-peripheral polities in the first stage of industrialization, they were subject to the internal stressors of rapid population growth, rising levels of ethnic self-consciousness, and conflicts over land distribution, as well as the external stressors of neocolonial dependency vis-a-vis British and French capital. In response, all four polities adopted compensatory irredentisms aimed at ethnic diasporas and enclaves within the Austrian and Ottoman empires, similar to how independent Greece had

³⁰⁰ Peter H. Pearson. *The Schools of Austria-Hungary*. US Department of Education. Washington: US Government, 1919 (17-18). <https://files.eric.ed.gov/fulltext/ED541322.pdf>

³⁰¹ Ian F. McNeely. ‘*Medicine on a Grand Scale*’: *Rudolf Virchow, Liberalism, and the Public Health*. London: The Wellcome Trust Centre for the History of Medicine at University College London, 2014 (32-49).

adopted the program of Meghali expansionism vis-a-vis the Ottoman Greek diaspora after 1844.

Post-1868 Japan instituted a number of key reforms during this period, including the establishment of a national post office in 1871, making the first four years of education compulsory for all children in 1872, and instituting elected prefectural governments in 1878. However, only a quarter to half of all children regularly attended school thereafter, due to onerous school fees. Attendance did not become universal until 1899, when the first four years of public education became free of charge (this was extended to six years in 1907).³⁰² The 1870s also witnessed the emergence of the first independent civic associations, an independent press (the first national newspapers were founded in 1871-1872), and national political parties such as the Jiyuto (Liberal Party).³⁰³

The Spanish empire represents one of the most complex cases of them all. The Spanish empire entered six years of revolutionary ferment between 1868 and 1878 following the deposition of Isabella II, the reigning Bourbon monarch, by a broad coalition of liberals and conservatives. What ensued was a series of regional and anti-colonial uprisings, none of which managed to establish a stable post-dynastic polity.³⁰⁴

The first of these uprisings was Cuba's Ten Year War (1868-1878) against Spanish rule, a rural anti-colonial insurgency centered in eastern Cuba which was also an abolitionist struggle. While the rebellion was ultimately quelled, it compelled the Spanish empire to pass the Moret law in 1870, mandating the emancipation of all children born of slaves since 1868 as well as slaves aged at least sixty. The subsequent 1878 Pact of Zanjón which ended the conflict granted emancipation to all wageless laborers who had fought on either side of the war, and Spain finally abolished slavery in all of its colonies in 1886, two years ahead of abolition in Brazil. Just as importantly, the Ten Years War planted the seeds of Cuba's revolutionary anti-colonial nationalism which would flower in the 1894 uprising.

The second was the Third Carlist rebellion (1872-1876), rooted in Catalonia and the Basque region, wherein Carlos VII unsuccessfully laid claim to the Spanish throne. The third was a mass mutiny of soldiers in the province of Cavite, just south of the capital city of Manila, in the Spanish Philippines. The fourth was a series of dispersed cantonal uprisings between July 1873 and January 1874 throughout Andalusia, Murcia and Valencia, which were loosely aligned with Proudhon's vision of rural collectives. The fifth was the Petroleum Revolution of July 9-13, 1873, Spain's version of the Paris Commune, wherein the fully and partly waged workers of Alcoy rose up and ruled the city for five days before being brutally crushed by the Spanish army.

This revolutionary period in Spanish history culminated in the first attempt to create a full-fledged republic in 1873. A military coup ended the First Republic in 1874, and the Spanish

³⁰² Chushichi Tsuzuki. *The Pursuit of Power in Modern Japan 1825-1995*. Oxford: Oxford University Press, 2000 (66).

³⁰³ Andrew Gordon. *A Modern History of Japan: From Tokugawa Times to the Present*. Oxford: Oxford University Press, 2003 (67-68, 79, 84-85).

³⁰⁴ "A more thoroughgoing liberal revolution in 1868, bringing about the deposition of Queen Isabella II and the proclamation of a republic in 1875 after the brief interlude of Amadeo I's unsuccessful reign, was the signal for peasants across the south to occupy and divide seigneurial and common lands. Illegal grazing, occupations, theft, and all kinds of low-level agrarian protest rumbled on in parts of Spain beyond the end of the century." Richard J. Evans. *The Pursuit of Power* (108).

empire returned to the status of a constitutional monarchy under Alphonso XII, the son of the deposed Isabella II.

Perhaps the deepest paradox of the uprisings and reforms of the first industrial commons was their near-total dissociation from the leading aesthetic works of industrial modernism. This was due in part to the labile and protean nature of the 1862-1878 wave of uprisings and reforms, which never occurred at precisely the same time or place, never employed precisely the same tools and strategies, and never generated the same ultimate outcome.

The main reason for this disconnect, however, was the asynchronous development of Global Steam's forces of aesthetic production vis-a-vis its relations of aesthetic production. Put bluntly, the sheer quantity and quality of the aesthetic innovations of industrial modernism overwhelmed the absorptive capacity of the existing practices of artist compensation, modes of media circulation, and networks of audience reception, or what amounted to the aesthetic version of the capitalist business cycle of speculation, temporary overproduction, and deflationary recession. When Global Steam began to turn culture into passenger luggage, the response of the artists of industrial modernism was to stuff new forms of mobile culture into this luggage: everything from schematics of the latest diesel engine to traveler's time-tables, and from telegrams to brief sketches of the passing landscape.

Two of the most striking expressions of this strategy of extended mobility, one located in the mainstream of national imperial culture and the other at the furthest margin of dissent from such, were the twenty years separating Wagner's writing of the libretto of the *Ring* cycle in 1854 and the completion of its musical orchestration in 1874, and the seventeen years between Eugène Pottier's writing of *The Internationale* and the creation of its musical theme by Pierre De Geyter in 1888. What was not obvious to the concert-goers or workers of the time were the profound links between Wagner's operatic industrial modernism and the lyrical-musical industrial modernism of Pottier-De Geyter's joint masterpiece.

Pottier's stirring lyrics, written just weeks after the crushing of the Paris Commune, called for an anti-imperial uprising in the French language of the second largest colonial empire of Global Steam:

Arise, damned of the earth!
Arise, convicts of hunger!
Reason thunders in its crater
It's the final eruption.
Let's clear the table of the past
Enslaved crowd [foule esclave], arise! Arise!
Let's change the world at its base
We who are nothing will be everything!³⁰⁵

³⁰⁵ "Debout! les damnés de la terre / Debout! les forçats de la faim / La raison tonne en son cratère, / C'est l'éruption de la fin. / Du passé faisons table rase / Foule esclave, debout! debout! / Le monde va changer de base / Nous ne sommes rien, soyons tout!" Eugène Pottier. *The Internationale*. 1871. This is my translation.

Admittedly, the text was unable to explicitly critique the system of national imperial capitalism or to show solidarity with the struggles of the partly waged workers and subsistence farmers of the French colonial periphery. Similarly, whereas the song's sixth and final verse called for a united front of French city-dwellers and rural inhabitants – "Workers [ouvrières], peasants [paysans], we are/ the great party of laborers [travailleurs]"³⁰⁶ – the reality was that France's majority rural male electorate voted overwhelmingly for Napoleon III, elected a conservative parliament in 1871 dominated by royalists and partisans of Bonaparte, and did not elect a republican government until 1876.

What transformed these lyrics into a classic, however, was the replacement of the original tune of the piece, Claude Joseph Rouget de Lisle's 1792 *The Marseillaise* – the official national anthem of France after 1870 – with De Geyter's original composition. The resulting tune was so popular that the Belgian authorities persecuted De Geyter and eventually drove him into permanent exile in France.

The musicological reason for this success was that De Geyter replaced the late 18th century tonality of *The Marseillaise* with the late 19th century chromaticism of Wagner's *Ring*. Rouget de Lisle's stirring anthem was constructed around a root key of G, and followed the tonal logic of the First Viennese School (the classic opening call is scored as D-D-D-G-G-A-A-upper D-B-G, followed by the response G-B-G-E-upper C-A-F-G). Lisle's battlefield anthem was literally the soundtrack of Hegel's world-spirit on horseback. But where *The Marseillaise* projected the triumph of the root triad over the threatening dissonance of the foreign invader as a foregone conclusion – the musical hubris of a French empire which had been the hegemonic military power on the continent of Europe since 1648 and would eventually overreach itself in Napoleon's maritime-driven defeat – *The Internationale* began with the acknowledgement of a crushing defeat.

De Geyter's first musical line began from the root key of C and descended to the key of G ("Rise up, damned of the earth!", scored as G-upper C-B-upper D-upper C-G-E-F-D), while the second line descends to the lower octave of C ("Rise up, prisoners of hunger!", scored as A-upper D-upper C-B-A-G-F-E).³⁰⁷ The third musical line repeated the first line, while the fourth returned to the key of C after traversing the key of G in a melodic chromaticism worthy of Brahms or Bruckner ("It's the final eruption", scored as upper D-upper C-B-upper D-upper F-B-upper C).

In like manner, the first part of the refrain of *The Marseillaise*, "To arms, citizens/ Form your battalions" formed a triad which traces out the key of G (upper D-B-G-A), while the second part, "March, march / So that impure blood [of the invader] / waters the furrows", began and ended in G (G-A-B-upper C-upper D-upper E-A, upper E-upper D-B-upper C-A-G).³⁰⁸ This is the musical figuration of massed ranks of musket-bearing soldiers, marching off to battle.

³⁰⁶ "Ouvriers, paysans, nous sommes/ Le grand parti des travailleurs". Eugène Pottier, *The Internationale*. This is my translation.

³⁰⁷ This is based on De Geyter's original manuscript.

<https://upload.wikimedia.org/wikipedia/commons/c/ce/L%27Internationale.jpg>

³⁰⁸ "Aux armes, citoyens, / Formez vos bataillons, / Marchons, marchons! / Qu'un sang impur / Abreuve nos sillons!". Claude Joseph Rouget de Lisle, *The Marseillaise*. This is my translation.

By contrast, the first two lines of De Geyter's stirring refrain were both in the key of G ("It's the final battle", scored as upper E-upper D-upper C-G-F-A-F, and "Everyone join together, and tomorrow", scored as upper D-upper C-B-A-A flat-G). The chromatic A flat was especially effective, crowding in the melody in a manner suggestive of a crowd of workers at a meeting or protest.³⁰⁹

De Geyter's third line was an aesthetic masterstroke comparable only to Wagner's Tristan chord. It consisted entirely of the single five-syllable word "Internationale." This was an exceedingly difficult word for workers and farmers with limited access to education to parse, let alone sing. De Geyter solved this problem by slowing down the term's vocal enunciation, and by shifting to the key of G (G-upper E-upper D-A-upper C-B). De Geyter also evoked the rhythm of a popular march via the subtle rhythmic emphasis on the second syllable "ter" (the upper E) and on the sixth and final syllable "le" (the concluding B), pronounced "leh" in French – a syllable which means nothing suddenly means everything. It is no accident that the fourth line of the refrain ("will become the human race", scored as B-A-G-A-upper D-upper D) did something similar, by shifting the key of E employed by the second line of the first stanza to the key of G.

Yet De Geyter saved the best for last. While the first half of the refrain ("It's the final battle") is repeated verbatim in the key of G, the second line ("Everyone join together, and tomorrow") altered the final two notes from the conclusive A flat-G to the aspirational G-upper E. This foreshadowed the second and final iteration of the line "Internationale" (upper E-upper G-upper F-upper E-upper C-A-B-upper C-upper E) as well as the second and final iteration of "will become the human race" (upper F-upper E-A-upper D-upper C-upper C), both of which shifted from their previous key of G back to C.

By democratizing the C chord, De Geyter's musical chromaticism enabled ordinary workers and citizens to step into the shoes of the sailors aboard Baudelaire's "voyage into the New", that timber-and-canvas anticipation of the metal-and-electric Nautilus, catapulting Pottier's lyrics to the status of humanity's second planetary anthem (the "Ode to Joy" in Beethoven's *Ninth Symphony* has the distinction of being the first).

De Geyter and Pottier's collective achievement was inextricably linked to the larger democratization of aesthetics wrought by the industrial modernisms of Global Steam, most notably the dramatic expansion of aesthetic production in the South American and European semi-peripheries between 1862 and 1878. Whereas six of the seven greatest novels which channeled the 1848-1851 uprisings were written in English and one in Russian,³¹⁰ seven of the thirteen greatest novels which channeled the 1862-1878 uprisings and industrial commons were written in Russian, two in English, one in French, one in Brazilian Portuguese and one in Chilean Spanish.

In chronological order, these novels included Alberto Blest Gana's retelling of Santiago's 1851 uprising, *Martin Rivas* (1862), a foundational work of Chilean industrial modernism which

³⁰⁹ "C'est la lutte finale / Groupons-nous, et demain, / L'Internationale sera le genre humain". Eugène Pottier, *The Internationale*. This is my translation.

³¹⁰ For further details, see: Dennis Redmond. "Chapter 7: The 1848-1851 Revolutions and Counterrevolutions." In: *Meditations on Geopolitics, Volume 4. Global Cotton: The British Long Peace 1815-1860*. Kolkata: Monkeybear Press, 2021.

became Chile's national novel, Ivan Turgenev's pioneering Russian-language novel of industrial modernism, *Fathers and Children* (1862), Victor Hugo's behemoth retelling of the French variant of the 1830-1831 uprisings, *The Immiserated* (1862), Sofia Khvoschinskaya's *City Folk and Country Folk* (1865), the first classic Russian-language novel of rural manners written during the post-Emancipation era, Jules Verne's science fiction classic *Twenty Thousand Leagues Under the Sea* (1870), Lewis Carroll's landmark children's novel *Alice's Adventures in Wonderland* (1865), Fyodor Dostoyevsky's magnificent *Crime and Punishment* (1866), *The Idiot* (1869), and *Demons* (1872), the first canonic Russian-language crime thriller, social reform melodrama and political thriller novels, respectively, Leo Tolstoy's breakthrough Russian-language historical novel *War and Peace* (1869) and adultery novel *Anna Karenina* (1877), Mark Twain's *The Adventures of Tom Sawyer* (1875), the first great bildungsroman in American literature, and Machado de Assis' *Helena* (1876), the first great melodramatic novel of Portuguese literature.

In the lyrical field, the classics include Stephane Mallarme's *Her Pure Nails* (1868), *Funereal Toast* (1873), and the definitive version of *The Afternoon of a Faun* (1876), and Arthur Rimbaud's *A Season in Hell* (1873). In the field of drama, Henrik Ibsen sublated the tragedy of the excessively faithful folk pastor of *Brand* (1865) and the comedy of the excessively faithless folk hero of *Peer Gynt* (1867) into the tragi-comedy of the excessively wealthy anti-hero of *Pillars of Society* (1877).

In the musical field, the triumph of Wagner's chromaticism in the *Ring* operas had its orchestral counterpart in Johannes Brahms' *Two String Quartets, Opus 51* (1873), *Piano Quartet in C minor, Opus 60* (1875), *Symphony No. 1* (1876), *Symphony No. 2 in D major, Opus 73* (1877), and *Violin Concerto in D major* (1878), as well as Anton Bruckner's soaring *Symphony No. 5 in B flat major* (1878). At the same time, Edvard Grieg's *In the Hall of the Mountain King* (1867), Modest Mussorgsky's *Night on Bald Mountain* (1867) and *Boris Gudonov* (1872), and Tchaikovsky's *Swan Lake* (1876) inducted the coloristic innovations of Norwegian and Russian folk music into the orchestral canon.

In painting, Monet created the breakthrough work of Impressionism, namely *Impression: Sunrise* (1872), the unacknowledged visual manifesto of the Paris Commune. Its canvas seethed with industrial energy, everywhere from the smokestacks visible on the horizon to its pollution-streaked sky, punch-holed by a molten sun. The human-powered dinghy in the foreground symbolically traversed the distance between the masts of sailing vessels visible on the left to the squat industrial barges located on the right, while the shower of sparks from the iron and steel mills of the day was transmuted into the watery reflection of the sun – the visual point of equilibrium between the lookout of the dinghy's crew and the gaze of the audience.³¹¹

Monet followed up with the classic works *The Artist's House at Argenteuil* (1873), *Coal*

³¹¹ Jules Laforgue was one of the first critics to grasp the democratizing impulse behind Impressionism's *plein air* or "open air" strategy of visual representation: "...the painting of beings and things in their appropriate atmosphere: out-of-door scenes, simple interiors, or ornate drawing rooms seen by candlelight, streets, gas-lit corridors, factories, market places, hospitals, etc." Paul Laforgue (1883). "Impressionism." Translated by Linda Nochlin. In: *Impressionism and Post-Impressionism 1874-1904: Sources and Documents*. Edited by Linda Nochlin. Englewood Cliffs, New Jersey: Prentice Hall, 1966 (14-20).

Dockers (1875) and *Woman with a Parasol* (1875). The first of these depicted the idyllic domestic sphere of the property-owning nuclear family, while the second showed a grimy factory landscape dotted with laboring bodies, a.k.a. the antipodes of the elite consumer surplus and the plebian economic immiseration of French imperial national capitalism. The third depicted the post-Commune resistances to this capitalism via the scandalous autonomy of its two visual figures, a young woman and child framed against Monet's first truly Impressionist sky. These two figures stare roguishly back at the viewer, icons of the independent female shoppers and commercialized children's culture beginning to emerge in the five core polities. Meanwhile *Saint Lazare Train Station, External View* (1877)³¹² and *Montorgeuil Street* (1878) channeled the industrial energies of *Sunrise* in the context of the railroad junction and the imperial national parade, respectively.

The other key figure of early Impressionism was Berthe Berisot. The latter's *In the Wheatfield at Gennevilliers* (1875) depicted a blazing field of wheat framed by rural smokestacks in the background and a young boy in the foreground, hinting at the extensive rural-to-urban migration which meant that women and children performed a great deal of agricultural labor – the visual analogue of Hugo's witticism that "The Paris of 1862 is a city which has France as its suburb".³¹³ Meanwhile, Berisot's *The Cheval Glass* (1876) and *Portrait of a Young Lady* (1878) delivered scathing feminist critiques of the visual art-commodity, the former via the riotous visual excess of the red carpet and the fact that the woman's reflection in the mirror is staring, impossibly, at the viewer, and the latter via the proto-Cubist jumble of brush-strokes on the lady's dress as well as the scandalous self-possession of her coolly composed viewing of the painting's implied viewer.

At the margins of Impressionism, Eduard Manet's *Masked Ball at the Opera House* (1873) and *The Railway* (also known as *Saint-Lazare Station*) (1873) staged twin photographic uprisings against the state-sponsored spectacle of Parisian Grand Opera and the private spectacle of the portraiture sitting, respectively. Where the former transformed the quasi-public space of the foyer into a theater of class contestation, the latter transformed the waiting bench into a public space accessible to young women and teenagers.

For all of their considerable achievements, the most progressive aesthetic works of 1862-1878 generated a contradiction which had significant consequences for the remainder of Global Steam. This contradiction was the growing rift between the industrial modernisms of the five core polities on the one hand, and the industrial modernisms of the forty semi-peripheral polities and the various peripheral polities on the other.

The post-1860 expansion of the forces and relations of aesthetic production sharpened the competition between cultural producers, distributors and consumers both within and between polities, in the same way that post-1860 industrialization exacerbated the economic and political antagonisms both within and between polities. As a result, the industrial modernisms of the core polities began to crystallize over time into the objective field of an international culture-industry and the subjective habitus of an international consumer sensorium, precisely where the industrial

³¹² <https://www.wikiart.org/en/claude-monet/saint-lazare-station-exterior-view/>.

³¹³ "Le Paris de 1862 est une ville qui a la France pour banlieue." Victor Hugo. *Les Misérables*, 1862. Volume 1, Book 3, Chapter 3. This is my translation.

modernisms of the semi-periphery and periphery crystallized over time into the objective field of a neocolonial culture-industry and the subjective habitus of a neocolonial consumer sensorium.³¹⁴

One of the most striking expressions of this international culture-industry was the career of Paul Durand-Ruel, the international art dealer who intermediated the circuits of reception between the leading Impressionist artists of the core and the audiences of the semi-periphery. As Orlando Figes explains:

In the early 1870s, Durand-Ruel was the only Paris dealer to back the Impressionists. He saw their work as a development of the Barbizon painters, and believed that he could repeat the success he had achieved with them by using the same strategies. The basic idea of his business plan (which would become common practice in the modern dealer system) was to buy a large amount of an artist's work and raise its value by promoting it. He was the first of a new breed of art dealers who changed public taste by stimulating interest in an unknown brand of art, as opposed to the more established practice of dealing in those works of art which were already known and in demand.

Durand-Ruel bought up works by the Impressionists wholesale, borrowing from bankers, and, if necessary to corner the market, entering into partnership with other dealers, such as Hector Brame, with whom he had acquired a virtual monopoly in the works of Corot and Rousseau after 1865. As a long-term investor in their work, Durand-Ruel was as much a patron as a dealer to the Impressionists. He gave them loans and encouragement when they most needed them. There were times when he came close to bankruptcy because their paintings did not sell. To raise their value on the market Durand-Ruel employed a number of innovative strategies borrowed from investors on the stock exchange. He pushed up the bidding for his own artists to increase their perceived worth (just as Saccard, the speculator in Zola's novel *Money*, buys shares in his own bank to raise their value). As he had done with the Barbizon painters, he founded an art review to promote the Impressionists. He specialized in one-man shows, a practice that became more common from the 1880s as other dealers learned from his success, and, instead of hanging paintings in the crowded manner usual at that time, gave each picture lots of space to emphasize its importance. He campaigned hard to get their works into public galleries and museums, recognizing these as 'our best publicity'. He loaned their works to international exhibitions, and built links with agencies and dealers to develop foreign sales. The art market was internationalized at an ever growing rate from the 1870s, as cheaper photographic reproductions, the telegraph and a faster postal system enabled information about new paintings to cross national frontiers more easily. Durand-Ruel was one of the first dealers to exploit fully these developments with agencies in Europe and America. It was in the United States and Russia that through him the Impressionists would find their biggest markets in the last two decades of the century.³¹⁵

Durand-Ruel's success was part and parcel of an international visual-industrial complex of art dealers, art-critics, galleries, exhibition halls, museums, and low-cost commercial reproductions (posters, prints and photographs) located primarily in the core polities. Comparable core-centered culture-industries played a key role in the creation of the international

³¹⁴ Chapter 9 will examine how the international modernisms of the semi-periphery responded to the international-culture industries of the core polities between 1878 and 1904.

³¹⁵ Orlando Figes, *The Europeans*. Chapter 7: Culture Without Borders.

literary bestseller and in the industrialization of piano production. In particular, Figes makes a compelling case that this latter triggered a profound democratization of musical culture from the late 1850s until the early 1880s via the proliferation of four-handed piano sheet music.³¹⁶

The objective institutions of the international culture-industry emerged hand in hand with the subjective innervations of audiences attuned to the international consumer sensorium. One of the most famous examples of this sensorium was the spread of coffee-drinking in the imperial metropolises, everywhere from the founding of the Cafe Central in downtown Vienna in 1860 to the commercialization of coffee roasting machines by Jabez Burns in 1864, and from the commercialization of Vienna-based Michael Thonet's legendary No. 14 chair in 1859 (the single most ubiquitous article of cafe furniture to this day)³¹⁷ to the Hills Brothers' introduction of

³¹⁶ "There was a whole industry of second-rank composers who churned out piano albums and arrangements for this new market. Thalberg, Herz, Franz Hünten, Tekla Bądarzewska-Baranowska – these and many others made their names from the sort of pieces (sentimental, easy on the ear, with brilliant effects, but not too hard to play) that gave the piano popular appeal. One of the most common forms of sheet music was the four-hand piano transcription. It swept aside the string quartet or trio as the main means of making music in the home. No other medium was so important to the dissemination of the opera, choral and orchestral repertory until the invention of the phonograph and radio. With four hands the full sound of a large-scale work could be reproduced; while such works would be hard for pianists to manage on their own, with two players the difficulties could be shared. The range of music for four hands was staggering: in Germany alone, a Hofmeister catalogue of 1844 listed almost 9,000 different works, including 150 entries for Beethoven, with all his symphonies, overtures, masses, concertos and chamber music, along with his opera, *Fidelio*." Orlando Figes, *The Europeans*. Chapter 2: A Revolution on the Stage.

³¹⁷ "To overcome the problems of weak joints and of glue losing its adhesive strength in humid conditions, he developed – after years of experimentation – a method of bending solid beechwood into small curvilinear shapes. To this end, he placed the wood in hot steam units at 100°C., pressing them into curved cast-iron moulds and then drying them at 70°C. for 20 h. Thus he minimized the risk of grain splitting along the external side of the curve. He introduced this innovation with his No.1 chair at the Great Exhibition in 1851 in London, where he was awarded the bronze medal and later on, as he improved his method, he was awarded the silver medal at the Exposition Universelle of 1855 in Paris. Thonet designed a new structure for a chair based on distinct components which could be worked on separately, a production method also applied in High Wycombe's workshops in Great Britain for the production of Windsor chairs. Each No.14 chair consisted of six pieces of bent wood, ten screws and two nuts, allowing for easy reassembling on site. The seat was made of woven cane or palm because the holes allowed spilt liquid to drain off the chair. Later on, two diagonal braces were added between the seat and the back to strengthen the joint. The manufacturing process was simple and could be carried out by unskilled workers in an assembly line. The factory in Korsten employed the whole community: farmers collected the wood, while women and children did the polishing and wove the cane for the seat. If the workers had a family, they were allowed to work at home, taking materials from the factory and bringing back the finished components." Paraskevi Kertemelidou (2018). "Exhibiting an everyday industrial object in the museum the case of Thonet No.14 chair." *Museum Management and Curatorship* 33:2 (6). <https://www.tandfonline.com/doi/abs/10.1080/09647775.2018.1428819?journalCode=rmmc20>. Also see: <https://www.visitingvienna.com/sights/museums/thonet-no-14-chair/> and <https://designmuseum.org/discover-design/all-design-objects/thonet-chair-no-14>.

vacuum-packed coffee in 1900.

Walter Pater has provided one of the most insightful meditations into this sensorium:

At first sight experience seems to bury us under a flood of external objects, pressing upon us with a sharp and importunate reality, calling us out of ourselves in a thousand forms of action. But when reflexion begins to act upon those objects they are dissipated under its influence; the cohesive force seems suspended like a trick of magic; each object is loosed into a group of impressions – color, odor, texture – in the mind of the observer. And if we continue to dwell in thought on this world, not of objects in the solidity with which language invests them, but of impressions unstable, flickering, inconsistent, which burn and are extinguished with our consciousness of them, it contracts still further; the whole scope of observation is dwarfed to the narrow chamber of the individual mind. Experience, already reduced to a swarm of impressions, is ringed round for each one of us by that thick wall of personality through which no real voice has ever pierced on its way to us, or from us to that which we can only conjecture to be without. Every one of those impressions is the impression of the individual in his isolation, each mind keeping as a solitary prisoner its own dream of a world. Analysis goes a step farther still, and assures us that those impressions of the individual mind to which, for each one of us, experience dwindles down, are in perpetual flight; that each of them is limited by time, and that as time is infinitely divisible, each of them is infinitely divisible also; all that is actual in it being a single moment, gone while we try to apprehend it, of which it may ever be more truly said that it has ceased to be than that it is. To such a tremulous wisp constantly re-forming itself on the stream, to a single sharp impression, with a sense in it, a relic more or less fleeting, of such moments gone by, what is real in our life fines itself down. It is with this movement, with the passage and dissolution of impressions, images, sensations, that analysis leaves off – that continual vanishing away, that strange, perpetual weaving and unweaving of ourselves.³¹⁸

Rather than drowning in endless waves of consumerism, this international subjectivity is structurally engineered to navigate such. The single most striking expression of this subjectivity in the prose novel was Verne's *Twenty Thousand Leagues Under the Sea*.

On the level of form, this latter internationalized Melville's sea-faring epic, transforming the Pequod's floating whale-oil factory into the Nautilus' hub of consumer technologies, Ishmael's theological musings into Professor Aronnax's meditations on natural history, and Ahab's vengeful iron into Nemo's unrelenting steel. On the level of content, Verne sublated Marx and Engel's specter of Communism, Melville's white whale, and Baudelaire's voyage of the New into world history's first (underwater) space opera.³¹⁹

The single greatest achievement of this space opera was not its depiction of the technological marvels of the Nautilus or the spectacles of the undersea deep, as impressive as these were for their time.³²⁰ Rather, it was its reinvention of time. The single most common

³¹⁸ Walter Pater, *Renaissance Studies*, 1871. Conclusion.

³¹⁹ The two most influential later iterations of the space opera as a literary form were E.E. 'Doc' Smith's 1937-1954 *Lensman* series and Isaac Asimov's 1942-1953 *Foundation* trilogy.

³²⁰ Consider the extraordinary detail of Nemo's supply chain: "'Each section, professor, [said Nemo] was delivered to me from a different part of the globe, using an accommodation address. The keel was forged at Le Creusot, the propeller shaft was made by Pen & Co. of London, the metal plates for the hull by

misinterpretation of Verne's novel is that it depicts an adventure through space, as memorialized by Nemo's official motto, "mobilis in mobili" – Latin for "moving in movement". Yet the true source of the captain's power was not so much undersea self-propulsion, but the ability to access past temporalities. There is a significant hint of this in Nemo's first appearance:

He [Nemo] was tall and had a wide forehead, a straight nose, a firmly set mouth, splendid teeth and hands that were delicate, long-fingered and eminently 'psychic', to borrow a term from the art of reading chiromony, by which is meant that they were perfectly suited to serve a heart that was noble and passionate. He was the most perfect specimen of manhood I ever came across. One special detail: his eyes, being set rather wide, made it possible for him to take in at any one time pretty near a quarter of the horizon. This ability – as I subsequently confirmed – was accompanied by an acuity of vision sharper even than that of Ned Land. When he wanted to see an object, his eyebrows came together, his wide eyelids crowded around his pupils, thus narrowing his field of vision, and he looked. And what a look! He magnified objects made small by distance! He could see into your very soul! He could see into the waters of the sea, which are so opaque to our eyes, and read what was contained in their depths!³²¹

Instead of being the object of the narrator's gaze, Nemo was the subjectivity of an international reading audience beginning to read *itself*. This was a literary transformation as far-reaching as chromaticism in music, naturalism in theater, and Impressionism in painting. Nemo was the ur-model of what Nietzsche would theorize as the every-person (Übermensch) – the democratic sublation of the Rockefeller-style plutocrat, the Edisonian inventor-engineer, and the imperial colonist-adventurer into the first science fiction protagonist of the industrial commons.

The other transcendental literary expression of this protagonist was the professional detective, namely Arthur Conan Doyle's Sherlock Holmes. But where Doyle's private eye transformed the cosmopolitan space of London into that proto-cinematic palimpsest of social history otherwise known as the crime scene – the painstaking reconstruction of the past through site visits and forensic data – Verne's submariner transformed the maritime trading routes of the 19th century into that proto-cinematic palimpsest of natural history otherwise known as the alien world – the painstaking projection of the future through the careful exploration of the past.

In part 1 of Verne's novel, these alien worlds included the underwater plains of chapter 16, the underwater forest of Chapter 17, and the coral funeral of Chapter 24. In part 2, they included the sunken Hapsburg fleet of Chapter 8, the exploration of drowned Atlantis in Chapter

Leard of Liverpool, and the propeller by Scott of Glasgow. Its tanks were manufactured by Cail et Compagnie of Paris, its engine in Prussia by Krupp's, the bow section in the workshops of Motala in Sweden, all its precision instruments by Hart Brothers of New York and so forth. Each of my suppliers was given my plans under a variety of names.'" Jules Verne. *Twenty Thousand Leagues Under the Sea*. *Twenty Thousand Leagues Beneath the Sea*. Part 1, Chapter 13. Translated by David Coward. New York: Penguin Classics, 2017.

³²¹ Jules Verne. *Twenty Thousand Leagues Beneath the Sea*. Part 1, Chapter 8. Translated by David Coward. New York: Penguin Classics, 2017.

9, the underwater coalfields of Chapter 10, the underwater iceberg of Chapter 16, the giant sea monsters of Chapter 18 and the maelstrom of Chapter 22.

These alien worlds did more than just refunction spatial narratives into historical ones. They profoundly disrupted the toxic industrial racism which disfigured Verne's previous literary high watermark, namely *Journey to the Center of the Earth*, which rewrote the colonial explorer into the colonial spelunker.³²² The root of this racism was the chauvinistic reduction of the citizens of the industrial commons to those exclusively from France. While there are occasional traces of this chauvinism in Verne's undersea classic,³²³ the trope of the alien world enabled Verne to deliver an astonishingly radical anti-imperial and anti-colonial cosmopolitanism.

The clearest expression of this cosmopolitanism was Nemo's origin story, which revealed that the greatest superhero of 19th century science fiction was South Asian. "'That Indian, professor," Nemo informs Aronnax, "lives in a country where people are oppressed, and I am still, and shall be until my dying day, a part of that country!"'³²⁴ Other expressions include the nascent environmentalism hinted at by Nemo's stinging condemnation of the cetaceocide in Chapter 12, and the international literary market hinted at by Chapter 19's vignette of Nemo as an author – the anticipation of Rabindranath Tagore, the first artist of the periphery to receive significant recognition in the core polities.

This cosmopolitanism is also the secret of Verne's bravura ending: "In response to the question asked 6,000 years ago in the Book of Ecclesiastes – 'Who has ever descended into the depths of the abyss?' – only two men among all men have the right to give an answer: Captain

³²² In Chapter 38, the protagonists discover a boneyard containing the fossils of past natural historical disasters, like mid-Victorian tourists viewing a Napoleonic-era battlefield. When the narrator's intrepid uncle discovers an outsized human skeleton, it is assigned the proto-whiteness of pre-Meiji Restoration Japan: "'You see,' he continued, 'he is scarcely six feet in length, and we are far from the so-called giants. As for the race it belongs to, it is unquestionably Caucasian. This is the white race, this is ours! The skull of this fossil is a regular ovoid, without development of the cheekbones, without projection of the jaw. There is no type of prognathism to modify the facial angle. Measure this angle, it is almost ninety degrees. But I will go even further down the deductive path, and I venture to say that this human sample belongs to the Japanese family, spread from the Indies to the limits of Western Europe.'" ["Vous le voyez, reprit-il, il n'a pas six pieds de long, et nous sommes loin des prétendus géants. Quant à la race à laquelle il appartient, elle est incontestablement caucasique. C'est la race blanche, c'est la nôtre! Le crâne de ce fossile est régulièrement ovoïde, sans développement des pommettes, sans projection de la mâchoire. Il ne présente aucun caractère de ce prognathisme qui modifie l'angle facial. Mesurez cet angle, il est presque de quatre-vingt-dix degrés. Mais j'irai plus loin encore dans le chemin des déductions, et j'oserai dire que cet échantillon humain appartient à la famille japétique, répandue depuis les Indes jusqu'aux limites de l'Europe occidentale."] Jules Verne, *Journey to the Center of the Earth*. Chapter 38. This is my translation.

³²³ "These sailors were clearly of different nationalities, although the European type was recognizable in all of them. I had no difficulty picking out Irish, French, one or two Slavs and a Greek or Cretan." Jules Verne, *Twenty Thousand Leagues Under the Sea*. Part 2, Chapter 18.

³²⁴ Jules Verne, *Twenty Thousand Leagues Under the Sea*. Part 2, Chapter 4. Verne's later text, *The Mysterious Island* (1875), confirmed Nemo's identity as Prince Dakkar, a South Asian prince embittered by the British empire's crushing of the 1857 uprising.

Nemo and myself.”³²⁵ To be sure, this quote does not exist anywhere in the Bible,³²⁶ while Verne’s chronology is overstated – the first iterations of the Bible most likely date from 900 BCE, three thousand years ago. Nonetheless, this marks the moment Verne’s maelstrom-spinner invented the franchise-spawning Hollywood cliffhanger.

Verne’s prose industrial modernism has significant parallels to the lyrical industrial modernism of Rimbaud’s *Season in Hell* (1873). “Rimbaud’s poetry constitutes a genuine ‘lieu mixte’ [scrambled-up place]: a half real, half fantastic libidinal geography of class exchange,” observed Kristin Ross. “It assembles formal elements from the realm of high culture – the alexandrine, the sonnet form – with Ardennais slang, scatological invective, and political diatribe.”³²⁷ This scrambling also extended to the realm of ideology, where Rimbaud’s progressive depiction of his stormy romance with Paul Verlaine³²⁸ – the passage which opened the door to the LGBTQ themes and characters of Proust and Genet – coexisted with irredeemable fantasies of French imperial whiteness and colonial rapine. Put bluntly, the progressivism of Rimbaud’s signature quip, “You’ve got to be absolutely modern”³²⁹ was always the flip side of a revanchist-tinged racialized and sexualized self-loathing (“I’m a beast, a black [nègre]”).³³⁰

On the progressive side of the ledger, Rimbaud’s text occasionally achieved the density of a Commune mass slogan turned prose-poem: “Human labor! this is the explosion which illuminates my abyss from time to time”.³³¹ Similarly, some of the greatest passages of *Season in Hell* anticipated the cultural innovations of early cinema, e.g. “the color of vowels” points to the onscreen title card, while the line “I fixed the vertigo” hints at the power of moving images to turn into a second reality:

³²⁵ Jules Verne, *Twenty Thousand Leagues Under the Sea*. Part 2, Chapter 23.

³²⁶ Verne probably had a line in Ecclesiastes 7 in mind: “Whatever exists is far off and most profound – who can discover it?” Ecclesiastes 7, Bible. New International Translation.
<https://biblehub.com/niv/ecclesiastes/7.htm>

³²⁷ Kristin Ross (1987). “Rimbaud and the Transformation of Social Space.” *Yale French Studies* 73 (117).

³²⁸ “How many hours of the night I watched beside his dear slumbering body, searching for why he wanted to escape from reality. Never had a man [homme] such a wish. I knew – without being afraid of him – that he could have been a serious danger to society. – Perhaps he had the secret of *changing life itself* [italics in original]? No, he was only searching, he told me. However his charity is enchanting, and I am its prisoner. No other soul could have the force – the force of despair! – to stand being mentored and loved by him. “ [“À côté de son cher corps endormi, que d’heures des nuits j’ai veillé, cherchant pourquoi il voulait tant s’évader de la réalité. Jamais homme n’eut pareil vœu. Je reconnaissais,—sans craindre pour lui,—qu’il pouvait être un sérieux danger dans la société.—Il a peut-être des secrets pour *changer la vie*? Non, il ne fait qu’en chercher, me répliquais-je. Enfin sa charité est ensorcelée, et j’en suis la prisonnière. Aucune autre âme n’aurait assez de force,—force de désespoir!—pour la supporter,—pour être protégée et aimée par lui.”] Arthur Rimbaud, *A Season in Hell. Deliria I*. This is my translation.

³²⁹ “Il faut être absolument moderne.” Arthur Rimbaud, *A Season in Hell. Farewell*. This is my translation.

³³⁰ “Je suis une bête, un nègre.” Arthur Rimbaud, *A Season in Hell. Bad Blood*. This is my translation.

³³¹ “Le travail humain! c’est l’explosion qui éclaire mon abîme de temps en temps.” Arthur Rimbaud, *A Season in Hell. Lightning*. This is my translation.

I loved idiotic paintings hung above doors, sets, canvases of acrobats, signboards [enseignes], printed illuminations [enluminures]; unfashionable literature, church Latin, erotic books without orthography, the novels of our ancestors, fairy-tales, little books from childhood, old operas, silly refrains, naive rhythms.

I dreamed of crusades, voyages of discovery you couldn't imagine, republics without histories, wars of extinguished religions, revolutions in mores, the displacement of races and continents: I believed in all enchantments.

I invented the color of vowels! – Black A, white E, red I, blue O, green U. – I set the rules of form and movement for every consonant, and with an instinctive rhythm, I flattered myself with inventing a poetic verb accessible, one day or another, to all of the senses. I reserved the translation.

It began as an exercise. I wrote silences, nights, I noted the inexpressible. I fixed the vertigo.³³²

On the revanchist side of the ledger, Rimbaud's fundamental ambivalence vis-a-vis French imperialism generated a toxic and disfiguring revanchism. One of the clearest expressions of this was a passage wherein a maritime panorama celebrating imperial whiteness momentarily oversteps its bounds, and triggers the possibility of an anti-colonial uprising ("I tried to invent new flowers, new stars, new flesh, new languages"). Rimbaud immediately suppressed this possibility by recourse to the archaic and discredited fantasy of the imperial tomb.³³³

-- Sometimes I see endless beaches in the sky covered with white [blanches] rejoicing nations. A giant vessel of gold, above me, flutters with multicolored flags in the morning breeze. I created every festival, all triumphs, all dramas. I tried to invent new flowers, new stars, new flesh, new languages. I believed I

³³² "J'aimais les peintures idiotes, dessus de portes, décors, toiles de saltimbanques, enseignes, enluminures populaires; la littérature démodée, latin d'église, livres érotiques sans orthographe, romans de nos aïeules, contes de fées, petits livres de l'enfance, opéras vieux, refrains niais, rythmes naïfs.

Je rêvais croisades, voyages de découvertes dont on n'a pas de relations, républiques sans histoires, guerres de religion étouffées, révolutions de mœurs, déplacements de races et de continents: je croyais à tous les enchantements.

J'inventai la couleur des voyelles!—A noir, E blanc, I rouge, O bleu, U vert.—Je réglai la forme et le mouvement de chaque consonne, et, avec des rythmes instinctifs, je me flattai d'inventer un verbe poétique accessible, un jour ou l'autre, à tous les sens. Je réservais la traduction.

Ce fut d'abord une étude. J'écrivais des silences, des nuits, je notais l'inexprimable. Je fixais des vertiges." Arthur Rimbaud, *A Season In Hell. Deliria II*. This is my own translation.

³³³ One of the unacknowledged subtexts of this passage was the fact that Napoleon III had passed away in British exile in January 1873 and was buried in a subdued ceremony in the village of Chislehurst, sixteen kilometers southwest of London. This was due partly to the fact that Prussian troops occupied a third of France until September 1873, but also to the deep-seated unpopularity of Bonaparte's rule during the late 1860s. As a result, the second Napoleon would never be publicly entombed in the manner of the first, e.g. there was no equivalent of the 1840 drama of the "return of the ashes", wherein the original industrial dynast was reburied in the Hôtel des Invalides.

had acquired supernatural powers. Well then! I should entomb my imagination and my memories! A shining glory [belle gloire: beautiful glory] of an artist and tale-teller carried away!³³⁴

³³⁴ “—Quelquefois je vois au ciel des plages sans fin couvertes de blanches nations en joie. Un grand vaisseau d’or, au-dessus de moi, agite ses pavillons multicolores sous les brises du matin. J’ai créé toutes les fêtes, tous les triomphes, tous les drames. J’ai essayé d’inventer de nouvelles fleurs, de nouveaux astres, de nouvelles chairs, de nouvelles langues. J’ai cru acquérir des pouvoirs surnaturels. Eh bien! je dois enterrer mon imagination et mes souvenirs! Une belle gloire d’artiste et de conteur emportée!”
Arthur Rimbaud, *A Season in Hell. Farewell*. This is my translation.

The other indispensable lyricist of the 1862-1878 conjuncture was Stéphane Mallarmé, whose prose-poem *The Future Phenomenon* (1865) signaled the moment when the carnival barker began to converge with the first Parisian department store advertisements:

In the anxious silence of every supplicating eye under the sun which, under water, submerges with the despair of a cry, here is a simple sales pitch [boniment: advertisement, spiel]: “No signboard [enseigne] regales you with an interior spectacle, because there is no painter capable of rendering even a sad shadow of such.”

“I present to you alive (and preserved through the years by sovereign science) a Woman [capitalized in original] of another time [autrefois].”³³⁵

This untimely Woman was halfway between Baudelaire’s glimpse of the elite or upper-tier female consumer and the considerably more plebian visual consumerism of Mallarmé’s landmark sonnet “Her Pure Nails”, worth quoting in full:

Her pure nails dedicating their onyx on high,
Anguish, this midnight, bearing a lampadophore [ornate funerary torch]
Now in vespéral dreams burned by the Phoenix
No longer collected by the cinerary amphora [funeral vase].

On the credenzas, in an empty salon: null ptyx, [ptyx: neologism invented by Mallarmé],
abolished trinket of sonorous inanity
(Because the Master has gone to draw tears from the Styx
with that one object honored by Nothingness).

But near the empty northern casement, gold
perishing perhaps from the decor
of unicorns kicking at a nymph with flame,

The latter, deceased in the mirror, yet still
transfixed in closed oblivion by the frame
in a septet of scintillations.³³⁶

³³⁵ “Dans le silence inquiet de tous les yeux suppliant là-bas le soleil qui, sous l’eau, s’enfonce avec le désespoir d’un cri, voici le simple boniment: ‘Nulle enseigne ne vous régale du spectacle intérieur, car il n’est pas maintenant un peintre capable d’en donner une ombre triste.’

‘J’apporte, vivante (et préservée à travers les ans par la science souveraine) une Femme d’autrefois.’” Stéphane Mallarmé.” *The Future Phenomenon*, 1865. This is my translation.

³³⁶ “Ses purs ongles très haut dédiant leur onyx,
L’Angoisse ce minuit, soutient, lampadophore
Maint rêve vespéral brûlé par le Phénix
Que ne recueille pas de cinéraire amphore

The hieratic and nobilitarian forms of temporality hinted at by the themes of the phoenix and the river Styx give way to a more democratic but destabilized image-production. This latter diffracts a mythological scene of unicorns and nymphs through a mirror, resulting in a proto-Impressionist phantasmagoria of scintillation. The text deploys self-repeating sibilances (the untranslatable sound-play of “aboli bibelot” or “abolished trinket”, “le Néant s’honore” or “honored by Nothingness”, and “scintillations sitôt le septuor”, “septet of scintillations”) to acoustically simulate the glistening allure of the department store shop-window, in much the same way that Monet’s churning brush-strokes embodied the energies of the industrial factory. Far from being an archaic remnant of the feudal past, the “null ptyx” is the ur-model of the international brand name, whose implied nothingness is both the cause and the effect of the post-1860 industrially-mediated phantasmagoria.

What the text could not quite bring itself to portray, on the other hand, was the possibility that the female owner of those obsidian nails might stare back at the narrator with the scandalous autonomy of Monet’s *Woman With a Parasol* (1875) or Berisot’s *Portrait of a Lady* (1876). In fact, female autonomy formed the central contradiction of Mallarmé’s *The Afternoon of a Faun* (1876), which replaced the mythological scene of *Her Pure Nails* with the ambiguous and diffuse encounter of a satyr with two nymphs. The bulk of the poem recounts the satyr’s attempt to literally and figuratively possess the bodies and minds of the nymphs via a sexualized consumerism.³³⁷ After each attempt plunges into ignominious failure, the result is a stark psychological realism:

Just consider...

Sur les crédences, au salon vide: nul ptyx,
Aboli bibelot d’inanité sonore,
(Car le Maître est allé puiser des pleurs au Styx
Avec ce seul objet dont le Néant s’honore).

Mais proche la croisée au nord vacante, un or
Agonise selon peut-être le décor
Des licornes ruant du feu contre une nixe,

Elle, défunte nue en le miroir, encor
Que, dans l’oubli fermé par le cadre, se fixe

De scintillations sitôt le septuor.” Stéphane Mallarmé, “Her Pure Nails”, 1868. This is my translation.

³³⁷ Consider this moment which transforms the sexualized female of the nude painting into the sexualized consumer icon of the titillating mass-produced postcard: “Fainting from the ordinary dream of a back / Or a pure flank followed with my eyes closed, / A sonorous, vain and monotonous line.” [“Évanouir du songe ordinaire de dos / Ou de flanc pur suivis avec mes regards clos, / Une sonore, vaine et monotone ligne.”] Stéphane Mallarmé, *Afternoon of a Faun*. This is my translation.

whether the women you browse [glose: to gloss]
constitute a wish of your fabulous senses!³³⁸

At the poem's culmination, the satyr drops the pursuit of the nymphs altogether for the sake of a last-minute gamble on a queen.³³⁹ While this latter could be read in a number of ways, as a reference to France's Joan of Arc, to the revolutionary icon of Marianne, and even to Britain's Queen Victoria, its primary function is to reconfigure the satyr's desire to possess women in general into the desire to possess a specific woman:

I hold the queen!

Oh certain punishment...

No, but the soul

of empty words and this dulled [allourdi] body
succumbing belatedly to the proud silence of noon:
nothing left but to sleep in the oblivion of blasphemy,
on the weathered sand and as I please
open my mouth to the efficacious star of wine!

Farewell, couple; I will see the shadow you became.³⁴⁰

³³⁸ "Réfléchissons . . .

ou si les femmes dont tu gloses

Figurent un souhait de tes sens fabuleux!" Stéphane Mallarmé, *Afternoon of a Faun*. This is my translation.

³³⁹ We will analyze in Chapter 10 how Mallarmé developed the theme of the national imperial gamble still further in *A Throw of the Dice Doesn't Abolish Chance* (1897).

³⁴⁰ "Je tiens la reine !

Ô sûr châtiment...

Non, mais l'âme

De paroles vacante et ce corps allourdi
Tard succombent au fier silence de midi :
Sans plus il faut dormir en l'oubli du blasphème,
Sur le sable altéré gisant et comme j'aime
Ouvrir ma bouche à l'astre efficace des vins !

Couple, adieu ; je vais voir l'ombre que tu devins." Stéphane Mallarmé, *Afternoon of a Faun*. This is my translation.

The imperial male subject's dream of an ecstatic union with the colonial female object disintegrates into the depressing reality of words drained of their meaning by advertising, and the dull-witted drudgery of modern office and factory labor (Mallarmé was a notoriously inattentive secondary school teacher of English who stumbled his way to early retirement). Meanwhile, Baudelaire's potentially redemptive glass of wine is reduced to the stupefying, headache-inducing stupefying beverage of mass consumption.

What makes this passage so extraordinary, on the other hand, is the untranslatable internal rhyme between "reine" (queen) and "l'ame" (soul) in the first and third lines, combined with the visual frame of the three line breaks cascading down the page. This is the lyric version of the printed advertisement of the daily newspaper or periodical, which disrupts the flow of the text with the blaring offer of a purchasable commodity or service.

This advertisement is sublated by the final line break and concluding line of the poem, which depicts that strange new thing, the heteronormative couple of industrial consumerism. This is a theme Mallarmé first broached in one of the most evocative lines of *Funereal Toast*, written to the memory of writer and journalist Théophile Gautier: "That haggard crowd! which proclaims: we are / the sad opacity of our future specters."³⁴¹

Where this latter evoked the spectral internationalism of the writers and critics of the future, the ending of *Afternoon of a Faun* depicted the future anteriority of industrial consumerism. The shadow cast by the couple is not what has happened, it is the impressionistic recording of what could still happen at some point in the future. Mallarmé's closing line is nothing less than the sublation of the speculative or credit-fueled consumer purchase by the democratic choice of romantic partners, cultural identities, and collective affiliations.

³⁴¹ "Cette foule hagarde! elle annonce: Nous sommes / La triste opacité de nos spectres futurs." Stéphane Mallarmé, *Funereal Toast*. 1873. This is my translation.

Chapter 8

The Three Lockdowns of the Semi-periphery

Between 1870 and 1913, the share of the planetary population residing in the five core polities of Belgium, Britain, France, the Netherlands and the United States increased from 9% in 1870 to 11.1%. During the same period, the demographic share of the forty polities of the semi-periphery increased from 27% to 31.1%,³⁴² while the corresponding share of the periphery diminished from two-thirds to three-fifths of humanity.

To be sure, the shrinkage of the periphery was somewhat overstated by the fact that the polities of the core and semi-periphery were in the first stage of the fertility transition of industrialization, namely a population boom triggered by falling death rates and rising life expectancy.³⁴³ What cannot be overstated, on the other hand, was the explosive potential generated by the increasing divide between the core polities and everyone else:

Figure 24. World population and GDP share of the core, semi-periphery and periphery, 1870-1913.³⁴⁴

Region	Population Share 1870	Share of World GDP 1870	Per Capita GDP 1870	Population Share 1913	Share of World GDP 1913	Per Capita GDP 1913
Core	9%	26.5%	2,478	11.1%	34.5%	4,753
Semi-periphery	27%	34.8%	1,113	31.1%	41.0%	2,012
Periphery	64%	38.7%	530	57.9%	24.5%	645
World total	1.1 billion	—	870	1.7 billion	—	1,524

³⁴² We define the core as the ethnic cores of the empires of Belgium, Britain, France, the Netherlands and the United States, the semi-periphery as the polities of Central and South America, the British colonies of Australia, Canada, Hong Kong, Ireland, New Zealand, Singapore and South Africa, the non-core polities of continental Europe, the westernmost colonies and largest cities of Russia, the northwestern colonies of the Ottoman empire, the city of Shanghai in Qing China, and Japan, and the periphery as all other populations and polities of Africa and Asia.

³⁴³ We will see in volumes 7 and 8 how the 1860-1914 population boom and 1914-1945 demographic stabilization of the core and semi-periphery would be replicated by the 1945-1973 population boom and 1973-2008 demographic stabilization of the periphery.

³⁴⁴ Data from Angus Maddison 2010. <http://www.ggdc.net/maddison/oriindex.htm>.

While the polities of the semi-periphery achieved significant population increases, industrial growth and territorial expansion during Global Steam, none of them could keep pace with the core in terms of productivity. Collectively, the per capita GDP of the semi-periphery declined from 45.6% of the core in 1870 to 42.3% by 1913, while the per capita GDP of the periphery plummeted from 21.4% to 13.6% of the core during the same period.

The paradox of the semi-periphery was that the more it succeeded in industrializing, the more keenly its oligarchic and imperial elites felt the sting of being the designated losers of a rigged competition. Whereas the Red Queen in Lewis Carroll's *Alice in Wonderland* had to run faster and faster just to stay in place, the semi-periphery ran faster and faster only to fall ever further behind its core competitors.

Just as importantly, per capita GDP in the semi-periphery was twice the level of the periphery in 1870, but three times the latter by 1913. This made the periphery an increasingly tempting target for colonial expansion by semi-peripheral empires. It also exacerbated imperial antagonisms within the semi-periphery, as faster-growing polities sought to take advantage of slower-growing ones.

The less the Austrian, Japanese, Italian and German empires could keep up with the core polities, the more their elites dreamed of African and Asian empires of their own. Similarly, the less the Russian empire could keep up with its Austrian, German and Japanese neighbors, the more its elites dreamed of annexing Qing and Ottoman territory. For their part, the less the Ottoman, Spanish and Portuguese empires could compete with the other world empires, the more their polities recoiled into industrial revanchism. Last but not least, the less any given oligarchic republic was able to industrialize, the greater its chance of falling prey to industrial dynasts and neocolonial immiseration.³⁴⁵

We will argue that the crisis of the semi-periphery is best understood in terms of three models of industrial closure, each of which blocked the pathways of industrial opportunity open to the core polities. These models were the lockdown of the twenty-nine oligarchic republics exemplified by Argentina, the lockdown of the six national imperial capitalisms exemplified by the German empire, and the lockdown of the five dynastic empires of capital exemplified by the Russian empire.

The first step in theorizing these lockdowns is to dispel three of the most widespread myths concerning these three polities, variants of which continue to circulate to this day. The first myth is that Argentina was destined to become the next America, but was somehow derailed by the outbreak of World War I. The second myth was that Germany was destined to become the next America, but was derailed by Prussian militarism. The third myth was that Russia was destined to become the next America, but was derailed by Bolshevik fanaticism.

All three myths share a common counterfactual argument worth analyzing in detail. This is the notion that there was a genuine window of opportunity available to the polities of the

³⁴⁵ Even the three partial exceptions to this contradiction, namely the British semi-peripheries of Australia, Canada and New Zealand, confirm the rule. All three had the advantages of vast internal frontiers and unfettered access to imports of British and US capital. Yet none of the three managed to keep pace with the United States during Global Steam, generating irresistible political pressure for their electoral decolonization during the 20th century.

semi-periphery – that if only their economies had somehow been more competitive, their political systems more egalitarian, and their cultural institutions more innovative, they could have joined the core.

Our counter-argument is that these three polities were not the hapless victims of neocolonial failure. They were prisoners of semi-peripheral success. Argentina was the single most successful of the twenty-nine oligarchic republics of the semi-periphery, nine of which were located in Europe and twenty in the Americas.³⁴⁶ Germany was the single most successful of the six national imperial capitalisms of the semi-periphery, a group which included Australia, Canada, Italy, Japan and New Zealand. Russia was the single most successful of the five dynastic empires of capital in the semi-periphery, a group which included the Austrian, Ottoman, Portuguese and Spanish empires.

Yet none of these three polities became self-financing core polities during Global Steam. Argentina would spend the century after 1914 in a slow but inexorable decline vis-a-vis the polities of the core, while the empires of Germany and Russia would spend the third supercycle waging apocalyptic wars against each other, genociding their colonial peripheries, and falling ever further behind the United States.³⁴⁷ In fact, their individual failures to acquire core status were broadly representative of the failure of their respective groups to ascend to the core.

Our first model of semi-peripheral lockdown is Argentina. After consolidating its polity in the wake of the 1864-1870 War of the Triple Alliance, Argentina's per capita GDP tripled between 1880 and 1910, rising from one-third to two-thirds the British level, an achievement comparable to that of semi-peripheral Denmark.³⁴⁸ The Argentine boom was built on the genocide of Argentina's indigenous peoples and the seizure of their land – total cultivated land increased from 0.5 million hectares in 1870 to 24.5 million in 1914³⁴⁹ – combined with the large-scale import of British capital, massive agricultural exports to European markets, and copious inflows of immigrants.³⁵⁰

³⁴⁶ The nine European polities of the semi-periphery included Bulgaria, Greece, Denmark, Montenegro, Norway, Romania, Serbia, Sweden and Switzerland. The twenty Central and South American polities of the semi-periphery included Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.

³⁴⁷ Conversely, the capacity of the twenty-two Union states to join the core in 1862 was due not to the success of the 1789-1860 United States as a semi-periphery, but its catastrophic failure in the 1861-1865 US Civil War.

³⁴⁸ Fernando Rocchi. *Chimneys in the Desert: Industrialization in Argentina During the Export Boom Years, 1870–1930*. Stanford: Stanford University Press, 2006 (18).

³⁴⁹ José C. Moya, "Chapter 1: Spanish Emigration to Cuba and Argentina." In: *Mass Migration to Modern Latin America*. Edited by Samuel L. Baily and Eduardo José Míguez. Wilmington: Rowman & Littlefield, 2003 (19).

³⁵⁰ "...in 1913 more than 60 per cent of foreign investment in Argentina was British; British investment in Argentina was also about 10 per cent of the total Britain invested abroad. In the developed eastern core of the country British influence was almost ubiquitous. In 1898 British engineers completed the construction of a deep-draught port in Buenos Aires. Here and in several other cities they also developed lengthy tramway networks and a multitude of gas and sewage companies." David Rock, *The Political Economy of*

Argentina's immigrant inflows were a significant fraction of the larger wave of migration from the European semi-periphery and Asian periphery to the two Americas and to the British empire. On the conservative assumption that half of all immigrants returned to their point of origin or journeyed to other locations, a total of 16.1 million migrants moved to the US, 6.3 million to Central and South America, 4.35 million to the British settler-colonial offshoots of Australia, Canada and New Zealand, and 0.43 million to colonized Africa between 1830 and 1930, for a grand total of 37.1 million.³⁵¹ Somewhere between three quarters to four fifths of all migrants to Central and South America between 1886 and 1930 were male, resulting in an equivalent gender skew in their home countries.

These immigrant flows were strongly marked by regional preferences. For example, about 5 million German immigrants arrived in the United States between 1850 and 1930, with a peak in the 1880s. A total of 4.1 million Italians traveled to the US and 2.3 million to Argentina between 1870 and 1914.³⁵² About 2 million migrants left Portugal between 1855 and the 1930s, four-fifths of whom traveled to Brazil and one fifth to the United States.³⁵³ There was also significant Asian migration to the Americas during this period, in the form of Japanese migration to Brazil, Canada, Peru and the US, Chinese migration to Cuba and the US, and South Asian migration to the British and Spanish Caribbean.

Thanks to these inflows, immigrants comprised 27% of Argentina's population of about 7 million by 1914. Of these two million immigrants, 44.5% were from Spain, 39.7% were from Italy, 4.5% were from the Russian empire and 3.1% from the Middle East.³⁵⁴ This massive flow of fully waged labor powered a titanic economic boom.

"By 1914, Argentina had thus become the primary exporter par excellence, intimately linked with the industrial economies of Western Europe," observed David Rock. "Britain took its meat and a large proportion of its cereals, Germany its unwashed wool, France its sheepskins. 90 percent of Argentina's exports were primary goods produced in the pampean region; more than 85 percent of them went to Western Europe."³⁵⁵ Argentina's elites captured a significant share of world agricultural commodity rents of Global Steam between 1880 and 1910: "It [Argentina] was the largest exporter of maize and linseed. It was second in wool, and third in live cattle and horses. If it ranked only sixth as a producer of wheat, it was still the third, and in some years the second, largest exporter."³⁵⁶

The following chart illustrates how Argentina's economic boom surpassed that of Denmark, Sweden and Switzerland, and far outdistanced that of Mexico and Norway (only twelve polities are shown due to limited data):

Argentina 1880-1946 (66).

³⁵¹ Samuel L. Baily and Eduardo José Míguez, editors. *Mass Migration to Modern Latin America*. Wilmington: Rowman & Littlefield, 2003 (xiv).

³⁵² Samuel L. Baily. "Chapter 4: Italian Immigrants in Buenos Aires and New York City 1870-1914: A Comparative Analysis of Adjustment." *Mass Migration to Modern Latin America*. (69).

³⁵³ Maria Ioannis B. Baganha. "Chapter 3: Portuguese Transatlantic Migration." *Mass Migration to Modern Latin America* (52, 55).

³⁵⁴ José C. Moya, *Mass Migration to Modern Latin America* (23).

³⁵⁵ David Rock, *The Political Economy of Argentina 1880-1946* (64).

³⁵⁶ David Rock, *The Political Economy of Argentina 1880-1946* (69).

Figure 25. Twelve republics of the semi-periphery ranked in order of highest to lowest increase of domestic per capita GDP versus British per capita GDP, 1870-1913.³⁵⁷

Polity	1870	1913
Argentina	41%	77%
Chile	40%	61%
Switzerland	66%	87%
Sweden	43%	62%
Denmark	63%	79%
Mexico	21%	35%
Peru	13% ³⁵⁸	21%
Norway	43%	50%
Colombia	22% ³⁵⁹	25%
Venezuela	19%	22%
Uruguay	68%	67%
Brazil	22%	16%

The fatal weakness of the Argentine model of neocolonial accumulation, on the other hand, was the fact that its oligarchic elites were under no political compulsion to distribute large amounts of land to yeoman farmers, nor were they under any economic compulsion to reinvest the profits from agricultural exports into manufacturing. While Argentina's per capita wealth rose from the lower third of the semi-periphery in 1860 to near-core status by 1910, this wealth was based almost entirely on the export of agricultural commodities for imports of manufactured goods.

It was precisely Argentina's agricultural sector, the source of its incomparable wealth, which was also the cause of its long-term stagnation. Jeremy Adelman has highlighted the toxic

³⁵⁷ For the sake of comparison, France's per capita GDP in 1870 and 1913 was 59% and 71% that of Britain, while the comparable US figures were 77% and 108%. Data from Angus Maddison 2010. <http://www.ggd.net/maddison/oriindex.htm>.

³⁵⁸ Peruvian data is from 1896.

³⁵⁹ Colombian data is from 1900.

effects of Argentina's elite stranglehold on land in comparison to Canada's far more democratic process of land distribution, which was modeled on the 1862 Homestead Act of the United States:

The process of land allocation was largely a public affair in Canada and a private affair in Argentina. Two important consequences flowed from the different roles of the state. First, the presence of the public domain in Canada ensured that land prices did not rise too high. Private agents could not sell lots at high prices because newcomers could opt for the ten-dollar quarter-sections. No such ceiling existed in Argentina, where newcomers aspiring to own land could only turn to the private market. Land prices soon became unaffordable for most immigrants to Argentina. Second, strict guidelines in Canada prevented the formation of a class of large landowners. The Canadian dominant class was less interested in landownership. Indeed, Canada's capitalists, based in Montreal and Toronto, so far from the barren prairies, preferred to let pioneer families incur the risks associated with arable production. In Argentina, with its long tradition of pastoral production, where land was a more secure and lucrative investment than other enterprises, a new elite emerged whose principal occupation was leasing land to producers and grazing high-quality herds of cattle. The interests of each region's dominant class and the state's policies helped determine how public land was allocated.³⁶⁰

Of course, there were exceptions to the neocolonial rule. The most significant was Argentina's indigenous food processing sector, which developed a number of competitive products:

Food production expanded in peanut oil, canned food, starch (which overtook imports), rice processing, and, even more successfully, the increasingly popular dulce de membrillo jellied quince, a cheap article that fit well into depression times. Similarly, domestic liqueur production became concentrated on a few products that displaced imports after a long battle. Nevertheless, the most dramatic of all these changes occurred in a new product that Argentines learned to consume in a different way: 'packaged coffee.' Its creator, Abel Saint, based his success on new marketing strategies, transforming bulk sales into brand-name commercialization, the same strategy employed contemporaneously in the food industry in the United States and Western Europe. Mr. Saint's cans of café torrado (toasted coffee) flooded stores when customers realized they could keep the article at home and enjoy a cup of coffee whenever they wanted instead of depending upon store owners' schedules.³⁶¹

However, these enterprises remained industrial islands amidst a sea of neocolonial extractionism. The majority of Argentina's commodity rents were siphoned off by the US and British-owned companies which owned Argentina's beef exporting industries, much as British

³⁶⁰ Jeremy Adelman (1992). "The Social Bases of Technical Change: Mechanization of the Wheatlands of Argentina and Canada, 1890 to 1914." *Comparative Studies in Society and History* 34:2 (275-276).

³⁶¹ Fernando Rocchi, *Chimneys in the Desert* (32).

and French companies extracted most of the surplus from the steel mills of colonial Ukraine's Donbas region and the largest factories of imperial St. Petersburg and Moscow.³⁶² Thanks to this neocolonial dependence, Argentina sank from near-core status in 1910 to the upper third of the semi-periphery by 1945, to the middle third of the semi-periphery between 1973 and 2008, and to the lower third of the semi-periphery between 2008 and 2020.³⁶³

What overdetermined Argentina's failure to ascend to the core was the fact that its small urban proletariat, its land-hungry subsistence farmers, and its landless partly waged workers and sharecroppers were unable to form a political coalition capable of wresting power from Argentina's elite land speculators and rural landlords. In the United States, a coalition of northern fully waged, northern partly waged, and southern wageless laborers put enough pressure on the Republican Party to fundamentally transform the US state between 1862 and 1865 and to carry out the limited reforms of the 1865-1876 Reconstruction.

No such comparable coalition emerged in Argentina. While nominally a constitutional republic, in practice Argentina was an oligarchic despotism with limited electoral participation. This despotism ruled through the National Autonomist Party which controlled Argentina's national polity between 1874 and 1916. The exemplary politician of the NAP was Julio Roca, the general who led the Conquest of the Desert (1875-1884), a war which slaughtered thousands of indigenous inhabitants of Patagonia and handed over their lands to Argentina's oligarchs. Roca later became president of Argentina from 1880-1886, ruled as the behind-the-scenes arbiter of the oligarchs between 1886 and 1898, and served as president once more from 1898-1904.³⁶⁴

To be sure, Roca's twenty-four year system of "Roquismo" or rule by oligarchic arbitration, the linchpin of the thirty-two year national tenure of the NAP, was intermittently shaken by a series of republican-tinged uprisings in Argentina's largest urban centers. The three most famous of these uprisings were the July 26-29, 1890 Revolution of the Park in Buenos

³⁶² "By 1914 American companies, headed by Armour and Swift, controlled between a half and two-thirds of Argentina's beef exports, leaving the British share at under 30 per cent. Yet although Americans now dominated the industry, more than four-fifths of Argentina's beef exports continued to be sent to the United Kingdom." David Rock, *The Political Economy of Argentina 1880-1946* (68).

³⁶³ According to Angus Maddison's data, Argentina's per capita GDP was 77% of the comparable US figure in 1910, 63% in 1920, 67% in 1930, 52% in 1940, and 52% in 1950. According to the World Bank's data, which begins in 1960 for the US and 1962 for Argentina, Argentina's per capita GDP was 36% of the comparable US figure in 1962, 31% of the US in 1973, 19% of the US by 2008 and 13% of the US by 2020. Data from Angus Maddison 2010 and World Bank.
<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>.

³⁶⁴ "Through the cooptation of the provincial elites in a network of alliances, Roca was able to build up a highly effective political machine commanded from the top. The Governor's League, la Liga de los Gobernadores, was an elaborate system of clientelistic politics based on the Executive's control over the so-called provincial situations (las situaciones provinciales). Roca's political machine, in turn, was put at the service of the economic project of the 'generation of the eighties', which combined economic liberalism with a staunch political conservatism under the economic hegemony of the landed upper classes of Buenos Aires province." Francisco Panizza (1997). "Late Institutionalisation and Early Modernisation: The Emergence of Uruguay's Liberal Democratic Political Order." *Journal of Latin American Studies* 29:3 (682).

Aires, the nationwide uprising of July 28-October 1, 1893 later termed the 1893 Revolution, and finally a smaller uprising on July 4-8, 1905.

While all three uprisings were defeated, many of their participants played a key role in the reform coalition led by the Radical Civic Union party which legislated universal male suffrage and voting by secret ballot in 1912, and demolished the NAP as an electoral force in 1916. The residents of Buenos Aires also made history by electing Alfredo Palacios on March 13, 1904, the first socialist member of Argentina's national legislature.³⁶⁵

We will examine in future volumes how this pattern of oligarchic hegemony, neocolonial accumulation and intermittent popular resistance overdetermined Argentina's post-1914 decline. For now, it is worth emphasizing Argentina's neocolonial agro-industrialism and oligarchic despotism were largely replicated by the other twenty-five other polities in its peer group, the main differences being that these latter attracted fewer immigrants and less British foreign investment, and were more commonly ruled by industrial dynasts rather than by systems of electoral patrimonialism.³⁶⁶

Perhaps the single most typical of these industrial dynasts was the 1876-1910 rule of Mexico's Porfirio Díaz. Díaz originally seized power on the basis of his prominent role in Mexico's victory against Bonaparte's 1862-1867 imperial intervention. Politically, the thirty-four year Porfiriato constructed an oligarchic despotism halfway between Argentina's electoral Roquismo and the constitutional monarchies of Bulgaria, Romania and Serbia. This despotism legitimated its rule via the authoritarian ideology of the "científicos" (a neologism which comes closest to "scientificists"), the intelligentsia who administered Mexico's neocolonial accumulation model.³⁶⁷

Economically, the Porfiriato was a system of oligarchic rent-skimming combined with neocolonial predation. This latter was famously incarnated by the Mexican business empire of expatriate British magnate Weetman Pearson, who ensured that Díaz and his top lieutenants were the largest shareholders of his firm. Since Mexico's history of foreign loan defaults made it almost impossible for Mexico to directly access British capital markets, Pearson financed a vast

³⁶⁵ Palacios played a prominent role in legislating a wide range of early social reforms. See: Lucas Poy (2018). "Theory and practice of the 'first socialist deputy of the Americas'. The activity of Alfredo Palacios in the Argentine Parliament and its impact in the socialist press, 1904-1908." *Nuevo Mundo Mundos Nuevos*. <http://journals.openedition.org/nuevomundo/71852>.

³⁶⁶ The major Central and South American industrial dynasts of Global Steam included the rule of Mariano Melgarejo (1864-1871) in Bolivia, the rule of Pedro II (1831-1889) in Brazil, the rule of Rafael Núñez (1880-1892) in Colombia, the rule of Buenaventura Báez (1849-1853, 1856-1857, 1865-1866, 1868-1874, and 1876-1878) in the Dominican Republic, the rule of Rafael Carrera (1851-1865), Justo Rufino Barrios (1873-1885) and Manuel Estrada Cabrera (1898-1920) in Guatemala, the rule of Porfirio Díaz (1876-1910) in Mexico, the rule of Francisco Solano López (1862-1870) in Paraguay, and the rule of Lorenzo Latorre (1876-1880) in Uruguay.

³⁶⁷ The parallels with Putinism, the national imperial revanchism of post-1991 Russia's commodity oligarchs, are striking. After serving one term, Díaz selected one of his trustworthy followers, Manuel González, to serve as President for the following term, but remained the power behind the throne and then later reverted to open rule for the remainder of his reign, very much as Putin staged Medvedev's fictitious Presidency between 2008-2012 and then returned to permanent rule thereafter.

network of railroads and oil wells by issuing approximately one-third of Mexico's public debt.³⁶⁸

Conversely, the fatal weakness of Díaz' rule was its insatiable landlordism. Mexico's oligarchs did not reinvest the surplus from their oil exports into the industrial economy, but instead bought up land, slowing Mexico's economic growth and exacerbating the simmering crisis of the agricultural sector. John Womack Jr. describes the plutocratization of land ownership in the Mexican federal state of Morelos, the regional center of the later Zapata insurgency:

By 1908 the seventeen owners of the thirty-six major haciendas in the state owned over 25 percent of its total surface, most of its cultivable land, and almost all of its good land. And as the planters took over increasingly scrubbiest fields, they required increasing supplies of water to irrigate them. Investment in irrigation works probably went as high as that in milling machinery. For his Tenango hacienda Luis García Pimentel put \$166,000 into construction of tunnels, canals, aqueducts, dams, sluices, bridges, and cutoff valves, to bring water from the Cuautla River sixty miles away. And along the same river Ignacio de la Torre y Mier and Vicente Alonso together invested over \$210,000 in water works for their plantations. During 1908 domestic sugar prices rose considerably, because the government doubled the import duty on sugar to protect the native growers; and surer, fatter profits encouraged further investment and bigger production.

Morelos haciendas thus became famous as the most modern in Mexico. They deserved their reputation. In 1908 the twenty-four mills in the state accounted for well over a third of the country's total sugar production. After Hawaii and Puerto Rico, Morelos was the most productive cane-sugar region in the world.³⁶⁹

In addition to chronic misrule by industrial dynasts and oligarchic elites, Argentina's peer group of twenty-nine semi-peripheries suffered from one other neocolonial affliction. The six polities which caught up significantly with Britain in terms of per capita GDP – Argentina, Chile, Denmark, Sweden, Switzerland and Uruguay, a group comprising 19.3 million citizens in 1900 – succeeded only because they had significant access to British investment and consumer demand. Conversely, the twenty-three other polities of this peer group, comprising 66 million citizens, lacked this access and either stagnated or grew much more slowly.

For example, one of the key motors of the Chilean economy was the export of wheat, which rose from an average of 29,200 tons in 1856-1860 to 152,400 tons in 1871-1875.³⁷⁰ "As

³⁶⁸ "Pearson's contracts account for a third of all effective investment derived from Mexican public debt. The railway companies were other major beneficiaries, having been first subsidised and then nationalised out of 44 per cent of all public debt. The remaining 23 per cent went to pay other public works contractors. As has already been shown in the case of the Gran Canal and Veracruz contracts, less than a half and possibly no more than a third of the money paid to Pearson was actually invested in Mexico." Patricia Connolly (1999). "Pearson and Public Works Construction in Mexico, 1890-1910." *Business History* 41:4 (60).

³⁶⁹ John Womack Jr. *Zapata and the Mexican Revolution*. New York: Random House, 1968 (49-50).

³⁷⁰ Cristóbal Kay. "Chapter 5. The development of the Chilean hacienda system, 1850-1973." In: *Land and Labour in Latin America: Essays on the Development of Agrarian Capitalism in the Nineteenth and*

an example of the impact created by the external market,” noted Cristóbal Kay, “land dedicated to cereals increased from approximately 130,000 to 400,000 hectares between 1850 and 1875.”³⁷¹ However, increased wheat production from Argentina, Canada, colonial Ukraine and the US drove world wheat prices down by approximately fifty to sixty percent between the 1870s and the 1890s,³⁷² at the same time that Chile’s land-holding oligarchy put a brake on agricultural productivity. Chilean wheat became steadily less competitive, and exports fell from their 1871-1875 peak down to an average of only 38,500 tons during 1901-1905.³⁷³ The response of Chile’s elites was to double down on exports of sodium nitrate fertilizers to British, continental European and US farmers, until prices collapsed due to the invention of chemical fertilizers in the 1910s.

Denmark’s growth was due primarily to a post-1880 boom in agricultural exports to British markets. By 1900, Danish producers supplied two-fifths of Britain’s butter and half of its bacon. The secret of Denmark’s success was the reorganization of its state in the wake of its military defeat and partial dismemberment by the Austrian and Prussian empires in 1864,³⁷⁴ combined with cleverly-disguised trade mercantilism. When the Danish government removed tariffs on grain imports in 1865, tariffs on cheese were retained, creating a covert subsidy which Henriksen, Lampe and Sharpe estimated at 5% of gross income for Denmark’s dairies between 1864 and 1900.³⁷⁵ That said, Denmark’s dairy industry also suffered from falling agricultural prices, as the world price of butter fell by about one-third between the 1870s and the 1890s.³⁷⁶

Sweden’s industrialization began in the 1870s on the basis of exports of timber and oats to British markets.³⁷⁷ Between 1881-1884 and 1911-1913, the share of timber as a percent of all exports fell from 40.4% to 26.1%, and the share of agricultural exports fell from 18.0% to 6.3%, whereas the share of engineering-based and paper-based exports rose from 7.2% to 28.1%.³⁷⁸ In

Twentieth Centuries. Kenneth Duncan, Ian Rutledge and Colin Harding, editors. London: Cambridge University Press, 1977 (109).

³⁷¹ Cristóbal Kay, *Land and Labour in Latin America* (110).

³⁷² Peter M. Solar and Jan Tore Klovland (2011). “New series for agricultural prices in London, 1770-1914.” *The Economic History Review* 64:1 (86).

³⁷³ Cristóbal Kay, *Land and Labour in Latin America* (109).

³⁷⁴ For a comprehensive analysis of Denmark’s transformation from a constitutional monarchy to a semi-peripheral republic during the 19th century, see: Uffe Østergård. “Nation-Building and Nationalism in the Oldenburg Empire.” In: *Nationalizing Empires*. Edited by Stefan Berger and Alexei Miller. Budapest: Central European University Press, 2015 (461-510).

³⁷⁵ Ingrid Henriksen, Markus Lampe and Paul Sharpe (2012). “The strange birth of liberal Denmark: Danish trade protection and the growth of the dairy industry since the mid-nineteenth century.” *Economic History Review* 65:2 (770-788).

³⁷⁶ Peter M. Solar and Jan Tore Klovland, *The Economic History Review* 64:1 (86).

³⁷⁷ “Around 1830 an export of grain began on a small scale. This export grew in importance and reached its maximum in the 1870’S. The exports consisted mainly of oats, of which England took the major share. There they were used to provide the omnibuses of that time with fuel (in the 1830s, London’s largest transport enterprise employed more than 300,000 horses).” Lennart Jörberg (1965). “Structural change and economic growth: Sweden in the 19th century.” *Economy and History* 8:1 (14-15).

³⁷⁸ Lennart Jörberg, “Structural change and economic growth: Sweden in the 19th century” (36).

addition to outsized export earnings to Britain and continental Europe, Sweden levied high tariffs on imports in the 1880s and 1890s. It also benefited from the emigration of an estimated 1 million citizens to the Americas and Australia during the late 19th century, which created significant upward pressure on wages in a polity which numbered only 5.1 million in 1900.³⁷⁹ That said, half of Swedish employment was still in agriculture as late as 1914, the classic sign of semi-peripherality.³⁸⁰

Switzerland experienced significant local industrialization during this period, thanks to the growth of local food processing firms such as Nestle and Maggi, as well as watchmaking and the industrial chemical industry. The agricultural share of the workforce plummeted from a majority in the early 1850s down to 36% by 1888, and to 25% by 1914.³⁸¹ Yet just as Denmark's export boom was dependent on British consumer demand, British tourism was a key driver of Switzerland's internal growth. An estimated 350,000 foreign tourists visited Switzerland annually by the end of the 19th century, most of which were British.³⁸² Tourist expenditures were a significant source of consumer demand in a polity with a population of 3.3 million in 1900.

Uruguay followed much the same neocolonial agricultural model as Argentina, the main difference being its much smaller land mass and a correspondingly more rapid process of urbanization. By 1900, Uruguay's urbanization rate reached 30%, as compared to 16.8% in Argentina, 14.1% in Chile, 15% in Cuba and 40% in the United States.³⁸³

Outside of these six overperformers, the other twenty-three other oligarchic republics of Argentina's peer group either made minimal progress or else stagnated at a fraction of British wealth levels. While the economies of Mexico, Norway and Peru did slightly better while those of Brazil, Colombia and Venezuela did slightly worse, all remained within the middle third to the poorest third of the semi-periphery.

The economies of these twenty-three polities were dominated by exports of unprocessed mineral fertilizers (most notably guano, a.k.a. fossilized bird excrement, as well as sedimentary deposits of phosphates and sodium nitrate) and coffee. The main center of the guano boom was a series of Pacific islands controlled by Peru:

All told, from 1840-1880, Peru exported an estimated 12.7 million metric tons of guano from its islands with a sale value in the range of £150 million. This amount of guano contained approximately 1.6 million metric tons of nitrogen, similar quantities of phosphate and lime (CaO), 300,000 metric tons of potash (K₂O), and smaller amounts of manganese, iron, and other trace elements necessary for plant growth. Even though its nutrients were not balanced to true agricultural needs, Peruvian guano was the most complete, most concentrated fertilizer available on the world market for decades. British farmers

³⁷⁹ Lennart Jörberg, "Structural Change and Economic Growth: Sweden in the Nineteenth Century" (10).

³⁸⁰ Lennart Jörberg, "Structural change and economic growth: Sweden in the 19th century" (6).

³⁸¹ Government of Switzerland. *Switzerland in the 19th Century*. November 27, 2017 (4).

<https://www.eda.admin.ch/aboutswitzerland/en/home/geschichte/epochen/der-bundesstaat-im-19-jahrhundert.html>.

³⁸² Government of Switzerland, *Switzerland in the 19th Century* (6).

³⁸³ Francisco Panizza (1997). "Late Institutionalisation and Early Modernisation: The Emergence of Uruguay's Liberal Democratic Political Order." *Journal of Latin American Studies* 29:3 (684).

purchased the lion's share, followed by German, U.S., and other European agriculturists. During the 1870s, plantations in Cuba, Puerto Rico, and other Caribbean colonies, Mauritius, and China together bought 134,000 metric tons. Thus, the Peruvian guano trade became truly global, though it strongly favored northwestern Europe.³⁸⁴

The financial contracts for these exports were monopolized by a British trading firm, the equivalent of the Kolkata agency houses which dominated South Asia's exports of jute and indigo. Where Peruvian silver had once financed a colonial oligarchic elite, Peruvian guano now financed a neocolonial comprador elite:

In the 1840s, Peru was still in debt to Britain for monies borrowed during the fight for independence from Spain. Guano offered an avenue for Peru to meet its debt payments and gain foreign exchange through the sale of guano contracts. Lima was at the time the richest city in South America. Although there were a number of contracts between the Peruvian government, acting on behalf of the Lima oligarchy, and European businesses (primarily British, but also French) during the duration of the guano trade, which thrived for 40 years, the dominant trade agreement was between Lima and the British firm Anthony Gibbs & Sons. The company holding the contract with the government had exclusive rights over the sale of guano on the global market. As a result, Britain dominated the global guano trade.

The government of Peru claimed ownership of the guano (Mathew 1972, 1977, 1981). Peruvian subcontractors, who were granted contracts from the government, were placed in charge of the digging and loading process. Lima repeatedly renegotiated the Peruvian guano contracts, trying to get a better deal. In addition to receiving a specified amount of money per ton of guano shipped, the government borrowed money against the contracts. Much of the money made via the sale of guano was directed toward paying off the existing and accumulating debt taken out by the Lima oligarchy, in a classic case of imperial dependency.³⁸⁵

At the height of the boom, guano revenues generated the overwhelming majority of Peru's state revenue.³⁸⁶ The Peruvian subcontractors charged with excavating the deposits imported large numbers of Chinese indentured laborers to harvest the guano, many of whom perished from miserable working conditions.³⁸⁷ It also locked the Peruvian economy into a century of neocolonial underdevelopment, as a flood of industrial imports wiped out Peru's domestic industries.³⁸⁸

³⁸⁴ Gregory Todd Cushman. *The Lords of Guano: Science and the Management of Peru's Marine Environment, 1800-1973* (Dissertation). University of Texas at Austin, 2003 (62).

³⁸⁵ Brett Clark and John Bellamy Foster. "Chapter 5. Guano. The global metabolic rift and the fertilizer trade." In: *Ecology and Power: Struggles over land and material resources in the past, present, and future*. Edited by Alf Hornborg, Brett Clark and Kenneth Hermele. London: Routledge, 2012 (74).

³⁸⁶ "In 1869 and 1875, 80 percent of state revenues came from the guano trade." Brett Clark and John Bellamy Foster *Ecology and Power* (76).

³⁸⁷ Brett Clark and John Bellamy Foster *Ecology and Power* (77-79).

³⁸⁸ "The prosperity of Peru's guano plutocrats paid for a flood of imports to Peru. These included British

During the 1880s, Chile became the major source of the world's fertilizers by exporting sodium nitrate from the territories it had seized from Bolivia and Peru during the Pacific War of 1879-1884. The United States alone imported 458,081 tons of sodium nitrate from Chile in 1909, between one-ninth to one-tenth of total world consumption of the fertilizer.³⁸⁹ However, the value of these natural deposits would plummet at the turn of the 20th century, thanks to the rise of large-scale phosphate mining in the southern United States, in French colonial North Africa, and in the colonial Pacific,³⁹⁰ as well as the invention of the first commercially viable nitrogen-based artificial fertilizers (the combined result of the 1902 Ostwald process for producing nitric acid and the 1909 Haber process for producing ammonia).³⁹¹

The other characteristic export of the twenty-three oligarchic republics was coffee. World coffee production tripled from an average of 315,000 metric tons in 1861-1865 to an average of 1.1 million metric tons in 1906-1910.³⁹² The largest coffee producers included the polities of Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Haiti, Mexico and Venezuela. Brazil alone accounted for about four-fifths of world production during 1906-1910, while Mexico, the second largest producer, accounted for 4%.³⁹³

This boom in production was underwritten by an equivalent boom in consumption.

cottons, French silks, and woolens produced on the looms of these two great industrial nations. Peru's guano age elite eagerly bought the latest fashions from Paris and London and consumed the best French wines, brandies, and Havana cigars. Industrially produced metal implements such as plows, pumps, cotton gins, sugar boilers, steam tractors, and railroad stock proved vital to the reestablishment of Peru's coastal valleys as producers of export crops, but coastal Peru also became heavily dependent on far more basic goods, including coal, pine boards, lard, candles, paper, iron, and whale oil to lubricate these machines. The guano trade broke the back of Peruvian protectionists." Gregory T. Cushman. *Guano and the Opening of the Pacific World: A Global Ecological History*. Cambridge: Cambridge University Press, 2014 (56)

³⁸⁹ A. A. Winslow (1911). "Industry and Trade Notes: Outlook of Chilean Nitrate Business." *Journal of Industrial & Engineering Chemistry* 3:1 (57).

³⁹⁰ "The American Southeast exported rock for manufacturing to the American Northeast and Western Europe; the French colonies of Tunisia, Algeria, and (later) Morocco exported to Western Europe; and colonies of the South Pacific exported largely to Japan, Australia, and New Zealand. As the first entrant into the international trade of phosphate rock, the American South frontier region dominated the trade for much of the latter part of the nineteenth century. By the beginning of the twentieth century, however, phosphate rock from France's North African colonies (Algeria and Tunisia) began to emerge as the US industry's main competitor in European markets." Marion W. Dixon (2021). "Phosphate Rock Frontiers: Nature, Labor, and Imperial States, from 1870 to World War II." *Critical Historical Studies* 8:2 (275).

³⁹¹ "By 1913, the production of artificial fertilizers equaled that of Chilean sodium nitrate. By 1928, the former was more than three times larger than the latter." Donald McConnell (1935). "The Chilean Nitrate Industry." *Journal of Political Economy* 43:4 (512).

³⁹² Mario Samper and Radin Fernando. "Appendix: Historical Statistics of Coffee Production and Trade from 1700 to 1960." In: *The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989*. William Gervase Clarence-Smith and Steven Topik, editors. Cambridge: Cambridge University Press, 2003 (417).

³⁹³ Mario Samper and Radin Fernando, "Appendix". In: *The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989* (421-423).

Between 1852 and 1900, world coffee consumption grew 2.5% per annum, rising from 4.6 million sacks of coffee to 18.1 million sacks.³⁹⁴ Crucially, US per capita coffee consumption rose from three pounds annually in 1830 to eight pounds by 1859.

One of the main factors driving the coffee boom was the demand for coffee by Union soldiers in the US Civil War, fueled by massive government wartime spending.³⁹⁵ This trend continued after 1865, and historians estimate the United States accounted for somewhere between 40% to 50% of world coffee demand between 1884 and 1899.³⁹⁶ The increased demand from the United States and the European empires generated three distinct boom-and-bust cycles in the price of coffee, which overdetermined the neocolonial industrialization of Central and South America.³⁹⁷

Typically, these cycles displaced less lucrative agricultural or mineral exports by coffee within one or at most two decades. Costa Rica's coffee boom occurred primarily between the 1850s and the 1870s,³⁹⁸ while the total value of coffee exports permanently surpassed those of cochineal in Guatemala in 1870.³⁹⁹ Mexico's average production grew eight-fold between 1886-1890 and 1906-1910, while Colombia's production grew nearly four-fold and Brazil's production slightly more than doubled during the same period.⁴⁰⁰

This increase in production was driven by settler-colonial expansion into the high-altitude lands or internal frontiers required for coffee cultivation, as well as the adoption of systems of

³⁹⁴ Francisco Luna and Herbert S. Klein. *The Economic and Social History of Brazil Since 1889*. Cambridge: Cambridge University Press, 2014 (13).

³⁹⁵ "In 1861 the price for Brazilian coffee increased to 14 cents a pound. In the ensuing war years it rose to 23 cents, then 32 cents, and finally 42 cents a pound before falling back to 18 cents after the war. Since the U.S. Army was a major purchaser, each Union victory spurred active trading and price hikes. By 1864 the government was buying 40 million pounds of green coffee beans." Mark Pendergrast. "Chapter 3. The American Drink." In: *Uncommon Grounds: The History of Coffee and How It Transformed Our World*. New York: Perseus, 2010.

³⁹⁶ Mario Samper and Radin Fernando, "Appendix". In: *The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989* (443).

³⁹⁷ "The world price [of coffee] rose fairly steadily from the late 1840s to reach a peak in the first half of the 1870s, making coffee the 'wonder crop' of tropical farmers around the globe. A sharp slump in the early 1880s was a foretaste of things to come, but it was forgotten by most producers in the feverish boom of the late 1880s and early 1890s. Prices went into free fall in 1896, crashing down to around half their previous level by the turn of the century. They then limped along until the mid-1900s, when they began to rise slowly again." William Gervase Clarence-Smith. "Chapter 4. The Coffee Crisis in Asia, Africa, and the Pacific, 1870–1914." In: *The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989*.

³⁹⁸ "By the end of the 1840s, Costa Rica was exporting a million kilograms [of coffee] annually, four million per year in the 1850s, eleven million a year in the 1870s, and an impressive twenty million kilograms annually on the eve of the twentieth century." Carmen Kordick. *The Saints of Progress: A History of Coffee, Migration, and Costa Rican National Identity*. Tuscaloosa: University of Alabama Press, 2019 (21).

³⁹⁹ Regina Wagner. *The History of Coffee in Guatemala*. Benjamin Villegas & Asociados: Bogota, 2001 (51).

⁴⁰⁰ Mario Samper and Radin Fernando, "Appendix". In: *The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989* (421-422).

partly and fully waged labor. In most Central American polities, this took the form of debt peonage:

The use of debt provided men with considerable power over their peons, who were obligated by their debt to labor until they could repay their loans. Varying degrees of labor coercion were employed throughout the isthmus during the late nineteenth and early twentieth centuries in different communities. In Nicaragua, El Salvador, Honduras, and Guatemala, members of the coffee oligarchies colluded with government officials to pass vagrancy laws and privatize communal lands to secure access to a ready labor force. In these nations, there was a very small nonelite coffee-growing class. In fact, most coffee production took place on large haciendas that were cared for by a combination of landless peons and subsistence farmers who labored for part of the year. A small group of people controlled the whole coffee industry, evident by the fact that in these countries coffee farmers had on-site *beneficios* where they processed and readied the coffee they produced for export.⁴⁰¹

By contrast, coffee production in Brazil was originally dominated by a plantocracy employing wageless laborers. Out of Brazil's 1875 population of 9.93 million, 1.51 million (15%) were wageless laborers,⁴⁰² and this workforce had boosted Brazilian coffee exports from 1 million sacks in 1837 to 4 million by 1878.⁴⁰³ The result was the long-term stagnation of the Brazilian economy vis-a-vis the British hegemon, as Brazilian per capita incomes fell in relative as well as absolute terms between 1850 and 1913.⁴⁰⁴ This stagnation was one of the key factors behind the 1889 military coup against the Brazilian constitutional monarchy and the

⁴⁰¹ Carmen Kordick, *The Saints of Progress: A History of Coffee, Migration, and Costa Rican National Identity* (42). For this passage, Kordick credits Chomsky, Aviva, and Aldo Lauria-Santiago. *Identity and Struggle at the Margins of the Nation-State: The Laboring Peoples of Central America and the Hispanic Caribbean*. Durham, NC: Duke University Press, 1998.

⁴⁰² Justin Robert Bucciferro. "The Economic Geography of Race in Post-Conquest Brazil." Economics Graduate Theses and Dissertations, Paper 14. Boulder: University of Colorado at Boulder, 2011 (47). A Bergad cites an 1872 estimate of 1.5 million. Laird W. Bergad, *The Comparative Histories of Slavery In Brazil, Cuba, and the United States* (286).

⁴⁰³ Dale W. Tomich. *Through the Prism of Slavery: Labor, Capital, and World Economy*. Rowman & Littlefield: Oxford, 2004 (67).

⁴⁰⁴ "In 1800 Brazil had a per capita income of 91 percent of that of the United States; by 1913 its per capita income had fallen to just 14 percent of the American rate. This result reflected the per capita evolution of the per capita income of the Brazilians, which had increased by only 0.4 percent in the first half of the nineteenth century and experienced a negative decline of -0.4 percent between 1850 and 1913. In short, per capita income in Brazil in this period was stagnant, while in the United States it grew on average between 1.1 in the first half of the century to 2 per cent per annum in [the] 1850-1913 period." Francisco Vidal Luna and Herbert S. Klein. *The Economic and Social History of Brazil since 1889*. Cambridge: Cambridge University Press, 2014 (21-22). Also see: Eurilton Araújo & Luciane C. Carpena & Alexandre B. Cunha (2005). "[Brazilian Business Cycles and Growth from 1850 to 2000](#)." IBMEC RJ Economics Discussion Papers 2005-05, Economics Research Group, IBMEC Business School Rio de Janeiro.

establishment of an oligarchic republic.

After the abolition of wageless labor in 1888, Brazilian elites began to restructure the loose-knit racial hierarchies of Pedro II's constitutional empire⁴⁰⁵ into a semi-peripheral industrial racism modeled on that of the core polities. Their main strategy was the replacement of Afro-Brazilian wageless laborers on the coffee plantations by fully waged European immigrants, primarily from Italy and to a lesser extent from Portugal.⁴⁰⁶ Fully waged immigrants powered Brazil's subsequent coffee boom, increasing exports from 5.5 million sacks in 1890 to 16.3 million sacks by 1901.⁴⁰⁷ Brazil would produce roughly half of the world's coffee between 1852 and 1890, and two-thirds of the world total between 1890 and 1930.⁴⁰⁸ Immigration also increased the nominal white share of Brazil's population from a minority of 44 percent in 1890 to a majority of 65 percent by 1940.⁴⁰⁹

This coffee boom fostered a limited and dependent industrialization. In 1884, the province of Rio de Janeiro produced 70% of Brazil's coffee while that of São Paulo produced 30%. By 1910, 70% of Brazil's total coffee production came from São Paulo, and only 5% from Rio de Janeiro.⁴¹⁰ To better serve world markets, the new coffee-growing regions financed the construction of Brazil's first national railroads. However, this network did not jumpstart Brazil's industrialization, but padded the export earnings of the coffee barons who ruled Brazil's four largest coffee-producing states:

⁴⁰⁵ "In 1872, when fairly reliable statistical data are available, nearly 43 percent of the total Brazilian population was composed of free blacks and mulattos, compared to a mere 1.5 percent in the United States in 1860. Additionally, Brazil was a nation in which people of color, slave and free, comprised the vast majority (58 percent) of all inhabitants. One more extraordinarily important comparative point should be stressed. In the United States, 89 percent of all people of African descent were enslaved in 1860. In Brazil, 74 percent of all people of color were free in 1872. Thus, not only was Brazil a society in which those of African descent were dominant, but to be black or mulatto was unequivocally not synonymous with slavery, as it was in the United States." Laird W. Bergad. *The Comparative Histories of Slavery In Brazil, Cuba, and the United States*. Cambridge: Cambridge UP, 2007 (123).

⁴⁰⁶ "Of the 2.3 million immigrants who came to São Paulo between 1887 and 1928, half were subsidized by the government." Francisco Luna and Herbert S. Klein, *The Economic and Social History of Brazil Since 1889* (10).

⁴⁰⁷ Mark Pendergrast. *Uncommon Grounds: The History of Coffee and How it Transformed Our World*. "Chapter 2: The Coffee Kingdoms." New York: Basic Books, 1999.

⁴⁰⁸ Francisco Vidal Luna and Herbert S. Klein. *The Economic and Social History of Brazil since 1889*. New York: Cambridge University Press, 2014 (7). Luna and Klein credit Bacha (1992) for this data.

⁴⁰⁹ "From the late nineteenth century there was a steady growth in the white population of the country, which increased its share of total population from 38 percent to 44 percent between the census of 1872 and 1890. But in 1940 the white share peaked at 64 percent and has been steadily declining ever since." Francisco Luna and Herbert S. Klein, *The Economic and Social History of Brazil Since 1889* (25).

⁴¹⁰ Francisco Luna and Herbert S. Klein, *The Economic and Social History of Brazil Since 1889* (14).

Figure 26. Length of Brazilian railways in kilometers, 1873-1905.⁴¹¹

Polities	1873	1883-1884	1905
São Paulo, Minas Gerais, Rio de Janeiro and Espirito Santo federal states	764 km	3,825 km	10,630 km
Brazil	1,129 km	5,708 km	16,782 km
Four states as percent of nation	68%	67%	63%

The Brazilian experience of neocolonial immiseration on rails was replicated on a smaller scale by Spanish-controlled Cuba, where the first railroad to be constructed in Central and South America was built in 1837 between Havana and Guines to facilitate sugar exports. The line proved enormously profitable for planters, triggering a local railroad boom. Cuba constructed 618 kilometers of railroads by the 1850s, and 1,281 kilometers by 1860. The sugar industry was equally instrumental in the establishment of telegraph services in Cuba in 1851, and the creation of a submarine cable link to Florida in 1867.⁴¹²

Our second model of semi-peripheral lockdown is Germany. Following its 1871 unification, the German empire became the single largest semi-peripheral economy of Global Steam. German per capita growth was the second fastest of the six national imperial capitalisms of the semi-periphery, a group comprising 142.6 million inhabitants in 1900. Germany surpassed Britain in the production of coal and steel in the 1880s, generated new industries in the fields of chemicals and electrical equipment in the 1890s, and constructed one of the leading university systems in the world by the 1900s.

Thanks to a comprehensive network of railroads and extensive trade with its continental European neighbors, the German empire was also more urbanized in 1914 than the core polities of the Netherlands, France and the United States, although considerably less urbanized than Belgium or Britain. Germany surpassed France and Russia to become the third most powerful empire in the world in 1914, behind Britain and the US. German growth was especially impressive compared to the other two newly-unified polities turned national imperial capitalisms, namely post-1861 Italy and post-1868 Japan:

⁴¹¹ Hildete Pereira de Melo. "Chapter 15: Coffee and Development of the Rio de Janeiro Economy, 1888–1920." In: *The Global Coffee Economy in Africa, Asia, and Latin America, 1500–1989* (367).

⁴¹² Dale W. Tomich. *Through the Prism of Slavery: Labor, Capital, and World Economy* (65, 85).

Figure 27. The six national imperialisms of the semi-periphery ranked in order of highest to lowest increase of domestic per capita GDP versus British per capita GDP, 1870-1913.

Polity	1870	1913
Canada	53%	90%
Germany	57%	74%
New Zealand	97%	105%
Italy	47%	52%
Japan	23%	28%
Australia	103%	105%

While Germany, Italy and Japan made limited progress catching up with Britain's per capita GDP, much of this was driven by the quantitative expansion of railroads, telegraphs, roads typical of the first stage of urbanization rather than by qualitative improvements in public health care, educational systems and scientific research.

For example, Germany's marginally higher 1913 per capita GDP than France was a statistical illusion generated by the fact that Germany was 48.8% urbanized in 1910, whereas France was only 38.5% urbanized.⁴¹³ There is evidence to suggest that urban incomes were approximately three times as large as rural incomes in societies undergoing their initial industrialization during this period (Leandros Prados de la Escosura has provided compelling evidence that this was the case in Spain between 1870-1913).⁴¹⁴ If France's urbanization rate had been the same as that of Germany, French per capita GDP would have been 69% that of Britain and significantly higher than the comparable German figure. If France's urbanization rate had matched Belgium's 56.6% in 1910, its GDP would have been 74% that of Britain, not too distant from Netherland's 82% or Belgium's 88% figure.

It is no accident that the only one of these six polities able to keep pace with the per capita growth of the United States was a British settler-colonial polity which was practically America's mirror image, namely Canada. Thanks to significant traditions of parliamentary

⁴¹³ Paul Bairoch and Gary Goertz (1986). "Factors of Urbanization in the Nineteenth Century Developed Countries: A Descriptive and Econometric Analysis." *Urban Studies* 23 (288).

https://deepblue.lib.umich.edu/bitstream/handle/2027.42/68656/10.1080_00420988620080351.pdf.

⁴¹⁴ Leandros Prados de la Escosura has estimated that the per hour productivity of Spain's agricultural sector between 1870 and 1914 averaged one-third to one-quarter that of the industrial as well as the service sector. Agricultural employment constituted over 50% of Spanish employment until the 1950s. Leandros Prados de la Escosura. *Spanish Economic Growth, 1850-2015*. Cham, Switzerland: Springer, 2017 (341-342).

self-rule, vast amounts of arable land, a democratized land market, high levels of literacy and public investment in education, copious inflows of British capital, large-scale immigration, and ready access to US consumer markets, Canada's per capita GDP rose from 69% of the comparable US figure in 1870 to 84% in 1913. Lacking Canada's land surplus as well as access to British capital and US markets, Japan's per capita GDP relative to the US fell from 30% in 1870 to 26% in 1913, Germany's fell from 75% to 69%, Italy's fell from 61% to 48%, New Zealand's fell from 127% to 97%, and Australia's fell from 134% to 97% during the same period.⁴¹⁵ Not one of these six polities managed to become self-financing core polities prior to 1914, and all six would fall further behind the United States in terms of per capita GDP during the third supercycle.⁴¹⁶

That said, there was one crucial difference dividing these six polities. Australia, Canada and New Zealand had long-standing traditions of near-universal male suffrage and parliamentary democracy, and could defuse their internal political conflicts via the settler colonization of their vast internal frontiers. While this colonization was an economic, cultural and political catastrophe for Australia's aborigines, Canada's First Nations, and New Zealand's Maori, it also generated a class of yeoman-farmers who voted for public schools, public health care, and the taxation of oligarchic elites.

By contrast, Germany, Italy and Japan all had large numbers of subsistence farmers who lived in semi-feudal conditions, but whose access to land was blocked by powerful rural elites (in 1914 Australia's population was 4.9 million, Canada's population was 8 million, and New Zealand's population was 1 million, as compared to Germany's 67 million, Italy's 35 million and Japan's 54.1 million).

To be sure, the German, Italian and Japanese empires did not have to contend with the internal linguistic, confessional and ethnic heterogeneity of their dynastic imperial competitors. While the most linguistically diverse of the three, namely Germany, had Polish-speaking citizens in its easternmost provinces of East Prussia, West Prussia, Posen and Silesia, Danish-speaking citizens in its northernmost province of Schleswig-Holstein, and French-speaking citizens in its westernmost province of Alsace-Lorraine, these minorities were only a small fraction of a polity which was 93% German-speaking in 1900.⁴¹⁷ In terms of confessional status, Germany was about three-fifths Protestant Christian and one-third Catholic, Italy was almost completely Catholic, and Japan was mostly Shinto.

That said, all three polities suffered from an explosive internal contradiction. This was the lack of democratic institutions capable of buffering the growing divide between the middle-class reformers demanding infrastructure improvements, the urban workers clamoring for higher wages, the commercial farmers seeking land, and the tenant farmers asking for debt relief on the one hand, and the despotic industrialism of industrial robber barons and semi-feudal landed elites

⁴¹⁵ Angus Maddison 2010.

⁴¹⁶ Ranked in order from the smallest relative decline to the largest, Canada's per capita GDP fell from 84% of the comparable US figure in 1913 to 76% in 1950, Japan fell from 26% to 20%, New Zealand fell from 97% to 88%, Italy fell from 48% to 37%, Australia fell from 97% to 78%, while Germany fell from 69% to 41% during the same period. All data from Angus Maddison 2010.

⁴¹⁷ Vasilis S. Gavalas (2017). "Diverse Marriage Patterns in Imperial Germany." *Journal of Family History* (49).

on the other.

Caught between the hammer of intensifying imperial competition and the anvil of the rising economic, political and cultural aspirations of their own citizens, German, Italian and Japanese imperial elites responded with a combination of repressive internal cooptation and external colonial adventurism. In a bid to defuse the appeal of the Social Democratic party and industrial unions, Bismarck's regime introduced the first compulsory injury and illness insurance and health care insurance schemes in 1883,⁴¹⁸ while the 1881-1886 wave of democratic uprisings and popular rights struggles in Japan convinced the authorities to adopt the Meiji constitution of 1889.⁴¹⁹

At the same time, all three empires launched their own maritime imperialisms. Italian elites launched wars of colonization against Ethiopia in 1895 and Ottoman-held Libya in 1911, German elites began constructing a massive naval fleet after 1884 and launched the colonization of Africa, while Japanese elites unleashed their own version of gunboat diplomacy vis-a-vis Taiwan in 1874 and Korea in 1875, and fully colonized Taiwan in 1895 and Korea in 1910.

These maritime imperialisms only worsened the overall geopolitical position of these three empires vis-a-vis their core competitors by diverting their limited economic resources into unproductive and wasteful military expenditures, by engaging in precisely the sort of military adventurism which would eventually unite the polities of the core against them, and by deepening the economic dependency of Italian, German and Japanese firms on core finance, technology and consumer markets.

Nowhere was this negative feedback loop more prominent than in the four catastrophic successes of Bismarck's tenure as chancellor of the German empire between 1871 and 1890. The first was his annexation of Alsace-Lorraine. This was ballyhooed by German nationalists, but locked the German empire into permanent hostility with the second most powerful core polity of Europe. The second was the postwar indemnity of 5 billion francs he imposed on France, which

⁴¹⁸ Austria's imperial elites passed similar reforms as a means of fending off Austria's Social Democratic party: "The [Austrian] Taaffe government was moderately successful in weakening the party's appeal by its own social legislation: in 1884 the maximum length of the working day was by law set at 11 hours; the same law barred the employment of children under age 12; it made Sunday a compulsory day of rest and introduced a workers' compensation system with insurance against sickness and accidents." Eric Roman. *Austria-Hungary and the Successor States: A Reference Guide from the Renaissance to the Present*. New York: Facts on File, 2003 (85).

⁴¹⁹ "By the evening of the first day, the Kommintō Army had captured the market town of Ogano, there destroying government offices and users' homes containing documents of indebtedness; they also wrecked the police station and seized food and arms from the wealthier residents of the town. The next day the farmers' army marched on Omiya, the district capital. By afternoon they had captured the town and over the entrance to the district government building they placed the sign 'Headquarters of the Revolution' (kakumei honbu). For the goods, money, and arms they seized from the town wealthy, they issued receipts in the name of the 'Headquarters of the Revolution.' "

The Poor Peoples' Army was the de facto ruling authority of the largest district of Saitama prefecture." Roger W. Bowen (1978). "Rice-roots democracy and popular rebellion in Meiji Japan." *The Journal of Peasant Studies* 6:1 (12-13). Also see: Roger W. Bowen. *Democracy and Rebellion in Meiji Japan: A Study of Commoners in the Popular Rights Movement*. Berkeley: University of California, 1980.

was supposed to shackle its economy for at least a decade. Instead, France mobilized its resources as a core polity and paid it off in just two years, accelerating the departure of the last Prussian occupation troops from French territory by mid-September of 1873. Bismarck's third catastrophic success was the "war scare" of 1875 to encourage the republican factions inside French politics, on the theory this would isolate it from the Austrian and Russian dynasties. James Stone has usefully summarized Bismarck's ploy:

The war scare was in reality a massive attempt to influence the course of domestic politics in Paris and Vienna. In a sensational way it revealed a fundamental fact about German foreign policy in the 1870s: The German chancellor was preoccupied with supporting certain political groups within France and Austria-Hungary.

After 1871 Bismarck's primary goal in western Europe was to keep France weak and diplomatically isolated. He felt that the most effective way to attain this goal was by promoting the establishment of a liberal republic. The German chancellor foresaw that a republican government would have a great deal of difficulty entering into an alliance with the conservative empires of eastern Europe and would promote internal dissension.⁴²⁰

In 1876, the French electorate granted Bismarck's wish, by voting in the Republican government which ensured that France would remain a core polity and forge the entente with Russia which doomed German imperial expansion to failure in the 20th century. Bismarck's fourth catastrophic success was the 1884-1885 Berlin Conference, which turbocharged the maritime expansionisms which would explode in the third supercycle.

All four catastrophic successes merely reconfirmed the dependency of Germany's semi-peripheral economy on Belgian, British and French finance and expertise. These latter were crucial to the takeoff of the German automobile industry during the 1880s and 1890s:

It has been often said that Germany was the birthplace of the motorcar, but France was its nursery. Certainly Karl Benz himself might never have found commercial success, had he not shown a car at the Paris Exposition of 1887 and attracted the interest of a cycle-maker named Emile Roger, who had already bought a stationary engine from the Mannheim firm. Roger traveled to Mannheim to have a demonstration of the car, and promptly bought it. He later became sole concessionaire for Benz cars in France, and took out a license to assemble them in Paris.

Frenchmen [sic] were also essential in making the Daimler engine into a commercial proposition. In 1887, Daimler and Maybach brought out a two-cylinder engine with the cylinders arranged in a narrow angle V-formation. The French manufacturing rights to Daimler engines had already been acquired by Edouard Sarazin, who had no manufacturing premises and, therefore, agreed with his friend Emile Levassor that Daimler engines should be made in France by the latter's engineering firm, Panhard et Levassor, of Paris. When Sarazin died in 1887, his widow traveled to Cannstatt, to make sure that her

⁴²⁰ James Stone (1994). "The War Scare of 1875 Revisited." *Militär-geschichtliche Mitteilungen* 53 (310-311).

husband's rights would pass to her. Gottlieb Daimler was very impressed with her business acumen and confirmed the agreement, while three years later she cemented matters still further by marrying Emile Levassor.⁴²¹

This dependence was also apparent in terms of patents. Alessandro Nuvolari and Michelangelo Vasta have calculated that the number of patents per capita in Germany and Italy rose from a range of 5 to 10 per million inhabitants in 1861 to about 190 to 200 per million in 1913, while the comparable figures for Britain and the US rose from a range of 70 to 90 per million in 1861 to 350 to 400 per million in 1913. Meanwhile, Japanese patents per capita rose from zero prior to 1885 to about 25 per million by 1913.⁴²²

The internal and external challenges constraining the Italian empire were even greater than those constraining Germany. Whereas a majority of Germans were literate as early as the 1840s, only 25% of the Italian population was literate as late as the 1860s.⁴²³ Italy's economy was characterized by labor-intensive textiles staffed by heavily exploited female workers, and only began to develop metal-working and electrical industries in the late 1890s. Above all, Italy was polarized between its industrializing north and its slower-growing south. Carlo Ciccarelli and Stefano Fenoaltea have emphasized that this polarization increased over time:

Industrialization, both as a state and as a process, appears as a clearly sub-regional phenomenon: the (ever more intensively) industrial regions were simply those with (ever more intensively) industrial provinces, and even there these contrast sharply with their immediate neighbors. In the upper basin of the Po, in the heart of the "industrial triangle," the southern provinces remained resolutely non-industrial: from the French border to the Adriatic "the South of the North" resembles, in 1911, the South of the country.

At the provincial level the industrial story is essentially one of growing concentration. The distribution of industry changed little over the 1870s, altogether more radically over the 1880s and '90s, when the "industrial triangle" emerged. The subalpine provinces of Piedmont and Lombardy and Genoa on the Ligurian coast became sharply more industrial, the former attracting the rapidly growing, newly protected cotton industry, the latter as the privileged beneficiary of new shipbuilding subsidies and naval construction; elsewhere, relative deindustrialization was the rule.

Patterns changed again over the belle époque. This last period witnessed the only significant episode of industrial diffusion: the rise of the also protected sugar industry on the newly reclaimed lands of the Emilian provinces, which then achieved spectacular growth rates from a small base. But the main development was that the earlier concentration into the Northwest gave way to concentration within the Northwest itself. Then-booming engineering was less attracted than textiles to the Alpine rivers, progress

⁴²¹ G.N. Georgano. *Cars 1886-1930*. New York: Beekman, 1986 (16).

⁴²² Alessandro Nuvolari and Michelangelo Vasta (2013). "Independent invention in Italy during the liberal age, 1861-1913." *LEM Working Paper Series* 2013/20. Laboratory of Economics and Management (LEM), Scuola Superiore Sant'Anna, Pisa (22).

⁴²³ Denis Mack Smith. "Chapter 10: Francesco De Sanctis: the politics of a literary critic." In: *Society and Politics in the Age of the Risorgimento: Essays in Honour of Denis Mack Smith*. Edited by John A. Davis and Paul A. Ginsborg. Cambridge: Cambridge University Press, 1991 (254).

in energy transmission moved the waterfalls themselves into the plains: the triangle's minor industrial provinces grew little if at all, the provinces with its major cities grew explosively. In the last decade of the European peace, the capitals of the North attracted factories as strongly as the capitals of the pre-Unification states had once attracted artisans.⁴²⁴

Dependency was also the keynote of Meiji-era Japan. The latter's industrialization had begun with the formation of a number of commercial enterprises by the state authorities during the 1870s. While almost all of these enterprises incurred disastrous losses and were subsequently shut down or sold off in the 1880s, they did create a stockpile of industrial knowledge, resources and experience crucial to Japan's industrial take-off. Naofumi Nakamura has made a compelling argument that this take-off was due to a combination of significant (albeit unprofitable) initial state investments, plus ambitious and far-sighted reformers at the prefectural level:

The key feature of early training programs was the formation of a corps of engineers within the government-run railways. Pressed by a chronic financial shortage due to the pressure on government finances, and public criticism about its enormous construction investment, the Government Railways pursued a policy of replacing foreign advisors and experts with Japanese. In the late 1870s to early 1880s, it formed its own civil engineering corps, consisting of foreign-trained Japanese engineers and graduates of training institutions inside Japan. This corps was organized as a training institution patterned after the Kogisei Yoseijo (the Railway Bureau's Training School for Engineers) and used foreign-educated engineers to instruct graduates of domestic institutions on state-of-the-art Western techniques. As such, the engineering corps played a significant role in improving the skills of Japanese civil engineers as a whole, and in systematically disseminating advanced know-how about railway construction (Nakamura 1998: Chapters 1, 2).

How were these engineers recruited? Table 1 shows the number of engineers affiliated with the Railway Bureau of the Ministry of Public Works, broken down by career background. It is clear from this table that while most of the *gite* (assistant engineers) with low- to medium-level engineering expertise were trained within the Bureau, a majority of the *gicho* or *gishi* (master engineers) had been transferred from prefectural governments. This fact suggests that in the early Meiji period, many engineers who had studied abroad were on the payrolls of prefectural governments.

Launching and maintaining a railway business requires workers skilled in civil engineering, machine building, locomotive engineering etc. In the embryonic days of the Japanese railway industry, foreigners were often employed to do these jobs. When it became necessary to replace them with Japanese workers, the availability of craftsmen and workmen trained in traditional skills, who had formerly been employed by the shogunal and domain governments, proved very important. For instance, smiths and woodworkers were employed in rolling stock manufacturing plants. In railway construction, members of construction gangs that used to work for the shogunate were active in bridging works, crews of carpenters in the construction of buildings, and former miners in the boring of tunnels. Also active were former members of the *kurokuwamono*, gangs of skilled civil engineering workers who had been directly retained by the shogunate (Tetsudo Kensetsugyo Kyokai 1967: 22). Naturally these workmen had

⁴²⁴ Carlo Ciccarelli and Stefano Fenoaltea (2010). "Through the Magnifying Glass: Provincial Aspects of Industrial Growth in Post-Unification Italy." *Economic History Working Papers*. Bank of Italy (22-23).

to receive some retraining, and in the railway industry they were retrained on the job, learning from foreign employees. In the case of civil engineering, teams of skilled workers parlayed their training into a new role as railway construction contractors, undertaking railway construction works around the country from the late 1880s.⁴²⁵

One of the genuine successes of this railroad construction drive was the indigenous production of locomotives. Between 1870 and 1892, the Meiji authorities imported 294 locomotives from abroad. Four-fifths of these were produced by British firms, one-tenth by German firms and one-tenth by US firms. In 1893, Japan began to move towards self-sufficiency. Out of the 2,083 locomotives acquired by Japanese railways between 1893 and the middle of 1912, US firms produced 47%, British firms 36%, German firms 10%, Japanese firms 8% and Swiss firms 1%.⁴²⁶ Many of these were acquired solely to be reverse-engineered, and after 1913, Japan developed sufficient technological acumen to produce all of its locomotives domestically.

Japan's textile boom was the beneficiary of the national policies of national reformer and banker Shibusawa Eiichi, as well as the fund-raising of commercial-minded prefectural elites. Eiichi was the key figure who introduced double-entry accounting, joint-stock companies, and modern banks to Japan, first as Minister of Finance and after 1873 as the president of First National Bank (the predecessor of the contemporary Mizuho Bank). Eiichi played a key role in setting up the Osaka Cotton Spinning Company in 1882, a modern enterprise which combined imported British technology with Japan labor and became an overnight commercial sensation. The company's success spurred a post-1886 textile boom organized and financed by prefectural business elites.⁴²⁷ Textiles accounted for about one-third of Japan's total manufacturing output between 1874 and 1905,⁴²⁸ and employment in the textile industry soared from 269,156 in 1902, 54% of all wage employment, to 475,385 in 1911, 60% of all wage employment.⁴²⁹

The other major success story of Meiji-era Japan was silk, a cottage industry centered primarily in the countryside. Fueled by demand from US markets, annual production grew from 1 million kg in 1868 to 4.6 million kg in 1893, generating 42% of total Japanese export earnings during this period.⁴³⁰ Japanese silk exports surpassed those of Italy in 1905 and China in 1909, making Japan the world's largest silk exporter for decades to come.

Japan's singular success as the first East Asian polity to embark on rapid industrialization

⁴²⁵ Naofumi Nakamura (2000). "Meiji-Era Industrialization and Provincial Vitality: The Significance of the First Enterprise Boom of the 1880s." *Social Science Japan Journal* 3:2 (192).

⁴²⁶ Steven J. Ericson (1998). "Importing Locomotives in Meiji Japan: International Business and Technology Transfer in the Railroad Industry." *Osiris* 13 (132). doi:10.1086/649283

⁴²⁷ Naofumi Nakamura, "Meiji-Era Industrialization and Provincial Vitality: The Significance of the First Enterprise Boom of the 1880s" (195, 198-202). Also see: Naofumi Nakamura (2015). "Reconsidering the Japanese Industrial Revolution: Local Entrepreneurs in the Cotton Textile Industry during the Meiji Era." *Social Science Japan Journal* 18:1 (23-44).

⁴²⁸ Chushichi Tsuzuki, *The Pursuit of Power in Modern Japan 1825-1995* (140).

⁴²⁹ Andrew Gordon. *A Modern History of Japan: From Tokugawa Times to the Present*. New York: Oxford University Press, 2003 (100).

⁴³⁰ Andrew Gordon, *A Modern History of Japan: From Tokugawa Times to the Present* (95).

generated equally explosive contradictions. Prime among these were the internal immiseration of millions of tenant farmers (agriculture still accounted for 54% of total Japanese employment in 1915, down from 65.2% in 1885),⁴³¹ and the horrific exploitation of female workers. These latter endured fourteen-hour work days in the silk industry, were barred from entering many professions and educational institutions, and were subjected to direct corporeal violence in the sex industry. About 50,000 official prostitutes worked in state-licensed brothels in 1900, as compared to the 60,000 women who worked in the textile industry.⁴³² Above all, Japan's pre-1914 economy was deeply dependent on textile exports to world markets (especially those of the United States) and on remittances from the Japanese labor diaspora throughout Canada, the Philippines (colonized by the US in 1898), Hawaii (annexed by the US in 1898) and the continental United States.⁴³³

Our third and final model of semi-peripheral lockdown is that of the Russian empire, the single most successful of the five dynastic empires of capital in the semi-periphery (the others being the Austrian, Ottoman, Portuguese and Spanish empires). Overcoming the hurdles of limited access to world markets and the legacy of serfdom, Russia's Romanov dynasty defeated the Ottoman empire in 1877-1878, marched relentlessly across Central Asia, and constructed a rail network extending all the way to the Pacific. By the end of the 19th century, Russia ruled over 8% of humanity and one-sixth of the world's land surface.

At the same time, the Russian economy achieved significant economic growth on the basis of vast exports of wheat from colonized Ukraine, tariff walls to protect the infant industries of its largest cities and easternmost colonies, and the extraction of a vast agricultural and mineral surplus from its Central Asian and Siberian colonies. While momentarily checked by its naval defeat in the 1904-1905 Russo-Japanese war and caught off-balance by the near-revolution of 1905, the dynastic regime quickly restored its authority, instituted significant economic reforms, and launched a massive rearmament drive with the assistance of France.

Despite these achievements, the Russian empire was no closer to core status in 1914 than it had been in 1860. Whereas Russia had been the third most powerful empire of the world-system during Global Cotton, by 1914 it had slipped to fifth place, behind Britain, the United States, Germany and France. Its quantitative growth in population and absolute output was not matched by any qualitative increase in its per capita GDP relative to Britain. More worrisome still, Russia's economy had begun to fall noticeably behind the Austrian, German and Japanese empires on its borders. Among its peer group of the five dynastic empires of capital, Russia's performance was squarely in the middle:

⁴³¹ Chushichi Tsuzuki, *The Pursuit of Power in Modern Japan 1825-1995* (139-140).

⁴³² "Brothels were licensed and regulated by the state, although there were many unlicensed practitioners as well. At the turn of the century, about fifty thousand licensed prostitutes worked in Japan, not far below the sixty thousand women in cotton spinning mills (although less than the number in silk spinning and far less than in weaving). If the pay was relatively high, so too were the costs in health, in dignity, and in loss of freedom. Families often took substantial advances in 'selling' a teenage girl to a brothel. She could not quit until the advance was repaid, which usually took three to five years." Andrew Gordon, *A Modern History of Japan* (102).

⁴³³ Andrew Gordon, *A Modern History of Japan* (95-96).

Figure 28. The five dynastic empires of capital in the semi-periphery, ranked in order of highest to lowest increase of domestic per capita GDP as a percent of British per capita GDP, 1870-1913.

Polity	1870	1913
Austrian empire	46%	57%
Spanish empire (Spain only)	38%	42%
Russian empire	30%	30%
Ottoman empire	26%	25%
Portuguese empire (Portugal only)	31%	25%

The Russian empire's post-1860 industrialization was heavily dependent on the external stimulus of foreign loans (initially from semi-peripheral Germany, but after 1880 primarily from the core polity of France) and the internal stimulus of government military contracts, a pattern which only exacerbated its internal polarization. Rosa Luxemburg had noted as early as 1897 that whereas Russian-controlled Poland comprised only 7.3% percent of the empire's population, the region generated a quarter of Russia's steel and two-fifths of its coal. Similarly, almost all of the spindles and looms of Russia's textile industry were located in the vicinity of St. Petersburg, Moscow and Russian-controlled Poland.⁴³⁴

The only other region which experienced significant industrialization was the Donbas district of eastern Ukraine, where British and French capital fostered a sizable iron and steel industry. Pig iron production in the region skyrocketed from 6.2% of the empire's total in 1880 to 51.3% by 1900,⁴³⁵ while coal production increased from 36.8% of the empire's coal in 1870 to 68.1% by 1900.⁴³⁶ However, ninety percent of the iron and steel plants in the region were owned by foreign companies.⁴³⁷ In Charter Wynn's words:

As important as the metallurgical, mining and auxiliary industries were, however, other sections of the Donbass-Dnepr Bend economy showed little vitality and remained technologically backward. The boom was extremely uneven and narrow in its scope, as mechanization did not reach beyond heavy industry. The government offered subsidies and guaranteed contracts only to heavy industry, and foreign corporations showed no interest in investing in other sectors of the Donbass-Dnepr economy. A sea of

⁴³⁴ Rosa Luxemburg. *The Industrial Development of Poland*. Translated by Tessa DeCarlo. New York: Campaigner Publications, 1977 (115).

⁴³⁵ Charters Wynn. *Workers, Strikes and Pogroms: The Donbas-Dnepr Bend in Late Imperial Russia, 1870-1905*. Princeton: Princeton University Press, 1992 (17).

⁴³⁶ Charters Wynn, *Workers, Strikes and Pogroms* (18).

⁴³⁷ Charters Wynn, *Workers, Strikes and Pogroms* (21).

agrarian backwardness surrounded the islands of industry.⁴³⁸

From a world-systems perspective, the Russian empire was an amalgamation of a fast-growing Argentina (Estonia, Latvia, Lithuania, Finland and Poland), a slow-growing Mexico (Armenia, Georgia, the urban regions of St. Petersburg and Moscow, and Ukraine), and a stagnant Brazil (rural Russia and colonial Abkhazia, Azerbaijan, Belarus, Qazaqstan, Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan and Uzbekistan). Ivan Berend has summarized Russia's semi-peripheral industrialization between 1870 and 1910 as follows:

Export possibilities [within the Russian empire] triggered relatively rapid industrialization. Between the 1870s and 1910, the number of industrial workers increased more than fourfold, and industrial output eightfold. Poland's extremely rich, high-grade coal resources offered a great opportunity for establishing an important export sector: coal output increased from 0.9 million to 6.8 million tons, nearly sevenfold between 1878 and 1913. Raw materials extraction, however, inspired processing as well. Traditional iron-ore mining was modernized and an efficient iron and steel industry was established. Steel output increased from 0.1 to 4.6 million tons between 1854 and 1903. Around Warsaw, modern engineering industries produced transport and farming machinery. The value of the Warsaw machine-building industry increased by sixfold between 1864 and 1880. Mining, iron, steel and engineering industries embodied one-fifth of industrial production in 1910. The textile industry became the leading export sector, however. Nearly half of all industrial workers were employed in textiles, and they produced almost half of the country's total industrial output.

...Around the turn of the century, Poland produced 40 percent of the Russian empire's coal, 23 percent of its steel, 20 percent of its textiles, and 15 percent of its iron, and Polish per capita industrial production was twice that of Russia.⁴³⁹

It is true that total Russian manufacturing output increased by an impressive thirteen-fold in per capita terms during Global Steam, rising from 235.9 million rubles in 1867 to 5.289 billion rubles in 1913 (the equivalent of \$2.645 billion US at 1914 exchange rates). On closer examination, however, this industrialization bore all the classic hallmarks of semi-peripheral status.

In 1913, 35.1% of Russia's industrial output was generated by the textile industry, 27.3% by food processing, and only 14.5% by metal-working industries.⁴⁴⁰ Textiles were also the single largest share of industrial employment in the Russian empire, rising from 399,178 in 1887 to 800,469 by 1912.⁴⁴¹ On the surface, this compared favorably with total employment in British

⁴³⁸ Charters Wynn, *Workers, Strikes and Pogroms* (23-24).

⁴³⁹ Ivan Berend, *History Derailed* (169-170).

⁴⁴⁰ V.I. Bovykin and B.V. Ananich. "Chapter 6. The Role of International Factors in the Formation of the Banking System of Russia." In: *International Banking 1870-1914*. Edited by Rondo Cameron and V.I. Bovykin. Oxford: Oxford University Press, 1991 (136-137).

⁴⁴¹ Manabu Suhara (2017). *Russian Industrial Statistics*. RRC Working Paper Series, No. 66. Russian

cotton mills, which rose from 452,000 in 1860 to 577,000 in 1907, employment in US cotton mills, which rose from 122,000 to 310,000,⁴⁴² and employment in Germany's cotton-spinning industry, which rose from 31,900 in 1865 to 96,800 by 1913.⁴⁴³

However, this massive expansion of labor-intensive textiles was not matched by an equivalent expansion of capital-intensive manufacturing. The US Census estimated total US manufactures at \$20.672 billion in 1910, of which 23.6% was in metal-working, 18.7% in food processing and only 14.2% in textiles.⁴⁴⁴ By the end of Global Steam, total US manufacturing output was thirteen times as large as the Russian output in per capita terms, while the US metal-working sector was twenty times as large as the corresponding Russian sector in absolute size.

The fatal flaw of the Russian accumulation model was the immiseration of its rural interior. Due to the falling death rates and high fertility rates of the first stage of industrialization, demand for land was high from Russia's subsistence farmers and emancipated serfs. However, the empire's semi-feudal rural elites blocked democratic land reforms, compelling former serfs to pay an estimated 1 billion rubles between 1861 and 1900 for land acquisition.⁴⁴⁵

This debt burden was a permanent brake on rural industrialization, and blocked the growth of the local food processing and farm equipment industries which emerged in Australia, Canada and the United States. While the expansion of the railroad network enabled farmers to export wheat to world markets, especially producers in Ukraine, wheat prices stagnated due to increased planting and exports from Argentina, Canada, Chile and the United States. Russia's rural sector as a whole relied primarily on extensive rather than intensive production, and garnered only marginal productivity increases:

Research Center, Institute of Economic Research, Hitotsubashi University. March 2017.

⁴⁴² Mary B. Rose. *Firms, Networks and Business Values: The British and American Cotton Industries since 1750*. Cambridge: Cambridge University Press, 2000 (162).

⁴⁴³ Dietrich Ebeling, Marcel Boldorf, Stefan Gorißen, Michael Mende, Anke Sczesny and Michaela Schmölz-Häberlein. "The German wool and cotton industry from the sixteenth to the twentieth century." In: *The Ashgate Companion to the History of Textile Workers, 1650-2000*. Edited by Lex Heerma Van Voss, Els Hiemstra-Kuperus and Elise Van Nederveen Meerkerk. Burlington, VT: 2010. (209).

⁴⁴⁴ US Census 1910.

<https://www2.census.gov/library/publications/decennial/1910/abstract/abstract-1910-p6.pdf>

⁴⁴⁵ Teodor Shanin *The Roots of Otherness, Volume 1* (147).

Figure 28. Wheat production in the Russian and American empires in absolute terms and in kilograms per capita, 1860-1913.⁴⁴⁶

Polity	Wheat production in tons (kg/capita) 1860	Wheat production in tons (kg/capita) 1913
Russian empire	27 million tons (36.7 kg/capita)	69.45 million tons (39.9 kg/capita)
US empire	4.62 million tons (132 kg/capita) (1866 data)	17 million tons (184 kg/ per capita) (1910 data)

The sale and scope of this rural crisis was most evident in the history of Russia's artels, small-scale cooperatives which rural reformers attempted to foster in Ukraine and the black earth region of Russia. Agricultural cooperatives had flourished in Denmark's post-1860 dairy industry, thanks to Denmark's high degree of mass literacy, low levels of inequality, two centuries of trade integration with continental Europe, and an export market underwritten by British consumers. However, the subsistence farmers of Belarus, Russia and Ukraine had none of these internal and external advantages. Yanni Kotsonis has described the difficulties facing Russia's rural cooperatives:

The Perm' provincial zemstvo had a similar experience in the same period. When zemstvo [rural province] statisticians found that there was an inordinately high proportion of households without horses, the board began distributing loans of under 10 rubles to peasants whom it classified as poor. With horses costing 25 to 30 rubles, the loans were insufficient for a household to buy one. The zemstvo faced a dilemma: providing horses to all in need was financially impossible, but providing horses to only a few was morally unacceptable. N. G. Fedorov of the Shadrinsk district zemstvo suggested that *arteli* could be a compromise between economy and justice, at the same time embodying traditional collectivism. The provincial zemstvo agreed, and in 1892 and 1893 established 108 *arteli*, each with six households, and each provided with two horses and two plows. The agreements stipulated that each household would have the use of a horse and plow two days a week; with six households, the horses and plows would be in use every day except Sunday. Each *artel'* would subordinate itself to an elder (*starosta*), 'as with the peasant land commune.'

In an outcome recurring with numbing consistency, one-third of the *arteli* disappeared within a year of their founding, not one lasted to the end of the decade, and many had never existed at all. The zemstvo investigator found that in most *arteli* 'there is no cooperative at all; each *artel'shchik* strives to acquire a horse only for himself.' To that end, members bought each other out, purchased additional horses, and expelled 'surplus members' until the number of households was reconciled with the number of

⁴⁴⁶ Calculated at 1 US bushel = 27.216 kilograms, 1 Russian pud = 16.3806872 kilograms, and available census data. US data from Kevin Hillstrom and Laurie Collier Hillstrom, editors. *The Industrial Revolution in America: Railroads*. Santa Barbara: ABC Clio, 2005 (148). Russian data from V.I. Bovykin and B.V. Ananich, *International Banking 1870-1914* (134).

horses. The investigator also noticed a high rate of mortality among the horses due to starvation: 'among the *artel'shchiki* there is the expectation that he who works the horse should feed it, but having worked the whole day and having passed on the horse, he does not bother to feed it. 'Sunday is a particularly hard day for the horses,' he observed, since there were six members and six working days, and no household was willing to feed it on the seventh.⁴⁴⁷

Instead of transforming subsistence farmers into rural entrepreneurs, the reformers ended up imposing an urban-centered neocolonial order on the countryside. "The Perm' provincial zemstvo was only the first of many to conclude that an educated person (intelligent) must be appointed to the board of every cooperative," noted Kotsonis, "thereby militating against those aspects of 'peasant life' that ran contrary to cooperative association. If cooperatives were to succeed among peasants, they would have to be under the management of non-peasants."⁴⁴⁸

Almost every single one of Russia's contradictions was reproduced on a smaller scale by the Austrian empire. While the regions of the future Austria and Czechia industrialized, the regions of the future Slovenia and Hungary experienced a far more limited economic expansion, while the provinces of Ukrainian-speaking Galicia (Ruthenia) and Bosnia stagnated. As internal ethnic tensions rose, the German-speaking elites of Austria became increasingly convinced of the need to wage adventurist wars against their Italian, Ottoman, Russian and Serbian neighbors as a matter of the empire's very survival.

It is striking that the one apparent exception to this picture, namely Galicia's flourishing oil industry, was dependent on imported drilling technology and expatriate entrepreneurs such as Canada's William Henry MacGarvey.⁴⁴⁹ MacGarvey's Carpathian Company became one of the leading industrial firms of the Austrian empire:

⁴⁴⁷ Yanni Kotsonis. *Making Peasants Backward: Agricultural Cooperation and the Agrarian Question in Russia, 1861-1914*. London: Macmillan, 1999 (29).

⁴⁴⁸ Yanni Kotsonis, *Making Peasants Backward* (32).

⁴⁴⁹ "MacGarvey had begun his career in the oil industry in Petrolia, Canada, sometime around 1862. He rose to prominence as local mayor and owner of eighteen producing oil wells, in addition to a store. In 1881, he was recruited by Bergheim to try their luck in Ölheim, Hanover. In 1882, MacGarvey moved to Galicia and offered his services as a drilling operator. In 1883, the two men joined forces again, founding the petroleum company Bergheim and MacGarvey. Principally a drilling expert during his first years in Galicia, MacGarvey introduced the Canadian cable drilling system to Galicia in 1884, a moment that marked Galicia's entry into the world of modern petroleum mining.

Although there had been some drilling before MacGarvey arrived, it had remained rare because of the limitations of local technology. Once the shallow beds that could be reached by digging or hand drilling were tapped and exhausted, operators had to assume that there was no more oil to be had, since they could no longer search for it. The Canadian drilling system, with which MacGarvey had first become familiar while working in Enniskillen, Canada, in 1866, allowed exploration at previously unheard-of depths and unimaginable speeds. Instead of the 20 centimeters that had been the local norm, drillers could now delve 24 meters into the earth in twenty-four hours and easily reached depths of over 1,000 meters where 150 meters had been the limit only a few years before." Alison Fleig Frank. *Oil Empire Visions of Prosperity in Austrian Galicia*. Cambridge: Harvard University Press, 2005 (90).

By the early twentieth century, the Carpathian Company employed 2,400 workers, owned steam engines and water power in the strength of 2,800 horsepower, and produced crude oil, refined petroleum, gasoline, lubricating oils, paraffin, steam drilling engines, drilling rigs, boilers, pumps, core drills, winding machines, portable electric cranes, and eccentric drilling bits that had been patented by MacGarvey himself.⁴⁵⁰

This industrial success was qualified, to be sure, by catastrophic destruction of the local ecology due to unregulated digs, oil spills, explosions and the despoliation of water-systems.

While the Austrian empire reduced its gap in per capita GDP vis-a-vis Britain slightly, this was due primarily to the increase of its urbanization rate from 10.4% in 1869 to 19.9% in 1910,⁴⁵¹ two-thirds of which was due to increased urbanization and only one-third to qualitative catch-up.

The internal contradictions of the Ottoman empire were even more explosive than those of Austria. Its most industrially developed regions – its northwestern enclaves in Europe – were a cauldron of anti-Ottoman nationalism and confessional-tinged ethnic irredentism, its Anatolian heartland experienced a limited and uneven economic expansion mediated by non-Turkish mercantile elites (especially Armenians and Greeks), while the Ottoman territories of North Africa, the Levant and Mesopotamia regions were locked in rural stagnation.

The British-French-Ottoman victory over Russia in the Crimean War enabled the Ottoman polity to launch its own industrialization drive, e.g. the Ottoman telegraph network expanded from 5,000 kilometers in 1865 to 27,000 kilometers by the late 1870s, the eighth largest such network in the world at the time.⁴⁵² By the same token, British and French neocolonialism dominated the Ottoman empire's economy, to the point that the Ottoman loan default of 1875 triggered the imposition of the Council for the Administration of the Public Debt in 1881.

This latter was a classic neocolonial institution which controlled repayment of the empire's foreign debt, and which wielded broad powers of taxation and investment within the Ottoman empire until 1914. Although technically an arm of the Ottoman state, it was administered by Austrian, British, Dutch, French, Italian and Ottoman creditors, along with one nominal representative of the Ottoman empire. Giampaolo Conte and Gaetano Sabatini have described how the Council stabilized the Ottoman empire's finances over the short run, while exacerbating its long-term neocolonial dependency:

⁴⁵⁰ Alisan Fleig Frank, *Oil Empire* (93).

⁴⁵¹ Heinz Fassmann (1986). "City-size Distribution in the Austrian-Hungarian Monarchy 1857-1910: A Rank-size Approach." *Historical Social Research / Historische Sozialforschung* 38 (10).

⁴⁵² E. Thomas Ewing. "Chapter 5. 'A Most Powerful Instrument for a Despot': The Telegraph as a Transnational Instrument of Imperial Control and Political Mobilization in the Middle East." In: *The Nation State and Beyond: Governing Globalization Processes in the Nineteenth and Early Twentieth Centuries*. Edited by Isabella Löhr and Roland Wenzlhuemer. Heidelberg: Springer, 2013 (90).

...with the consolidation of foreign Ottoman debt and the creation of the Council of Administration, the Sublime Porte was able to return to the capital market enjoying much lower interest rates: between 1854 and 1877 the average interest rate was 5.6% compared to 4.2% between 1882 and 1914. With the resumption of service on foreign debt in 1882, Abdul Hamid showed himself to be more careful than his predecessors in recurring to international loans; yet the public debt did continue to grow, though not conspicuously, until 1903, after which, under the regime of the Young Turks and the weight of armed conflict – first with Italy, then in the context of the Balkan wars – it grew exponentially.

Despite the increase in indirect foreign investments, especially in railway construction, it was precisely in this sector that the [Ottoman] Empire contributed to financing important activities, which opened formerly isolated areas of the hinterland to new international trade. In this case, investment brought profit, increasing exports in general and integrating the Ottoman economy into the world market more amply. Yet the relative growth in exports never managed to keep pace with the growth of imports and a constant deficit in the commercial balance of payments ensued. This deficit was partially covered by new loans, so that international creditors were financing the imports of the Ottoman Empire, a characteristic common to many peripheral countries in the decades at the end of the 19th century and in the early 20th century.⁴⁵³

While the position of the Ottoman empire slightly worsened vis-a-vis its Austrian and Russian rivals, it retained its overall semi-peripheral status and even launched its own version of textile-led industrialization:

Steam-powered silk reeling factories emerged in Salonica, Edirne, and west Anatolia and in the Lebanon. Particularly in west and central Anatolia, factory-made yarns and dyes combined with hand labor to make mind-boggling numbers of carpets for European and American buyers. The two industries together employed 100,000 persons in c. 1914, two-thirds of them in carpet making. Most workers were women and girls, receiving wages that were the lowest in the entire Ottoman manufacturing sector. In addition, several thousands of other female workers hand made Ottoman lace that imitated Irish lace, finding important markets in Europe.⁴⁵⁴

The trajectories of the two Iberian empires roughly paralleled that of the Ottoman empire, i.e. internal economic stagnation and polarization combined with external overstretch vis-a-vis imperial competitors and anti-colonial nationalisms. Whereas the Russian empire used the pretext of the Bulgarian, Romanian and Serbian anti-colonial nationalisms to launch the 1876-1878 Russo-Ottoman war, the United States used the pretext of the Cuban and Filipino anti-colonial nationalisms to seize most of Spain's maritime empire in the 1898 Spanish-American War (we will describe the significance of this conflict more fully in Chapters 10 and 11).

⁴⁵³ Giampaolo Conte and Gaetano Sabatini (2014). "The Ottoman External Debt and Its Features Under European Financial Control (1881-1914)." *The Journal of European History* 3.

⁴⁵⁴ Donald Quataert. *The Ottoman Empire 1700-1922*. Cambridge: Cambridge University Press, 2005 (135).

Despite its dismal economic performance, Portugal's informal alliance with Britain shielded it from the overt depredations of other empires. However, this alliance did not protect it from Britain's own imperialism, e.g. the 1890 diplomatic note which affirmed British control over present-day Malawi, Zambia and Zimbabwe. This put an end to Portugal's 1888-1889 attempt to create a land bridge between its colonies of Angola and Mozambique. The debacle fatally discredited the Portuguese monarchy, and was crucial to the establishment of the Portuguese republic in 1910.

While the Spanish economy was the second-best economic performer in its peer group, it suffered from the same stagnation and polarization afflicting the semi-periphery as a whole. Eight of Spain's seventeen provinces had a per capita GDP above the national average in 1860, but only five provinces were above average in 1910, and the gap between the wealthiest provinces and the poorest widened over time. Economic growth was especially concentrated in the northeast regions of Spain, e.g. Catalonia, the Basque Country, Galicia, Andalusia and Madrid.⁴⁵⁵ While the agricultural sector declined from about 40% of total GDP in 1870 to 30% by 1914, agricultural employment measured in terms of total hours worked declined only slightly from 61.1% in 1860 down to 57.3% by 1914.⁴⁵⁶

⁴⁵⁵ Joan Ramón Rosés, Julio Martínez-Galarraga and Daniel A. Tirado (2010). "The upswing of regional income inequality in Spain (1860–1930)." *Explorations in Economic History* 47 (249, 252).

⁴⁵⁶ Leandros Prados de la Escosura, *Spanish Economic Growth, 1850-2015* (9, 338-339).

Chapter 9

The Industrial Modernisms of the Semi-periphery 1878-1904

While the three lockdowns of the semi-periphery constrained the industrialization of its economies and narrowed the political options available to its oligarchic republics, national imperial capitalisms and dynastic empires of capital, they did not constrain the development of its cultural sphere in precisely the same way. This is not to argue that the artists of the semi-periphery were somehow freer or their audiences more cosmopolitan than their counterparts in the core. Rather, the aesthetic field of the semi-periphery was not yet under the control of the international culture-industries which dominated the aesthetic field of the core polities after 1860. In addition, the audiences of the semi-periphery were far more ethnically, linguistically, and confessionally heterogeneous and contained far fewer fully-waged laborers than their counterparts in the core.

The result was a temporary but profound divergence between the aesthetics of the core and those of the semi-periphery. While this divergence manifested itself as early as 1862, its effects were most pronounced between 1878 and 1904. During this period, the industrial modernisms of the core were heavily mediated by international media platforms such as postcards, photography, phonography and the cinema, by international networks of art-dealers, galleries, museums and exhibitions, and by international cultural forms such as science fiction, the detective story, and children's fantasy literature. By contrast, the industrial modernisms of the semi-periphery were heavily mediated by the process of national imperial audience formation.

This difference explains why the internal clock of the core industrial modernisms ran at the speed of the international commodity form, whereas the internal clock of the semi-peripheral industrial modernisms ran at a somewhat slower pace. One of the most striking examples of semi-peripheral audience formation was the work of Jose Maria Velasco, most famous for his *Valley of Mexico* [El Valle de Mexico] landscape paintings (1894-1905).

Velasco's single most realized work, *Citlaltépetl* (1897), contrasted a tiny, toy-like steam train in the foreground against the backdrop of a snow-covered Citlaltépetl (also known as Pico de Orizaba), Mexico's highest mountain – the social history of Mexico's Porfiriato rendered as natural history. Other characteristic examples of semi-peripheral industrial visual modernism included the work of Russian painter Ilya Repin (described more fully below), Swedish painter Anna Ancher's *Fisherman's Wife Sewing* (1890), which depicted its plebian female subject next to a modern industrial sewing machine, and Japanese painter Asai Chu's three most realized works, *Spring Ridge* (1889), *Harvest* (1890), and *Washing Place in Grez-sur-Loing* (1901).

This dynamic of divergence between the core and semi-periphery would go into reverse between 1904 and 1914, as the semi-periphery began to develop its own international culture-industries as well as its own national imperial audiences. This resulted in the reconvergence of the industrial modernisms of the semi-periphery with those of the core,

resulting in their fusion in the international modernisms of 1914-1945.⁴⁵⁷

It is important to stress that the relationship between the core and semi-peripheral variants of industrial modernism was never one of direct competition or overt antagonism, but of partial disjunction and intermittent parallelism. This disjunction and parallelism gave rise to a phenomena unique to the 1878-1904 conjuncture, or what we will term zones of semi-peripheral internationalism. These zones were generated by the capacity of the artists and audiences of the semi-periphery to retrofit and consume core aesthetic forms in unexpected ways, as well as to invent aesthetic forms capable of appealing to the artists and audiences of the core on a mass basis.

One of the most striking examples of these zones was japonisme, a.k.a. the post-1868 export of Japan's landscape paintings, prints and textiles to European and American consumers. To be sure, much of japonisme's popular appeal was its capacity to sell representations of Japan's Tokugawa-era proto-industrial commercialization to core consumers who thought they were purchasing symbols of Oriental antiquity. That said, japonisme had an enduring impact on the fashion industries of the core as well as on the Impressionists and their core successors.

A second example of these semi-peripheral zones was the field of music composition. Whereas London was the metropole of economics during Global Steam and where Paris was the metropole of visual aesthetics, Vienna was the metropole of music. The Austrian capital's system of dynastic musical patronage as well as its nascent national imperial audiences sustained the careers of Brahms, Bruckner and Mahler precisely where other capital cities such as Amsterdam, Antwerp, Berlin, Rome and St. Petersburg could not.⁴⁵⁸ Consequently, the musical chromaticism

⁴⁵⁷ It should be noted that the reconvergence of the artists and audiences of the core and semi-periphery during the third supercycle did not encompass the artists and audiences of the periphery. These latter followed their own distinct trajectories between 1860 and 1945. Volume 7 of *Meditations on Geopolitics* will analyze the 1945-1973 reconvergence of the artists and audiences of the periphery vis-a-vis those of the already-converged core and semi-periphery.

⁴⁵⁸ Paul Hawkshaw has made a convincing argument that Otto Kitzler played a key role in enabling Bruckner to make the transition from provincial organist to world-class composer: "Considerable credit is due to [Otto] Kitzler. Apart from identifying appropriate texts and synthesizing material, he must have been able to interact with Bruckner, who was, after all, something of an unusual pupil: a world-class organist with an exceptional grasp of counterpoint and superb improvisational skills, yet with a professional musical experience confined primarily to the rural reaches of Upper Austria. Kitzler had to bring Bruckner up to date with contemporary practice, introduce him to the standard non-liturgical repertoire, and instruct him in the fundamentals of form and orchestration.

These objectives were accomplished to the satisfaction of both teacher and pupil in less than two years. Kitzler reported in his memoirs that 'one day he [Bruckner] asked me when he would be set free. When I replied that it could happen any day because he had already overtaken his teacher who had nothing more to offer him, he didn't want to let it happen so easily. He invited me and my wife for a ride in the country and afterwards brought us to the Jagerhaus in the Kirnberger forest where the official liberation took place at a festive meal.' Perhaps the most telling evidence of Kitzler's impact is that Bruckner's lifelong devotion to the music of Wagner stems from this period." Paul Hawkshaw (1998). "A Composer Learns His Craft: Anton Bruckner's Lessons in Form and Orchestration, 1861-63." *The Musical Quarterly* 82:2 (355).

achieved by Viennese-based composers as early as 1876 – the year of Brahms’ *Symphony 1* and Bruckner’s *Symphony 5* – set the world standard for compositional innovation for two decades (the composers of the core would eventually catch up in the form of Claude Debussy’s 1894 *Prelude to the Afternoon of a Faun*).⁴⁵⁹

St. Petersburg came the closest to matching Vienna’s feat in the form of the so-called Mighty Handful, a.k.a. Mily Balakirev, Alexander Borodin, César Cui, Modest Mussorgsky and Nikolai Rimsky-Korsakov, composers active between 1856 and 1870. But whereas the Handful helped to establish an authentically Russian musical style, they did not revolutionize the field of music composition in the manner of the Viennese composers. Something similar is true of Wagner’s Bayreuth, which was intended to be the German answer to Britain’s Royal Albert Hall and France’s Palais Garnier but succeeded only in being a Potemkin Vienna.

A third example of these semi-peripheral zones was the Russian empire’s invention of a Russian ethno-national past at the Paris Exposition of 1900. Whereas the French pavilion of this latter showcased the indigenous peoples of French colonial Africa and Asia like so many exhibits in a zoological garden,⁴⁶⁰ the Russian pavilion created its own zoo of self-Orientalization in the form of the Berendeevka village. This industrial refresh of the Potemkin village retconned the Russian empire’s 18th century Russian balalaika and 19th century artisanal handicrafts movement into a largely fictitious – but highly salable – Russo-national folk mythos:

The Berendeevka village in Paris looked as if it was borrowed from [Ostrovsky’s] *The Snow Maiden* sets. The handicrafts pavilion comprised four buildings connected by a gallery: a peasant home, a boyar’s home, a church, and a section for modern kustar [folk art] objects. As if to further amplify the impression that all these structures were genuinely Russian, the committee chose to transport whole logs and a team of peasants to construct the pavilion on site in Paris. In March 1900, the journal *L’Illustration* [English: Illustration] published a photograph showing Russian moujicks [muzhiks: subsistence farmers] working on their Kustar pavilion, which enhanced the authenticity of the installation as well as its exotic appeal. The Borderlands pavilion, where the majority of Russian exhibits was situated, was likewise designed in the Russian fashion as a grandiose reproduction of the Moscow Kremlin.

⁴⁵⁹ The greatest musical works of the semi-periphery from this period included Bruckner’s *Symphony No. 5* (1878), *Symphony No. 7 in E major* (1883), *Symphony No. 8 in C minor* (1887), and the unfinished *Symphony No. 9* (1896), Alexander Borodin’s *In the Steppes of Central Asia* (1880) and *Polovtsian Dances* (1887), Tchaikovsky’s *Sleeping Beauty* (1889), *The Nutcracker* (1891) and the *Symphony No. 6 in B minor*, *Opus 75* (1893), Wagner’s *Parsifal* (1882), Brahms’ *Symphony No. 3* (1883), *Symphony No. 4* (1884), *Second Cello Sonata, Opus 99* (1886), *Second Violin Sonata in A major, Opus 100* (1886), *Third Violin Sonata in D minor, Opus 108* (1888), *String Quintet in G major, Opus 111* (1890), *Clarinet Quintet in B minor, Opus 115* (1891), and *Two Clarinet Sonatas, Opus 120* (1894), and Puccini’s *Bohemia* (1896), *Tosca* (1900) and *Madame Butterfly* (1904).

⁴⁶⁰ “[French colonial] Indo-China, Cambodia, Senegal, Tunisia, and especially Algeria all had pavilions grander than those of several rich sovereign states elsewhere at the exposition. Long before the opening, France had imported hundreds of native craftsmen to erect and decorate these oddly diverse and gaudy palaces. The colonial architects and workers then stayed through the summer for ‘atmosphere.’” Richard D. Mandell. *Paris 1900: The Great World’s Fair*. Toronto: University of Toronto, 1967 (66).

Inside the Russian Berendeevka village were showcased some 6000 objects, including laces, shawls, fabrics, toys, furniture, icons, and religious items. In particular, critics noticed designs by artists Vrubel, Elena Polenova, Mariia Iakunchikova-Veber, Natal'ia Davydova, and Aleksandr Golovin. Overall, Russian handicrafts of various kinds received 119 awards and brought 18,500 rubles in revenue.

Foreign observers especially praised the splendid balalaikas produced in Talashkino, which attracted additional attention due to Vasily Andreev's orchestra of folk instruments, one of the hits in Paris during the exhibition. Balalaikas, which first appeared in Russia around the early eighteenth century, were nearly entirely forgotten by the middle of the nineteenth, only to be rediscovered as part of an old folk tradition in the course of the national revival movement. Reviews in the West readily praised the balalaika's antiquity.⁴⁶¹

It should be stressed that none of these zones of semi-peripheral internationalism were inherently progressive or revanchist in their own right. Just as the culture-industries of the core were the sites of unremitting contestation between a range of progressive internationalisms and a range of plutocratic and national imperial revanchisms, so too were these semi-peripheral zones fiercely contested by an array of international progressivisms on the one hand, and a bevy of oligarchic, national imperial and dynastic revanchisms on the other.

Between 1878 and 1904, the greatest works of industrial modernism forged in the cauldron of the core's culture-industries embodied a progressive internationalism, precisely where the greatest works of industrial modernism constructed in these zones of semi-peripheral internationalism embodied an international progressivism. The progressive internationalisms of core artists were designed to appeal to literate and commercialized audiences who thought of themselves as national imperial citizens and industrial-era consumers, precisely where the international progressivisms of semi-peripheral artists were designed to appeal to partly-literate and semi-commercialized audiences who thought of themselves as members of pre-industrial dynastic, feudal, mercantile, confessional and agrarian collectivities and communities. Put bluntly, the artists of the core sought to create avant-gardes capable of changing public opinion, where the artists of the semi-periphery sought to create publics which would eventually become capable of sustaining avant-gardes of their own.

One of the best examples of the progressive internationalism of the core was Eduard Manet's *The Bar at Folies-Bergere* (1882). This painting was a powerful critique of the alienation and anomie of industrial consumerism, which depicted the fully waged waitress as the main object of the painting as well as its implicit subject: her experiences and memories are relayed by the non-realistic background of the painting, a series of disconnected snapshots artfully disguised as a realistic panorama. Conversely, one of the best examples of the international progressivism of the semi-periphery was the work of Russian painter Ilya Repin.

Born and raised in central Ukraine by an ethnically Russian military family, Repin developed a lifelong appreciation for Ukraine's countryside and literature, going so far as to call Ukrainian national poet Taras Shevchenko an "apostle of freedom".⁴⁶² Repin's earliest classics –

⁴⁶¹ Katia Dianina (2012). "'Our Berendeevka': The Invented Tradition of Russian Modernity." *Canadian-American Slavic Studies* 46:4 (461-462).

⁴⁶² Galina Mardilovich deserves credit as the first to argue that Ilya Repin was a practitioner of late 19th

Barge Haulers on the Volga (1883), *The Annual Memorial Meeting Near the Wall of the Communards in the Cemetery of Père Lachaise in Paris* (1883), *The Revolutionary Meeting* (1883), *Unexpected Visitors* (1888) and *Putting a Propagandist Under Arrest* (1892) – critiqued the repressive reign of Alexander III (1881-1894) from the standpoint of a mostly Russo-national audience. By contrast, Repin's *The Reply of the Zaporozhian Cossacks to Sultan Mehmed IV* (1896), channeled the Russian audience's demand for liberalization during the reign of Nicholas II through the aspirations of its nascent Ukrainian audience. Similarly, the subtext of *Double Portrait of Natalia Nordmann and Ilya-Repin* (1903), and *What a Freedom!* (1903) registered the anti-colonial protest of Finnish audiences against Russia's dynastic empire of capital (Nordmann, Repin's partner, was Finnish).

In fact, internationalized audience-building was the universal subtext of the leading prose works of the semi-periphery during this period. Machado de Assis' Portuguese-language novels and short stories profound meditations on Brazil's semi-peripherality and the imperial delusions of its oligarchic elites, while Jose Rizal's classic Spanish-language novels *Touch Me Not* (1886) and *Subversion* (1891) explored the contradictions of the Spanish empire's colonial diaspora vis-a-vis the comprador elites of the Philippines.

Similar dynamics can be discerned in Ricardo Palma's prose collection *Peruvian Traditions* (1871-1910), which transformed a wide array of anecdotes, proverbs, journalism and folk-tales into the template of Peruvian national literature. In the field of Russian-language prose, Dostoyevsky's landmark cultural journalism in *A Writer's Diary* (1873-1881) gave him the national platform and stable income necessary to create *The Brothers Karamazov* (1880), while Maxim Gorky's work as a journalist informed his Naturalist classic *The Lower Depths* (1902). In the realm of Turkish-language prose, Halit Ziya Uşaklıgil's *The Forbidden Love* (1900) delivered the first classic Turkish novel of industrial modernism. Most famous of all, Thomas Mann's *Buddenbrooks* (1900) drew upon his childhood memories of the Hanseatic port of Lübeck to create the classic German-language novel of late 19th century bourgeois family decadence.

In the realm of theater, this internationalized audience-building took the form of Ibsen's *A Doll's House* (1879), *Ghosts* (1881),⁴⁶³ *An Enemy of the People* (1882), *The Wild Duck* (1884), and *Hedda Gabler* (1890). These works were written during Ibsen's twenty-seven years of exile from his native Norway, when he was an expatriate observer of other peoples' audience-formations. Conversely, the contradictions of Norway's own audience-formation formed the main subtext of his final works, most notably *When We Dead Awaken* (1899). August Strindberg's travels throughout Europe between 1883 and 1889 were critical to the creation of his classic Swedish-language plays *Miss Julie* (1888), *To Damascus* (1898-1904), and *A Dream Play* (1901),⁴⁶⁴ while Anton Chekhov's stint as a journalist for the St. Petersburg newspaper *New*

century visual modernism. See: Galina Mardilovich. "Chapter 3: An Exercise in Looking: Ilya Repin's *They Did Not Expect Him*." In: *New Narratives of Russian and Eastern European Art*. Edited by Galina Mardilovich and Maria Taroutina. New York: Routledge, 2020.

⁴⁶³ The original title of "Ghosts" was "Gengangere", is a Danish word which literally means "again-walkers", i.e. revenants. Danish was the common written language of independent Denmark and colonized Norway during the late 19th century.

⁴⁶⁴ "'Next summer we will be back on [vacation resort] Kymmendö', he [Strindberg] promised [his wife], but six years would pass before they came back to Sweden. First they would live in Grez, Paris,

Times during the late 1880s, his account of his visit to a Siberian convict colony (published as *The Island of Sakhalin* in 1893-1894), and his career as a practicing physician were crucial to his classic Russian-language plays *The Seagull* (1895), *Uncle Vanya* (1897), *The Three Sisters* (1900) and *The Cherry Orchard* (1903).

One of the most productive ways to grasp the contradictions of national imperial audience-formation and the aesthetics of international progressivism in the semi-periphery is by comparing three of the iconic works of art which inaugurated the 1878-1904 conjuncture, namely Ibsen's *A Doll's House* (1879), Wagner's *Parsifal* (1882), and Dostoyevsky's *The Brothers Karamazov* (1880).

All three were internationally progressive responses to the three lockdowns of the semi-periphery we described previously. Ibsen's breakthrough play responded to the lockdown of the twenty-nine oligarchic republics by creating theatrical Naturalism, Wagner's final opera responded to the lockdown of the six national imperial capitalisms by inventing musical Naturalism (a.k.a. fully emancipated chromaticism), while Dostoyevsky's final novel responded to the lockdown of the five dynastic empires of capital by innovating Russian-language prose Naturalism.

Our first example of this international progressivism is Ibsen's *A Doll's House*, one of the paradigmatic works of the oligarchic republics of the semi-periphery. Consider this crucial scene where Nora's first bout of open hysteria is linked to her upcoming dance performance dressed in Neapolitan garb for a local Consul:

Nora: *starts to unpack the box but soon throws it all aside*: "Oh, if I dared to go out. If only I knew nobody would come. That nothing would happen here at home in the meantime. Stuff and nonsense; nobody's coming. Just don't think. Brush my muff. Lovely gloves, lovely gloves. Push it away; push it away! One, two, three, four, five, six –" *Screams*. "Ah, they're coming –" *Starts for the door, but stands irresolute*.

Mrs. Linde comes in from the hall, where she has left her outdoor things.

Nora: "Oh, is it you, Kristine? There's nobody else out there, is there? – It's so good you came."

Mrs. Linde: "I hear you've been up asking for me."

Nora: "Yes, I was just passing. There's something you really must help me with. Let's sit here on the sofa. Look. There's going to be a fancy dress ball tomorrow evening, upstairs at Consul Stenborg's, and Torvald wants me to be a Neapolitan fisher-girl and dance the tarantella – I learned it on Capri."⁴⁶⁵

Consuls were merchant-diplomats who pursued their own trading interests while promoting the

Lausanne, Pegli, Genoa, Lausanne, Chexbres, Geneva, Lausanne, Paris, Luc-sur-Mer, Paris, Grez, Othmarsingen, Weggis, Gersau, Issigathsbühl, Copenhagen, Klampenborg, Taarbeck and Skovlyst, and the time abroad would transform him from an essentially Swedish writer into a European voice." Sue Prideaux. *Strindberg: A Life*. New Haven: Yale University Press, 2012. Chapter 6.

⁴⁶⁵ Henrik Ibsen. *A Doll's House*. Translated by Deborah Dawkin and Erik Skuggevik. New York: Penguin Classics, 2016. Act 2.

foreign policy interests of their empire.⁴⁶⁶ Just as the Neapolitan chord signified extreme dissonance in the context of mid- to late-19th century European tonality, Nora's Neapolitan garb evoked Norway's plight as a semi-periphery under Swedish colonial rule. Conversely, her open rebellion in Act 3 foreshadowed Norway's independence twenty-four years after the first publication of the play:

Nora: "Well, that's how it is, Torvald. When I was at home with Daddy, he told me all his opinions, and then I had the same opinions; and if I had others, I hid them; because he wouldn't have liked it. He called me his doll-child, and he played with me, just as I played with my dolls. And then I came into your house _"

Helmer: "What kind of way is this to describe our marriage?"

Nora: *impervious*: "I mean, I then went from Daddy's hands over into yours. You arranged everything according to your taste, and I acquired the same taste as you; or I only pretended to; I don't know really; I think it was both; sometimes one and sometimes the other. When I look at it now, I think I've lived like a pauper here – just from hand to mouth. I've lived by doing tricks for you, Torvald. But that was how you wanted it. You and Daddy have wronged me greatly. The two of you are to blame for the fact that nothing has come of me."

Helmer: "Nora, how unreasonable and ungrateful you are! Haven't you been happy here?"

Nora: "No, never. I thought so; but I have never been that."

Helmer: "Not –? Not happy?"

Nora: "No; just cheerful. And you've always been so kind to me. But our home has never been anything other than a play-house. I've been your doll-wife here, just as at home I was Daddy's doll-child. And the children, they have in turn been my dolls. I thought it was amusing when you came and played with me, just as they thought it was amusing when I came and played with them. That's been our marriage, Torvald."⁴⁶⁷

What raised Ibsen's play from a covert expression of Norwegian anti-colonial

⁴⁶⁶ The British consul to Norway between the 1820s and 1875 was typical of the species: "John Rice Crowe settled as merchant and entrepreneur in northern Norway around 1820, and was soon made British consul. Around the mid-1830s, he began to send dispatches to London where he described the potential Russian threat to the area, thus playing a pivotal role in creating a widespread and lasting fear of Russian intentions in parts of Norwegian, Swedish and other public opinions. Crowe continued reporting along the same lines when he moved to Christiania as consul-general in 1844, a post he held until 1875. During the Crimean war, he managed to persuade his superiors that the threat from the east was imminent, which again led to the November Treaty of 1855, where Great Britain and France promised to protect Sweden-Norway against Russian attack. Crowe was also crucial in securing British funding and expertise for the first Norwegian railroad. Since the November Treaty implied a major reorientation in foreign policy, and the building of railroads was a central government project during this era, it is easy to conclude with Platt that the consulate in Christiania belonged to a group of consulates that were 'diplomatic missions under a different name'." Halvard Leira and Iver B. Neumann (2008). "Consular Representation in an Emerging State: The Case of Norway." *The Hague Journal of Diplomacy* 3:1 (15).

⁴⁶⁷ Henrik Ibsen, *A Doll's House*. Act 3.

nationalism to one of the transcendental dramatic works of its time was the proto-feminism of its two main female characters, Kristine Linde and Nora Helmer. Both proto-feminisms were mediated via the category of fully waged labor. Kristine refuses to give up her clerical job and defies the social norms of the time by voluntarily choosing Krogstad as her romantic partner.

Conversely, Nora rejected Helmer's final argument ("You are first and foremost a wife and mother") on the grounds of the voluntary political commitment: "I don't believe that any more. I believe I am first and foremost a human being, I, just as much as you – or at least, that I must try to become one."⁴⁶⁸ The famous slamming of the door which concluded the play affirmed the power of fully waged Norwegian female laborers to make democratic choices in Sweden's semi-peripheral empire, a clarion call of international progressivism which Ibsen's later works would muffle.⁴⁶⁹

Wagner's *Parsifal* offers a second model of international progressivism, one typical of the six national imperial capitalisms of Global Steam. This progressivism consisted of the progressive aspiration of fully waged laborers for full electoral representation and higher wages, combined with the potentially revanchist aspiration for imperial land and an increased share of the colonial surplus.

The signal achievement of *Parsifal* was the definitive replacement of the partly chromatic leitmotif by the fully chromatic coloratura. One of the most important functions of the leitmotif in the *Ring* cycle was to reconcile potentially antagonistic instrumental timbres, i.e. the spectrum from the pastoral flute and Siegfried's medieval horn to the industrial-era Wagner tuba. Yet what might seem to the ears of untutored listeners to be leitmotifs in *Parsifal* – most famously, the theme depicted by the opening six bars of the prologue, inspired by Dresden-based Johann Gottlieb Naumann's late 18th century *Dresden Amen* – are nothing of the sort. They are sophisticated sequences of coloratura which simulate the leitmotif. In effect, Wagner expanded the four minutes of fused leitmotifs which followed Hagen's final line in *Twilight of the Gods* into the four hours of the post-leitmotif *Parsifal*.

The central musical innovation of this latter was the unleashing of the full power of chromaticism by means of coloratura-based counterpoint. This counterpoint plebianized the field of musical composition, by enabling all instrumental timbres to coexist as equal forms of coloratura within a single acoustic space. Put metaphorically, if the instrumental finale of *Twilight of the Gods* was the steam-whistle heralding the departure of chromaticism from the railway station of tonality, the corresponding finale of *Parsifal* portrayed the scenery passing by the window as the train accelerated away from the station.

The three hallmarks of this spatial plebianization were the expansion of instrumental voices, the emancipation of the brass section, and the expansion of the lower bass typified by the "Parsifal bell", a handcrafted set of piano strings which simulate the effect of an unusually deep bell.⁴⁷⁰ Peter Latham has summarized these innovations as follows:

⁴⁶⁸ Henrik Ibsen, *A Doll's House*. Act 3.

⁴⁶⁹ The tragic female characters of *The Wild Duck*, *Hedda Gabler*, *The Master Builder* and *When We Dead Awaken* are primarily the externalized projections of the psychological crisis of the male protagonists, and only intermittently autonomous subjects in their own right. That said, Ibsen's final plays were insightful critiques of Norway's semi-peripheral national imperial capitalism, an issue we will revisit in Chapter 10.

⁴⁷⁰ Kathleen Schlesinger (1911). "Parsifal bell-instrument". In: *Encyclopædia Britannica* 20, 11th edition.

When, however, he [Wagner] came to the wood-wind, where each part in the score is played by a single instrument instead of a group, he found it impossible to proceed in the same way without adding to the number of players; for the two flutes, two oboes, two clarinets, and two bassoons, with which Beethoven was usually content were clearly insufficient to produce the subtle shades of colour that he loved. So we see him adding a third flute (or a piccolo) to the flute group, a third oboe (or a tenor oboe, *coy anglais*) to the oboes, a third clarinet (or bass clarinet), and a third bassoon (or double bassoon). This enabled him to obtain three-part harmony in any of the four principal wood-wind timbres and is in a large measure responsible for the rich sonority of his passages for full orchestra, besides accounting for the mellow smoothness that characterizes his writing for wood-wind alone.

But it is in the brass that we notice the most conspicuous advance. Not only does Wagner pursue the same plan here as in the wood-wind, using four (or more) horns regularly, three trumpets, and reinforcing the three trombones with a bass tuba, but he is able, owing to improvements in the mechanism of some of these instruments, to treat them with far greater freedom than had been possible hitherto. Mozart, Beethoven, and even Weber, when writing for horns or trumpets, had been compelled to confine themselves to a mere handful of notes since the ‘natural horns’ and ‘natural trumpets’ that their players used were only capable of producing the series of sounds that we call, for obvious reasons, the ‘bugle notes,’ and a very few others. This cruel limitation prevented their allotting any but the simplest themes to these instruments (and it must be remembered that Mozart and Beethoven seldom used the more versatile trombones), it forced them if they wished to carry their music into some remote key to ‘leave their horns and trumpets behind them,’ and generally it relegated the brass to a subordinate position in the background that was quite unworthy of its dignity, besides occasioning some clumsy writing that a later generation unaware of the difficulty has sometimes been too ready to condemn. During the nineteenth century, however, instrument makers set themselves to remove this reproach to their profession, and they succeeded in evolving the valve horn and valve trumpet on which it was possible to produce almost any note that was within the instrument’s compass. Wagner was, perhaps, the first to realize the full potentialities of this invention, and his free and effective use of it sounded the death-knell of the older instruments. For the Wagnerian brass no key is impossible, no note inaccessible, and the group takes its rightful place as an equal beside the wood-wind and the strings.⁴⁷¹

Where the *Ring* cycle invented the template of the Hollywood action-adventure film, *Parsifal* invented the sonic engineering of the hit sound recording.⁴⁷² What lagged behind

Edited by Hugh Chisholm. Cambridge: Cambridge University Press (867–868). Also see: Steingraeber. *Parsifal Bells*. <https://www.steingraeber.de/en/innovationen/parsifal-bells/>.

⁴⁷¹ Peter Latham (2012). “Wagner: Aesthetics and Orchestration.” *Gramophone UK*.

<https://www.gramophone.co.uk/features/article/wagner-aesthetics-and-orchestration-by-peter-latham>

⁴⁷² At the end of Act 1, Scene 1, Wagner highlighted this engineering with the panache of the world’s first recorded music producer:

Parsifal: “I’ve scarcely walked,
Yet it seems I’ve already gone far.”
Gurnemanz: “You see, my son,
Here time turns into space.”

Parsifal's musical innovations, on the other hand, was the libretto, which still bore the imprint of the obsolete imperial national mythos of the *Ring*. On the plus side of the ledger, there were no wholly malevolent villains in *Parsifal* comparable to the *Ring*'s Alberich, Mime or Hagen, nor were there externally conflicted but emotionally inert protagonists such as Wotan and Siegfried. Every major character in *Parsifal* wrestled with self-doubt and despair, and had to confront unpalatable truths about themselves.

On the minus side, the faithful Gurnemanz, the innocent Parsifal, and the villainous Klingsor remained locked into the mythological archetypes of the devoted knight, the holy fool, and the wicked wizard, respectively, and did not evolve into the psychological tropes of the national ego, the imperial superego and the colonial id characteristic of the greatest literary works of the core polities.⁴⁷³ This lack of evolution was not due to any aesthetic deficiency on Wagner's part. It was due to the structural underdevelopment of the culture-industries of the semi-periphery vis-a-vis those of the core polities.

This underdevelopment was most glaring in Act 2, where Klingsor's magic castle was a mid-Victorian Gothic cliché, Klingsor's flower-maidens were not credible as industrial-era female shoppers, while Klingsor himself was an anti-Semitic caricature of Meyerbeer so patently absurd that Wagner restricted his on-stage role to just eleven minutes in a four-hour opera. Similarly, where Baudelaire's lyric works transformed the raw materials of French industrial racism and anti-colonial insurrection into the trope of the African and Asian colonial temptress, the figure of Kundry exuded the provincial otherness of the post-1871 German empire's Alsatian, Danish, Jewish and Polish national minorities.⁴⁷⁴

One of the signal ironies of *Parsifal*'s rapturous reception was that the critics of the day universally failed to appreciate the bedrock secularism of the work, and praised Wagner for dispensing with the *Ring*'s pagan mythos and embracing a Hohenzollern-approved Christianity. This was simply not true, and not just because Wagner remained a Feuerbachian humanist his entire life. The reason for this misinterpretation, which even Nietzsche fell prey to, was that the full implications of *Parsifal*'s composition could be grasped only by the most progressive

[Parsifal: "Ich schreite kaum, / doch wähn' ich mich schon weit." / Gurnemanz: "Du siehst, mein Sohn, / zum Raum wird hier die Zeit."] Richard Wagner, *Parsifal*. Act 1, Scene 1. This is my translation.

⁴⁷³ For example, Verne's *Twenty Thousand Leagues Under the Sea* depicted Professor Arronax as the Cartesian ego, Ned Land as the British-Canadian superego, and Britain's colonial despotism (cf. Captain Nemo's colonial origins) as the id of the 1870 French empire. Similarly, Twain's *Huckleberry Finn* depicted Huck as the ego, Aunt Polly as the superego, and Huck's alcoholic father as the settler-colonial id of the post-1862 US empire.

⁴⁷⁴ Linda Hutcheon and Michael Hutcheon came closest to identifying this provincialism: "However, Kundry is presented as dangerous and different in other ways as well. A dangerous alien, she is called a heathen and a sorceress; she is described as being wildly dressed, with black hair flowing in loose locks, and piercing black eyes, sometimes wild and blazing, sometimes fixed and unmoving. Yet, in Act II this 'accursed' woman is transformed into a 'fearfully' beautiful temptress. She is also consistently associated with Arabia: she brings Amfortas's balsam from there; her dress, when she tries to seduce Parsifal, is said to resemble Arab style. A number of critics have read Kundry's beauty as specifically semitic, indeed Jewish." Linda Hutcheon and Michael Hutcheon (1995). "Syphilis, Sin and the Social Order: Richard Wagner's *Parsifal*." *Cambridge Opera Journal* 7:3 (270).

musicians of the core polities.

The classic example was Debussy, who first encountered *Tristan and Isolde* in 1887 and was so enamored of Wagner's chromaticism that he attended two seasons of Bayreuth during 1888 and 1889. Debussy's famous 1903 quip, "Wagner, if expressed with a bit of the grandiloquence befitting him, was a beautiful sunset taken for a sunrise,"⁴⁷⁵ was more than just a retrospective takedown of Bayreuth's aesthetic provincialism. It was tacit acknowledgement that Wagner's coloratura disguised shockingly subversive dissonances in the guise of socially-approved consonances.

Put bluntly, *Parsifal*'s libretto was the progressive sunset of industrial literary realism, precisely where *Parsifal*'s chromaticism was the progressive sunrise of industrial musical modernism. This helps to explain why Wagner managed to avoid the dismal fate of Tchaikovsky's *Manfred Symphony in B minor, Opus 58* (1885), whose first three movements were successful but whose finale famously sank into the trackless swamps of musical kitsch.⁴⁷⁶ In Act 2 of *Parsifal*, Wagner did more than just expand Kundry's singing range and endow her with some of the most jagged dissonances of his entire career. Above all, Wagner compensated for *Parsifal*'s archaic libretto by staging the redemption of the redeemer. This redemption was not theological in nature, but industrial through and through.

Whereas every key plot twist of the *Ring* cycle was the expansion and extension of Alberich's sacrifice of love for the sake of unlimited accumulation, every key plot twist in *Parsifal* is the expansion and extension of the abolition of sacrifice. Gurnemanz does not punish Parsifal for slaying the swan, but educates the latter by allowing him to witness the first Grail ceremony. Similarly, Parsifal does not punish the flower-maidens or Kundry in Act 2 for serving Klingsor, but dissolves the sacrifice-inducing spell of the latter. Brünnhilde's immolation is

⁴⁷⁵ "Wagner, si l'on peut s'exprimer avec un peu de la grandiloquence qui lui convient, fut un beau coucher de soleil que l'on a pris pour une aurore." Claude Debussy. *Claude Debussy: Monsieur Croche et autres écrits* [Mr. Croche and Other Writings]. Edited by François Lesure. Paris: Gallimard, 1987 (67). This is my translation. Debussy's comment was originally published in *Le Mercure de France* [The Mercury of France] in January 1903.

⁴⁷⁶ "Yet the problem had begun much earlier, and much more seriously. The [final] movement had opened so promisingly. The bacchanal is vividly conjured at length, the impact of Manfred's abrupt intrusion is well caught in music that conveys the dislocation it causes and the bated breath with which the horde views this strange intruder. Manfred identifies himself with his second theme – all this is very well handled. But heaven only knows why Tchaikovsky should have chosen a fugue to convey the horde's response to Manfred, once they had recovered from their initial surprise (but perhaps a fugue's 'learned' character would suggest that the horde were holding a debate on the matter. I doubt it!). A fugue is, by its very nature, totally undramatic, implacably inward-searching in its fixation on one thematic idea (its subject), and remorselessly measured in its progress: in this context, it cannot sound other than stodgy – which it does. It is the fatal flaw of the symphony, from which it can never subsequently recover completely, for all the resumption of the orgy, followed by Astarte's entrance (to her first-movement music, but now with harp washes and the incorporation of new material), Manfred's response, then a return of his music which had closed the first movement. But there follows an overblown apotheosis: too much gesture, too little true substance." David Brown. *Tchaikovsky: the Man and his Music*. London: Faber & Faber, 2010. Chapter 22. *Manfred Symphony* and *The Enchantress*.

replaced by Kundry's fainting spells, the flood of the Rhine by the Good Friday idyll, Siegfried's blood-stained sword by the nonviolent spear of compassion, and Valhalla's tragic doom by wilted flowers:

Klingsor has emerged on the fortress wall and aims a lance at Parsifal.

Klingsor: "Stop right there! I'll dispel you with just the right means!

Against the fool I wield his master's spear!"

He [Klingsor] hurls the spear at Parsifal, which remains hovering over the latter's head.

Parsifal: *seizing the spear with one hand and holding it over his head:*

"With this sign [Zeichen] I dispel your magic.

Just as it closes the wound,

Which you smote him with,

Let it topple your lying splendor

into grief and rubble!"

He has swung the spear in the sign of the cross, the castle sinks as if in an earthquake. The garden quickly withers into a wasteland; dried-up flowers are scattered on the floor. – Kundry has collapsed screaming.

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Adorno was the first to note Parsifal's triumph over Klingsor marked the triumph of fully-emancipated coloratura (Adorno used the term "Gesamtkolorit" or "total coloration") over the First Viennese School's principle of thematic variation. This triumph did not sacrifice the achievements of the latter, but abolished the elements of musical sacrifice endemic to such. Consonance no longer dominates dissonance, the major chord no longer dominates the minor chord, and the settled key no longer dominates the variant key. Instead, Wagner opened the door to a wide-ranging and pervasive musical democratization:

When the spear remains hovering over the head of the hero towards the end of the second act, the miracle is not musically mirrored by the brilliance and wealth of the structure, but through an extreme reduction

⁴⁷⁷ *Klingsor ist auf der Burgmauer herausgetreten und schwenkt eine Lanze gegen Parsifal.*

Klingsor: "Halt da! Dich bann' ich mit der rechten Wehr!

Den Toren stelle mir seines Meisters Speer!"

Er schleudert auf Parsifal den Speer, welcher über dessen Haupte schweben bleibt.

Parsifal: *erfasst den Speer mit der Hand und hält ihn über seinem Haupte:*

"Mit diesem Zeichen bann' ich deinen Zauber.

Wie die Wunde er schliesse,

die mit ihm du schlugest,

in Trauer und Trümmer

stürz' er die trügende Pracht!"

Er hat den Speer im Zeichen des Kreuzes geschwungen wie durch ein Erdbeben versinkt das Schloss. Der Garten ist schnell zu einer Einöde verdorrt; verwelkte Blumen verstreuen sich auf dem Boden. – Kundry ist schreiend zusammengesunken. Richard Wagner, Parsifal. Act 2, Scene 2.

of means. The faith leitmotif on trumpets and trombones, a harp glissando, an octave tremolo of the violins – that is all. The orchestral treatment of melody division, soloistic splitting, and the ideal of the smallest difference consistently turn away. It is far more choral than all previous musical dramas; more Brucknerian, one might say. The tutti [Italian: musical notation for all or together, i.e. when the entire chorus sings] passages alternate with recitative-like ones, with only glancing accompaniment. But the refinement of this simplicity is incomparable; the finesse is in what is omitted, not forgotten. The choral treatment is based on doubling. It scarcely allows any instrument or any sound group to be distinguishable as such. A sound-mix like that of the beginning, when the Last Supper motif returns, accompanied by violins, oboes and a ‘very tender’ – and thus not standing out as a soloist – trumpet is unique. The art of blending wind instruments which was limited in *Lohengrin* to the woodwinds is now extended to those of brass: both trumpets and trombones are often doubled by horns which are utilized to the fullest. This softens the bright sharpness of the sound; it becomes fuller and darker at the same time, just like the total coloration [Gesamtkolorit] of *Parsifal*: such dimmed orchestral sound of the muted forte has won the utmost importance for modern music from late Mahler to Schönberg.⁴⁷⁸

This “muted forte” was a miniaturized or portable coloratura, the acoustic equivalent of the mass-produced Impressionist postcard. During the first half of Act 3, i.e. from the opening prologue to the moment when Gurnemanz anoints Parsifal as the new king of the knighthood, the dissonances of Act 2 are remixed into a portable coloratura of acoustic alienation which underlines the weight of Parsifal’s long exile. The second half of Act 3 remixed the most memorable themes of Act 1 into a portable coloratura of festive celebration, everywhere from the homespun warmth of the Good Friday theme to the closing restatement of the *Dresden Amen* via a magnificent circle of fifths.⁴⁷⁹

⁴⁷⁸ “Wenn gegen Ende des zweiten Akts der Speer überm Haupt des Helden schweben bleibt, so wird das Wunder musikalisch nicht durch Glanz und Reichtum der Faktur, sondern durch eine äußerste Reduktion der Mittel gespiegelt. Das Glaubensmotiv in Trompeten und Posaunen, ein Harfenglissando, ein Oktavtremolo der Geigen, das ist alles. Durchweg kehrt die Orchesterbehandlung von Melodieteilung, solistischer Aufspaltung, vom Ideal der kleinsten Differenz sich ab. Sie ist weit chorischer als in den Musikdramen zuvor; Brucknerischer, könnte man sagen. Tuttistellen wechseln mit rezitativähnlichen, nur andeutend begleiteten. Aber das Raffinement dieser Simplizität ist beispiellos; die Finessen sind ausgespart, nicht vergessen. Das chorische Verfahren beruht auf Verdopplung. Sie erlaubt kaum einem Instrument, kaum einer Klanggruppe mehr, als solche kenntlich zu werden. Ein Mischklang wie der am Anfang, wo das Abendmahlsmotiv begleitet wiederkehrt, von Geigen, Oboen und einer »sehr zarten«, also nicht solistisch hervortretenden Trompete vorgetragen, ist einzigartig. Die Kunst der Bläsermischungen, die im *Lohengrin* sich auf das Holz beschränkte, wird nun auch dem Blech zuteil: Trompeten sowohl wie Posaunen werden gern durch die bis zum äußersten ausgenutzten Hörner verdoppelt. Das mildert die helle Schärfe des Klangs; er wird voller zugleich und dunkler, so wie das Gesamtkolorit des *Parsifal*: solcher abgeblendete Orchesterklang des gedämpften Forte hat, über den späten Mahler bis zu Schönberg hin, die äußerste Tragweite für die neue Musik gewonnen.” Theodor W. Adorno. “On Parsifal’s Score.” *Collected Works Volume 17*, Musical Works 4. This is my translation.

⁴⁷⁹ “The conclusion of *Parsifal* reconciles many conflicts and suggests some sustainability of the present, as “Erlösung dem Erlöser” [Redemption to the redeemer] is repeated in different ways in a long circle of fifths that leads upward — from D major through A, E, B (C flat major), and further to G flat. In reaching

Neither of these portable coloraturas were rooted in theology, but in the contradictions of Wagner's own checkered biography. The first coloratura was a retrospective account of Wagner's post-1848 exile, his years of obscurity in Paris, and his peregrinations just prior to his 1864 rescue by Ludwig II. The second was Wagner's retroactive self-critique of the cult of Bayreuth he himself had set into motion. This self-critique is most evident in the final scene of the opera, well worth analyzing in detail:

Everyone looks in the greatest of raptures at the upraised spear, at whose point Parsifal continues to gaze with beaming countenance.

Parsifal: "Oh! Such a miracle of the highest bliss!

This, that may heal your wound

I see pouring with holy blood

yearning for that kindred spring

which wells up from the Grail. –

No longer shall it be hidden:

Reveal the Grail! – open the shrine!"

Parsifal climbs the steps of the table of consecration, accepts the 'Grail' lifted from the shrine by the boys and sinks to his knees in profound silent prayer. – Soft, gradual illumination on the "Grail". – Growing twilight in its depths as the light of illumination grows from above.

All: with voices from the middle as well as the upper tier, just barely audible:

"Supreme holy miracle!

Redemption to the Redeemer!"

Beam of light: brightest glow of the "Grail". A white dove flutters down from the dome and lingers over Parsifal's head. – Kundry slowly sinks to the ground soullessly, eyes fastened on Parsifal. Amfortas and Gurnemanz kneel and pay homage to Parsifal, who swings the Grail aloft as a blessing to the worshiping knighthood.

*The curtain slowly closes.*⁴⁸⁰

D flat major, we arrive at the subdominant of A flat major, with which the prelude to *Parsifal* began. It is as if the rising circle of fifths carries the listener into exalted regions. The orchestral conclusion of *Parsifal* encompasses an expanded plagal cadence (from subdominant to tonic), from D flat major harmony to the concluding chords of A flat major." Ulrike Kienzle. "Chapter 3, *Parsifal* and Religion: A Christian Music Drama?" In: *A Companion to Wagner's Parsifal*. Edited by William Kinderman and Katherine R. Syer. Translated by Mary A. Cicora (129).

⁴⁸⁰ *Alles blickt in höchster Entzückung auf den emporgehaltenen Speer, zu dessen Spitze aufschauend Parsifal in Begeisterung fortfährt.*

Parsifal: "Oh! Welchen Wunders höchstes Glück!

Der deine Wunde durfte schliessen,

ihm seh' ich heil'ges Blut entfliessen

in Sehnsucht nach dem verwandten Quelle,

der dort fließt in des Grales Welle. –

Nicht soll der mehr verschlossen sein:

Enthüllet den Gral! – Öffnet den Schrein!"

Parsifal besteigt die Stufen des Weihisches, entnimmt dem von den Knaben geöffneten Schreine den

Crucially, the united assembly stares transfixed at the tip of the Grail spear, anointed metaphorically with Christ's blood and literally with the blood of Amfortas' wound. Wotan's contractual spear has been refunctioned into a symbolic lance which is associated with wounds and red blood, but which is no longer a weapon of elite domination but an instrument of democratic healing. Putting the pieces of the puzzle together, the Grail spear is the pennant of the Commune, and the implied blood is the invisible red flag of an insurrection the fully and partly waged workers of the semi-periphery could only view from a distance.

Yet this is only half of the surprise Wagner has prepared for us. After Parsifal unveils the Grail, the chorale sings "Redemption to the Redeemer", the stage-lighting on the Grail increases to a maximum, and four hours of musical preparation detonate in the opera's instrumental finale. William Kinderman has provided an astute musicological analysis of this moment:

The rest of the Grail motive is omitted in the final cadence, since its pitches are duplicated when the Communion motive, heard on the subdominant, rises stepwise from B flat to E flat, the fifth of the tonic triad reached in the third-to-last bar. In its pitch level on D flat and orchestration of trombones and trumpets, this final appearance of the Communion motive exactly corresponds to its earlier appearance at the moment of entrance into the Temple of the Grail in Act I (see ex. 9). There, as we have seen, it resolves downward by semitone to C, as C major becomes primary in the tonal pairing. Here, by contrast, the Communion motive resolves upward to E flat in the final sonority of the work. The arrival of this final tonic chord of A flat major thus provides the simultaneous resolution of the Grail and Communion motives, standing in place of the dissonance that has represented a primary source of musical tension from the beginning of the work, four hours earlier. In these closing bars both motives are subsumed into the final subdominant cadence, completing and perfecting the musical form as an audible symbol for the utopia of redemption.⁴⁸¹

This return to A flat major was not quite the return to the root key it might seem to be. During

"Gral" und versenkt sich, unter stummem Gebete, kniend in seinen Anblick. – Allmähliche sanfte Erleuchtung des "Grales". – Zunehmende Dämmerung in der Tiefe bei wachsendem Lichtscheine aus der Höhe.

All: mit Stimmen aus der mittleren, sowie der oberen Höhe, kaum hörbar leise:

"Höchsten Heiles Wunder!

Erlösung dem Erlöser!"

Lichtstrahl: hellstes Erglügen des "Grales". Aus der Kuppel schwebt eine weisse Taube herab und verweilt über Parsifals Haupte. – Kundry sinkt, mit dem Blicke zu ihm auf, langsam vor Parsifal entseelt zu Boden. Amfortas und Gurnemanz huldigen kniend Parsifal, welcher den Gral segnend über die anbetende Ritterschaft schwingt.

Der Vorhang schliesst sich langsam. Richard Wagner, *Parsifal*. Act 3. This is my translation.

⁴⁸¹ William Kinderman. "Dramatic Recapitulation and Tonal Pairing in Wagner's *Tristan and Isolde* and *Parsifal*." In: *The Second Practice of Nineteenth Century Tonality*. Edited by William Kinderman and Harald Krebs. Lincoln: University of Nebraska Press, 1996 (209-210).

the instrumental finale, the theme of the *Dresden Amen* resolves in midcourse into a melodic line which traces out a simple falling octave, the musical equivalent of the dove fluttering above Parsifal's head. This melody is played four times: first in the highest of instrumental timbres (flutes), a second time in the second highest of timbres (clarinets), a third time in the third highest (bass clarinet), and a fourth and final time in the lowest timbre (horns).

This temporal repetition was the flip side of spatial innovation, as each iteration was accompanied by increasingly dense layers of counterpoint – a spectacular example of how chromaticism's democratization of all timbres necessitated ever-denser forms of compositional organization. The sequence concludes with one last quotation of the *Dresden Amen*, which breaks off in midcourse to resolve into one last surge of super-concentrated coloratura, followed by a final resolution on the interval of a fifth above the root.

This resolution is more than just a reflexive nod towards the closing chorale's endless circle of fifths. Contravening a hundred and fifty years of compositional tradition, Wagner does not return to the root chord. The effect of this interval of a fifth is electrifying: the ending does not really end, it simply puts the opera on pause.⁴⁸²

The parallels to the audio recording technology of the phonograph invented in 1876, which emancipated music from its live instrumental and vocal performance, are not just striking but should be followed to their logical conclusion. If the Grail spear refers to the possibility of a revolutionary political equality, then the luminosity of the Grail hints at the possibility of a revolutionary democratization of culture.

The material basis for both possibilities was the emancipation of opera from the grip of the dynastic, nobilitarian and mercantile elites which had dominated its production and reception for centuries. If *Parsifal*'s score marked the moment chromaticism broke free from tonality, then the unveiling of the Grail symbolized the moment the technology of moving pictures began to break free from opera's live-action spectacle. Thirteen years after *Parsifal*'s first performance, the French Lumière brothers would fulfill Wagner's mandate in the form of the film projector.

Dostoyevsky's *The Brothers Karamazov* exemplified a third strand of international progressivism, one which resonated most deeply in the six dynastic empires of capital. Where Ibsen portrayed the possibilities of Norway's anti-colonial political agency, and where Wagner expressed the discontents of Germany's national imperial citizenship, Dostoyevsky depicted the contradictions of the Russian empire's nascent Russian-language national imperial audience.

While Dostoyevsky's previous novel, *Demons*, demonstrated how the half-hearted rural reformism of Varvara Stavrogina and Stepan Verkhovensky (a.k.a. the abolition of serfdom which preserved rural oligarchies) triggered the twin catastrophes of Nikolai Stavrogin's suicidal nihilism and Pyotr Verkhovensky's homicidal populism, *The Brothers Karamazov* was the first case study of the contradictions of Russia's neocolonial industrialization.

This latter was not so much Dostoyevsky's final crime thriller, as his first industrial reform novel. On the level of form, *The Brothers Karamazov* is the missing link between late Tolstoy and early Gorky. In terms of content, where Amfortas symbolized the anguish of the

⁴⁸² Wagner underlines the point by repeating the non-ending once more, only with less force – a musical gesture halfway between the carpenter's demonstrative tap on the already-hammered nail, and the conductor's bow to the audience.

fatally wounded Central European intermediary states and where Ibsen's Helmer evoked the untenability of Sweden's third-rate empire, Dostoyevsky's Fyodor embodied the transformation of the Russian empire's post-1861 dynastic elites from semi-feudal serf-poachers to semi-industrial land-grabbers.

It is no accident that Fyodor's fatal weakness, the self-destructive trait he passed on to his offspring, was halfway between Romantic-era passion and industrial-era consumerism. This weakness was Karamazov sensuality, or what we will call industrial carnality.⁴⁸³ This industrial carnality was the transitional stage between Russia's pre-1861 industrial despotism (i.e. serfdom and dynastic-mercantile accumulation) and its post-1881 despotic industrialism. Its primary sociological basis was the combination of semi-feudal legitimacy and agrarian wealth typical of Russia's land-owning elites in the two decades following the abolition of serfdom.

The sexual liaisons of these elites scandalized the dynastic social order much like Wotan's philandering, but did not threaten its existence in the manner of Alberich's industrial-era Ring. Conversely, the semi-feudal nature of Russian society during Dostoyevsky's time precluded the possibility of following in the footsteps of Ibsen and Strindberg, who depicted failed marriages as allegories of Norway's neocolonial status and Sweden's semi-peripherality, respectively.

Industrial carnality was thus the semi-peripheral negation of that staple cultural trope of the core polities, namely the Naturalist hereditary doom. In fact, each of the Karamazov offspring embodied one of the four possible variations of this carnality: Dmitri represented semi-feudal legitimacy with agrarian wealth, Ivan represented agrarian wealth without semi-feudal legitimacy, Alyosha represented semi-feudal legitimacy without agrarian wealth, while Smerdykov represented semi-feudal illegitimacy without agrarian wealth.

This industrial carnality also helps to explain the central importance of Ivan's tale of the Grand Inquisitor. This latter was neither a morbid throwback to Russia's medieval past, nor an anticipation of the charismatic bureaucracies of the future Soviet empire. It was a parable of the semi-peripheral lockdown which condemned Russia's dynastic empire of capital to neocolonial status vis-a-vis the core polities. The figure of the Inquisitor was halfway between the merchant of dead souls and the industrialist of wage labor, precisely where the figure of the Redeemer was

⁴⁸³ This is expressed in Rakitin's comment to Alyosha: "Even if your brother Mitya [Dmitri] is an honest man—which he is, stupid and honest—he is also sensuous and passionate. That's the definition of his character, his very essence. He inherited his animal sensuality from his father. As a matter of fact, what puzzles me no end is how you, Alyosha, have managed to remain virgin to this day—you, a Karamazov! Why, sensuality runs through your family like a feverish obsession..." Fyodor Dostoyevsky. *The Brothers Karamazov*. Part 1, Book 2, Chapter 7. Also note Dmitri's later conversation with Alyosha: "Now I'd like to tell you something about insects—the ones endowed with sensuality by God's eternal joy: 'Gives the insects sensual lust...' 'I'm just such an insect, Alyosha, and that verse applies specifically to me. All we Karamazovs are such insects and one lives in you too, my angel brother, and it will stir up storms in your blood too. Storms, because sensuality is a storm, even more than a storm. Beauty is a terrifying thing! It's so frightening because it's indefinable and it's indefinable because God has surrounded us with nothing but riddles. Here the shores of a river meet, incompatibilities coexist." Fyodor Dostoyevsky. *The Brothers Karamazov*. Part 1, Book 3, Chapter 3. Translated by Andrew R. MacAndrew. New York: Random House, 2003.

halfway between the dynastic Czar-liberator and the abolitionist Prime Minister.

One of Dostoyevsky's most remarkable achievements was to pair the four male characters who symbolized industrial carnality with four female characters who symbolized neocolonial financialization. These latter were Lise Khokhlakov, her mother Mrs. Khokhalov, Grushenka (Agrafena Alexandrovna Svetlov), and Katya (Katerina Ivanovna Verkhovtsev). Where industrial carnality signified the presence or absence of semi-feudal legitimacy and agrarian wealth, this neocolonial financialization signified the presence or absence of long-term national imperial accumulation and short-term financial credit in the semi-periphery.

Lise became Alyosha's future betrothed via a symbolic exchange of letters at the beginning of the novel, but broke off the engagement and became infatuated with Ivan via another exchange of letters at the end of the novel. This exchange of letters and emotional lability is an allegory of one of the most important forms of financial credit in the 19th century, namely the bill of exchange. Conversely, Lise's physical debility, her status as a minor, and her status as a female in a deeply patriarchal society symbolized the absence of national imperial accumulation.

Mrs. Khokhalov represented the inversion of these terms, i.e. the presence of national imperial accumulation and the absence of financial credit. Consider this key scene wherein Dmitri asks her for a loan, and she invokes the statutory authority of Russia's official state debt:

"But, madam, the three thousand, which you so generously offered to lend me . . ."

"It won't escape you, Mr. Karamazov," Mrs. Khokhlakov cut him off at once. "You can consider the three thousand as in your pocket, and not just three thousand, but three million, Mr. Karamazov, in no time at all! Now let me tell you your idea: you will find the mines and make millions, and then return and become a businessman. And you will run our lives, too, directing us to good deeds. Does it all have to be left to the Jews? You will construct buildings and various enterprises. You will help the poor, and they will bless you for it. This is the age of railroads, Mr. Karamazov. You will become famous and indispensable to the Ministry of Finances, which is now in such need. The fall in value of the paper ruble keeps me awake at night, Mr. Karamazov – this side of me is little known . . ." ⁴⁸⁴

Mrs. Khokhalov's incapacity to provide short-term financing to Dmitri mirrors the economic dysfunction of Russia's dynastic state, which borrowed heavily from British and French capital markets to subsidize military-industrial boondoggles and engage in colonial adventurism while starving its domestic industries of funds.

The female characters Katya and Grushenka, the two rivals for Dmitri's affection, are among Dostoyevsky's greatest creations, due to their capacity to represent the double absence and double presence of national imperial accumulation and financial credit, respectively. Katya symbolized the doomed grandeur of an economically impoverished state nobility unable to undertake national imperial accumulation or provide financial credit, whereas Grushenka, a plebian woman grown rich on property speculation, symbolized the dynamism of national imperial accumulation combined with financial credit.

⁴⁸⁴ Fyodor Dostoyevsky, *The Brothers Karamazov*. Book 8. Chapter 3.

Grushenka's embodiment of this double presence helps to explain why she is as important to the novel as the figure of Ivan's Grand Inquisitor. After being wooed and spurned by a Polish officer, Grushenka became the sponsor of Samsonov, a wealthy rural merchant, and attracted the amorous attention of Fyodor Karamazov and later of Dmitri Karamazov. Dostoyevsky gives us an important clue in the following passage:

It was also common knowledge that for a year or two the young lady [Grushenka] had been engaged in all sorts of 'financial operations,' that she had displayed great talents in that field, so that in the end many said she was as sharp as any Jew. Although she didn't actually go in for usury, she was known, for instance, to go in for buying IOU's at nominal prices, along with Mr. Fyodor Karamazov, paying something around ten kopeks for a ruble's worth of debts, and eventually getting back ten times the value of her original investment.⁴⁸⁵

Grushenka was that strange new thing, the temptress-accumulator – the cipher of a neocolonial bourgeoisie which extracted rents from the unequal exchange of agricultural and handicraft goods produced by a sea of subsistence farmers and partly waged laborers for the industrial commodities produced by small enclaves of fully waged laborers, but which remained dependent on British technology and French finance for its industrial investments.⁴⁸⁶

Nowhere is this neocolonial dependency more tangible than in the two threatening figures which constantly shadow Grushenka: the anti-Semitic specter of the Jewish speculator explicitly mentioned in the passage above, and the anti-Polish stereotype of Pan Mussyalovich, her erstwhile Polish suitor. It is no accident that this latter is systematically stripped of his wealth, his status, and finally his basic dignity, in a grim foreshadowing of the Great Russian chauvinism and repressive Russification unleashed during the reign of Alexander III (1881-1894). More generally, Ibsen's spluttering misogyny and Wagner's execrable anti-Semitism had their counterpart in Dostoyevsky's repulsive anti-Semitism, Turkophobia and Polephobia.

What was genuinely progressive about Dostoyevsky's novel, on the other hand, was its construction of Russia's national imperial audience. This construction began in Book 2, in the form of Father Zosima's psychologically astute responses to the pleas of his plebian parishioners and his sociologically informed responses to the skeptical queries of his upper-class visitors. These interactions were halfway between the confessional absolution or hieratic blessing, and the self-care ethos of the scientific periodical or newspaper advice column. They were a didactic template of how the audience reception of a national imperial audience is supposed to function. This template was the crucial precondition for Alyosha's transformation into a national imperial citizen in Book 7:

⁴⁸⁵ Fyodor Dostoyevsky. *The Brothers Karamazov*. Book 7. Chapter 3.

⁴⁸⁶ The female subject of Russian painter Ivan Kramskoi's *Portrait of an Unknown Woman* (1883) came the closest to capturing Grushenka's combination of quasi-subaltern subjectivity and proto-capitalist wealth.

He did not know why he was hugging the earth, why he could not kiss it enough, why he longed to kiss it all . . . He kissed it again and again, drenching it with his tears, vowing to love it always, always. “Water the earth with the tears of your joy and love those tears,” a voice rang out in his soul. What was he weeping about? Oh, he was weeping with ecstasy, weeping, even, over those stars that shone down upon him from infinite distances, and he was “unashamed of his ecstasy.” It was as if the threads of all those innumerable worlds of God had met in his soul and his soul was vibrating from its contact with “different worlds.” He craved to forgive everyone and everything and to beg for forgiveness—oh, not forgiveness just for himself, but for everyone and everything. “Others will ask forgiveness of me too,” the voice rang out in his soul again. Every moment he felt clearly, almost physically, something real and indestructible, like the vault of the sky over his head, entering his soul. Something, a kind of idea, had taken over his soul forever and ever. He was a weak youth when he fell on the ground and he rose a strong and determined fighter.⁴⁸⁷

This was the high water mark of the novel, the moment Dostoyevsky came closest to empathizing with the Socialist Revolutionary rural reform campaigns of the early 1880s. Yet this glimpse of an international progressivism also came with its own dialectical recoil, namely the emergence of Russia’s own version of industrial revanchism.

This recoil was most evident in the final four books of *The Brothers Karamazov*, which lacked the thematic density and polyphonic character development displayed by books one through eight. The reason for this aesthetic deficiency was not just due to Dostoyevsky’s ill health (he passed away in February 1881, just four months after completing *The Brothers Karamazov*). Rather, it registered the fundamental obsolescence of industrial carnality in a society undergoing rapid neocolonial industrialization.

The most glaring symptom of this obsolescence was the retconning of Smerdyakov in chapter 11 from a household servant incapable of anything more than passionate resentment into a criminal mastermind capable of framing Dmitri for Fyodor’s murder – the replacement of a convincing fourth Karamazov by an unconvincing provincial Moriarty. Other examples include the replacement of the guilt-racked Grand Inquisitor by a foppish Devil whose boredom never rises to the level of Baudelaire’s spleen, the downgrading of Grushenka’s passionate effectuality into a dismal replica of Katya’s wholly ineffectual passion, and Alyosha’s diminution from the allegorical embodiment of a nascent Russo-national imperial audience into a mere spectator during the events of Dmitri’s trial.

In point of fact, the progressive literary mandate of *The Brothers Karamazov* would be realized by an author located in Pedro II’s Brazil, a polity whose dynastic political autonomy, neocolonial economic dependency, and system of wageless labor rendered its variant of semi-peripheral lockdown structurally comparable to Russia’s dynastic empire of capital. The author in question was Machado de Assis, who wrote five of the greatest Portuguese-language novels ever written between 1881 and 1908.

These works, famously dubbed by Jorge Sena as the “Carioca quintet,”⁴⁸⁸ documented the

⁴⁸⁷ Fyodor Dostoyevsky, *The Brothers Karamazov*. Book 7. Chapter 4.

⁴⁸⁸ The term “carioca” refers to the inhabitants and culture of Rio de Janeiro. During Machado’s time, this city was both the capital of Brazil as well as the center of the Brazilian economy. See: Jorge de Sena and

transformation from the industrial despotism of Brazil's post-1823 constitutional monarchy to the despotic industrialism of its post-1889 oligarchic republic. The first and most famous of this quintet, *The Posthumous Memoirs of Brás Cubas* (1881), was a scorching satire of the uniquely awful elites who reduced Brazil from the middle ranks of the semi-periphery in the 1820s to the status of an advanced periphery by the turn of the 20th century. Under their misrule, Brazil's per capita GDP plummeted from 38% of the corresponding British figure in 1820 down to 22% by 1870, and to only 15% by 1900, the single worst economic performance of any independent Central and South American polity.⁴⁸⁹

Machado's most significant literary innovation was the negation of the trope of hereditary doom characteristic of the Naturalisms of the core by means of the trope of semi-peripheral dispossession.⁴⁹⁰ Where Zola's types expressed the individual successes or failures of the speculation-obsessed speculators, magnanimous magnates, and penny-counting shopkeepers characteristic of the core polities, Machado's characters expressed the collective failure of speculators incapable of speculation, the magnates insensible of munificence, and the shopkeepers incapable of numeracy. Roberto Schwarz has eloquently summarized the contours of this dispossession as follows:

The novelty of his [Machado's] work lies in the narrator, humorous and aggressively arbitrary, functioning like a formal principle, subjecting characters, literary convention, and even the reader, not to mention the authority of the narrative form, to periodic feints. The narrator's intrusions range from light impertinence to unbridled aggression. Very deliberate, his infractions neither ignore nor cancel the norms they affront; but, at the same time, these are derided and rendered inactive, relegated to a status of half-valence that aptly encapsulates the ambivalent position of modern culture in peripheral countries. Necessary to that rule of composition, transgressions of every kind repeat themselves with the regularity of a universal law. The devastating sense of a Nothingness that forms in the wake of this composition deserves a capital letter, insofar as it is the final sum of an experience, in anticipation of other rules remaining to be trampled. As for the artistic climate of the epoch, this ending in a Nothingness is a replica, under a different sky, of what was being done by the French postromantics, described by Sartre as 'knights of nonbeing.'⁴⁹¹

Isabel de Sena (1986). "Machado de Assis and His 'Carioca Quintet'." *Latin American Literary Review* 14:27 (9-18).

⁴⁸⁹ Angus Maddison 2008.

⁴⁹⁰ Machado's achievement paved the way for the other leading Brazilian writer of the late 19th century, namely João da Cruz e Sousa, whose most realized works included the prose lyric collections *Shields* [Broqueis] (1893) and *Missal* (1893).

⁴⁹¹ It should be noted that Schwarz uses the term "periphery" to describe the status of 19th century Brazil vis-a-vis Britain, France and the US, whereas our own position is that Brazil was a semi-periphery vis-a-vis the five core polities of Global Steam. Roberto Schwarz. "The Posthumous Memoirs of Brás Cubas." In: *The Novel. Volume 1: History, Geography, and Culture*. Edited by Franco Moretti. Princeton: Princeton University Press, 2006 (817).

Where the industrial modernisms of the core depicted the contradictions of a society organized on the basis of fully waged labor, Machado's novel portrayed the limitless entropy of a society dominated by wageless and partly waged labor. Cubas, the protagonist of the novel, was not so much the semi-peripheral version of the failed entrepreneurs showcased by Zola, but rather that strange new thing, the zombie plantocrat – the symbol of elites who leveraged their control over centuries of accumulated wageless and partly waged labor to dominate Brazilian society, but whose rule was already extinct on a geopolitical level.

Put bluntly, Machado invented the first classic zombie thriller of world literature, sixteen years in advance of Bram Stoker's vampire thriller. One of the key moments of Machado's text highlights the precise moment this zombie is jolted into shambling unlife:

Just imagine, reader, a reduction of the centuries and a parade of all of them, all races, all passions, the tumult of empires, the war of appetites and hates, the reciprocal destruction of creatures and things. Such was that spectacle, a harsh and curious spectacle. The history of man and the earth had an intensity in that way that neither science nor imagination could give it, because science is slower and imagination is vaguer, while what I was seeing there was the living condensation of all ages. In order to describe it one would have to make a lightning bolt stand still.⁴⁹²

The zombie plantocrat is also the secret of the novel's subtitle, "Epitaph of a Small Winner." Just as Cubas' short-term verbal pyrotechnics – what Schwarz termed the cultural and political strategy of volubility – concealed the long-term economic decline of the Brazilian plantocracy, the superficial imperial triumphs of independent Brazil – its inheritance of a territory of 8.5 million square kilometers from its Portuguese forebear, its internal coherence as a polity where so many other Central and South American polities disintegrated, and its decisive victory in the 1864-1870 War of the Triple Alliance – concealed the reality that Brazil was the third-biggest loser of Global Steam's imperial competition (the first and second being the Qing and Ottoman empires, respectively).

We will argue Machado's literary exploration of the semi-peripheral bequest in his quintet had its musical analogue in the semi-peripheral chromaticism of Brahms, Bruckner and Tchaikovsky. These three were the Aronnax, Nemo and Ned Land of the semi-peripheral musical industrial modernisms of 1878-1904 – that is to say, the photographer, the navigator, and the cartographer of post-Wagnerian chromaticism, who extended the principles of the latter to the genres of the chamber orchestra, the symphony and the ballet score, respectively. Consider Adorno's suggestive reading of Brahms as the master of the smallest motivic augmentation:

What is most authentic [in Brahms] is not so easily discerned, while its hidden nature makes it all the more efficacious. It can be deduced most readily by taking the measure of Brahms' source material. After Schumann's sacrifice, the objective spirit [Geist] of the sonata recollects itself [besinnt sich] in

⁴⁹² Machado de Assis. *The Posthumous Memoirs of Bras Cubas*. Translated by Gregory Rabassa. Oxford: Oxford University Press, 1997. Chapter 7.

Brahms, as it were. Its entire greatness hinges on how strictly this recollection binds itself to the place and time of its consummation. The immediate recourse to Beethoven in the name of Schumannian subjectivity and its altered musical material is not possible; New German and Chopinesque chromaticism, having not yet found their great success in the mature Wagner via theater, appear in the meantime to be the mere heightening of the Schumannian situation in the realm of the sonata form. The trailblazing path beyond is not that of Brahms, but also not, or only occasionally, that of the path back: rather it is immersion. His music keenly peers into the self-actuality [Selbstgegebenheit] of its material, namely Schumann's high Romanticism, until this latter turns into an objectification based on its own claims: objectification of the subjective. What is accomplished in Wagner through the dynamic storm, Brahms achieves through stubborn insistence. His results however endure longer, enduring precisely for subsequent compositional praxis, for the less they cling to the external surface of the auditory phenomenon [Klangphänomens], the less they are exposed to attrition as mere "appeal".

Their exact analysis would be of great art-theoretical significance: certainly not less than that of Bruckner. In the vocabulary of keywords, the harmonic discoveries of Schumann were dissolved from their expressive isolation [Vereinzelnung] and newly determined by their harmonic structure: they form autonomous neighboring scales [Nebentufen], which make the meaningful chord-based distribution of equilibrium [Gleichgewichtsverteilung] possible over long passages, while nonetheless upholding the subjectively developed [erschlossenen: opened up, developed, conjectural] wealth of the 'classical' schema of subdominant, dominant and tonic. Beethoven's lapidary symphonic style, with its sequencing of identically worked-through [durchgehaltener] motives (the first movement of the *Fifth*), is as little compatible with such harmonic consciousness as the Wagnerian chromatic sequence: instead, Beethoven's specific technics of implementation [Durchführungstechnik] is pushed further and raised to an art of variation, which ceaselessly develops something new from what is time-tested in the exposition and working-out sections, without permitting any 'free' or constructively accidental notes. This corresponds to an art of economic partition of themes into the smallest motives, which develops as a consequence of the sonata [form] similar to Wagner's compulsion of the dramatically pregnant characterization, without however sacrificing the form-shaping [gestaltliche] theme as a carrier of substance between the motive and the larger form. In today's enlightened material consciousness, and in decisive contrast to Bruckner, Brahms holds sway over a magnificent, uncomfortable yet truly timely compositional unnaivete [Unnaiveteät], whose curious musical cognitive character first reveals its healing power once the painful romantic drive for affect has died out. What remains left over as its unachieved idea to this day is the reconversion [Umschmelzung] and reconstruction of the sonata itself: this is formulated most precisely in the incomparable first movement of Brahms's *Fourth Symphony*.⁴⁹³

⁴⁹³ "Das Eigentliche ist nicht ebenso kenntlich, in Verborgenheit jedoch um so wirksamer. Es erschließt sich am ehesten der Besinnung auf Brahmsens Ausgangsmaterial. Nach dem Schumannschen Opfer besinnt in Brahms der objektive Sonatengeist sich gleichsam auf sich selber. Seine ganze Größe ist darin gelegen, wie streng solche Besinnung sich an den Ort und die Stunde bindet, da sie sich vollzieht. Der unmittelbare Rückgriff auf Beethoven ist, im Namen der Schumannschen Subjektivität und ihres verwandelten Musikstoffes, nicht möglich; die neudeutsche und Chopinsche Chromatik, die noch nicht vom Theater her ihr großes Gelingen im reifen Wagner gefunden hat, scheint einstweilen, im Bereich der Sonatenform, bloße Steigerung der Schumannsituation. Der sprengende Weg hindurch ist nicht der Brahmsische, aber auch nicht, oder nur gelegentlich, der zurück: vielmehr die Versenkung. Tiefsinnig schaut seine Musik ihr Material, eben das der Schumannschen Hochromantik, in seiner Selbstgegebenheit solange an, bis aus dessen eigenen Forderungen die Objektivation gerät: Objektivation des Subjektiven. Was bei Wagner der dynamische Sturm vollbringt, leistet bei Brahms die hartnäckige Insistenz. Seine

This first movement temporarily resuscitated the sonata, a musical form largely obsolete by the 1840s, by means of a spectacular chromaticism. But what Adorno's analysis did not acknowledge – and this is closely connected to his incapacity to recognize the musical innovations of Bruckner and Tchaikovsky – was the price the work had to pay for this achievement. This was the near-collapse of the underlying logic of thematic variation on which the traditional sonata was based. This collapse was most tangible in the startling loss of musical tension in the three subsequent movements of the symphony, all of which pale next to the first.

Put bluntly, the first movement succeeded because it did not really reconstitute the sonata's tripartite progression of exposition, development and recapitulation – Hegel's thesis, antithesis and synthesis – so much as create a simulacra of these things out of spatialized coloratura. To paraphrase Strindberg, Brahms created world history's first ghost sonata.⁴⁹⁴

Resultate aber haben um so mehr Dauer, Dauer gerade für die nachfolgende kompositorische Praxis, je weniger sie an der Außenfläche des Klangphänomens haften, je weniger sie darum der Abnutzung als ›Reiz‹ ausgesetzt sind.

Ihre genaue Analyse wäre ein großer kunsttheoretischer Gegenstand: gewiß kein geringerer als die Bruckners. Mögen nur Stichworte gegeben sein: die harmonischen Funde Schumanns werden aus ihrer expressiven Vereinzelung gelöst und nach ihnen die harmonische Struktur neu bestimmt: sie bilden selbständige Nebestufen, die sinnvolle akkordische Gleichgewichtsverteilung auch über lange Strecken ermöglichen und, gegenüber dem ›klassischen‹ Schema von Subdominante, Dominante und Tonika, gleichwohl den subjektiv erschlossenen Reichtum halten. Beethovens symphonischer Lapidarstil mit der Sequenzierung identisch durchgehaltener Motive (erster Satz der Fünften) ist mit solchem harmonischen Bewußtsein so wenig vereinbar wie die Wagnerische chromatische Sequenz: statt dessen wird Beethovens spezifische Durchführungstechnik weitergebildet und zu einer Kunst der Variation gesteigert, die in den Expositions- und Durchführungsteilen aus dem Bewahrten, Bekannten unablässig Neues entwickelt, ohne eine ›freie‹, konstruktiv zufällige Note sich zu gestatten. Dem entspricht eine Kunst der ökonomischen Themenaufteilung in kleinste Motive, die als Konsequenz aus der Sonate ähnliches entwickelt wie Wagner aus dem Zwang der dramatisch prägnanten Charakterisierung, ohne doch, zwischen Motiv und Großform, das gestalthafte Thema als Träger der Substanz zu opfern. Es ist eine großartige, unbequeme, doch im heutigen erhellten Materialbewußtsein wahrhaft erst fällige Unnaivetät des Komponierens, die Brahms, im entscheidenden Gegensatz zu Bruckner, beherrscht und deren seltsamer musikalischer Erkenntnischarakter seine heilende Kraft erst beweist, wenn der schmerzhaft romantische Drang der Affekte abgestorben ist. Die Umschmelzung und Rekonstruktion der Sonate selber bleibt als dessen bis heute noch unbewältigte Idee zurück: in dem unvergleichlichen ersten Satz von Brahmsens Vierter Symphonie ist sie aufs genaueste formuliert." Theodor W. Adorno. "Brahms Aktuell" [Brahms's Contemporaneity], 1934. In: *Collected Works, Volume 18: Musical Writings* 5. This is my translation.

⁴⁹⁴ The ghost sonata had a lengthy prehistory in Brahms' symphonic output. To borrow a metaphor from the visual arts, whereas Brahms' *Symphony 1* and *2*, composed in 1876 and 1877, functioned like painted landscapes of moving trains, *Symphony 3* and *4*, composed in 1883 and 1884, functioned like the photographs taken by passengers aboard a moving train. Conversely, the first movement of *Symphony 4* managed to take enough snapshots in rapid succession to simulate the effect of the earliest cinematic moving images. An anonymous reviewer of the US premiere of Brahms' *Symphony No. 1*, published in the *New York World* on December 23, 1877, was surprisingly cognizant of this contradiction: "While

The propulsive opening sequence of this ghost sonata employed a series of descending thirds (B, G, E, C, A, F sharp, D sharp, and B), orchestrated with a compelling rhythm. The origin of this latter was Hungarian Romani music (also called the gypsy idiom). John Davario has noted that the rhythms and melodies of Romani music – the Romani were among the most prominent minorities of the Austrian empire – were a source of external coloration in Brahms' early works, but became an integral feature of his mature compositional style.⁴⁹⁵

The first movement of *Symphony 4* employed a series of chromatic modulations accented with Romani rhythms, which interlinked the highest and lowest acoustic registers of the orchestra in the same way construction crews blasted through underground tunnels and the highest mountain passes to connect the intercontinental railroads. One of the most prescient of these modulations occurred in measures 200-2007, the closest Brahms ever came to Debussy's future musical Impressionism.

Ann Scott has usefully summarized some of the compositional features of these accented chromatic modulations:

Contrapuntal strategies such as inversion, augmentation, diminution, and the like frequently make old themes sound new. For instance, the third movement of the F-Minor Clarinet Sonata, op. 120, no. 1, begins with a dance-like section in rounded binary form. At the beginning of its B section (m. 117), the clarinet, in counterpoint with the piano, presents a seemingly new tune which turns out to be an inversion of the opening clarinet melody.

An even more subtle kind of manipulation occurs in the first movement of the second *Clarinet Sonata in E Major*, op. 120, no. 2. Here, the opening clarinet melody returns in toto, but with pitch displacement and redistribution of the notes between the two instruments—a technique not unfamiliar to

listening to [this] symphony, you get glimpses, but they are mere railroad glimpses, of the great masters, from time to time. Should Brahms be blamed for thus occasionally showing what beautiful landscapes surround his own domain? Not when that to which he has a clear title is so extraordinarily beautiful in itself. The work on this symphony is simply wonderful, and by it Brahms shows himself to be an artist of the highest rank in the use of materials at his command." Anonymous. "Chapter 15: 'A Modern of the Moderns': Brahms's First Symphony in New York and Boston." In: Walter Frisch and Kevin C. Karnes, editors. *Brahms and His World*. Princeton: Princeton University Press, 2009.

⁴⁹⁵ "In the earlier part of Brahms's career, the gypsy idiom was regularly associated with *Hausmusik* [German: home music], that is, music intended primarily for domestic entertainment (the Hungarian Dances offer a classic example) and with its generic cousins: chamber music and "concert music" for solo piano. In the *Violin Concerto*, one of the few works from his middle years in which the *style hongrois* [French: Hungarian style] plays more than a casual role, Brahms first explored the potential of the gypsy manner for a large-scale, "serious" genre that involved the orchestra. Finally, in his later period, he extended the generic range of the style to include vocal chamber music as well (*Zigeunerlieder* [German: Gypsy songs]). And whereas in the earlier multimovement works listed in Table 7-1 Brahms generally reserved the *style hongrois* for use in finales, the traditional spot for lighter fare in cyclic compositions, in the later works it infiltrates larger spans of the total form. Indeed, in the "*Double*" *Concerto*, the piece that initiates the burst of gypsy-style compositions toward the end of Brahms's career, it is all-pervasive." John Davario. *Crossing Paths: Schubert, Schumann, and Brahms*. Oxford: Oxford University Press, 2002 (212).

more recent serial composers (see Example 2).

Linear conjoining of previously autonomous thematic segments in the coda: [italics in original] Sometimes, Brahms reconciles disparate themes by juxtaposing them in side-by-side fashion in the coda. In the final measures of the *Violin Sonata No. 2 in A Major, Opus 100*, material originally presented in a contrasting episode (C) is joined to the main theme of the rondo, now rhythmically transformed and in diminution.⁴⁹⁶

Where Brahms created the ghost sonata, Bruckner created the ghost symphony and Tchaikovsky the ghost ballet. One of Bruckner's greatest contributions was to leverage the principle of spatialized coloratura by means of orchestrated sonority. This latter consisted of densely contrapuntal masses of coloratura which floated in space like so many acoustic Americas, the speculative compensation for the inability of the Austrian empire to win European wars or to acquire maritime colonies. This sonority reconciled the archaic forms of the sonata and fugue together with the most advanced techniques of rhythmic pizzicato and massed horns. Julian Horton has provided the clearest musicological explanation for this augmentation in terms of Bruckner's strategy of stratification:

The opposition of strict and free reasserts itself within Bruckner's works, almost as if the music should reveal the artifice that grants permission for the overlaid harmonic, thematic, and textural innovations. The concept of stratification is a clear example of this. Bruckner employs an archaic contrapuntal device as a textural principle, which in turn forms the basis of a highly original notion of orchestration and its formal function.⁴⁹⁷

The first great example of this stratification or orchestrated sonority was the fourth movement of Bruckner's *Symphony 5*. Where the Austro-Hungarian Compromise of 1867 temporarily restabilized an Austrian empire threatened by internal national separatism and external geopolitical competition by means of a democratizing federalism with dynastic characteristics, this fourth movement temporarily reconciled Bach's fugal counterpoint and post-Wagnerian chromaticism by means of a democratized rhythmicity with semi-dynastic characteristics.

This rhythmicity stood halfway between the Hungarian Romani rhythms of Brahms and the Russian folk rhythmicity of Tchaikovsky, or put less charitably, between Brahms' evocation of one of the subaltern identities of the Austrian empire and Tchaikovsky's conjuration of a Russo-national imperial subalternity. Bruckner expanded this rhythmicity significantly in his two most realized works, *Symphony 7* and *8*. Korstvedt has provided a useful summary of the anchoring role of this rhythmicity in *Symphony 8*:

⁴⁹⁶ Ann Scott (1995). "Thematic transmutation in the music of Brahms: A matter of musical alchemy." *Journal of Musicological Research* 15:2 (181-182).

⁴⁹⁷ Julian Horton. "Chapter 11. Bruckner and the symphony orchestra." In: *Cambridge Companion to Bruckner*. Edited by John Williamson. Cambridge: Cambridge University Press, 2004 (169).

As several scholars have shown in detail, the entire [Eighth] symphony is inhabited by densely interlocking networks of motivic similarities, from the intervallic parallels (chromatic ornaments and upward minor sixth) between the head-motives of the first movement and Adagio to the manifold uses of the rhythm of the initial motive of the symphony. Modern notions of symphonic aesthetics are inclined to underrate the importance of these patterns of motivic integration, connection, and mutation, since now the essence of symphonic form is located primarily in formal and tonal architecture, not motivic connections. Yet in the latter half of the nineteenth century different standards of judgment prevailed, as we can see in Wagner's definition of "symphonic unity" as a "web of basic themes . . . which contrast, complete, re-shape, divorce, and intertwine with one another." In Bruckner's symphonies this web is spun largely out of rhythm; recurring rhythmic cells and a solidly quadratic periodic structure endow the music with great tensile strength. This rhythmic and hyper rhythmic solidity, along with large-scale spans of tonal coherence, is the basis of Bruckner's symphonic structure; by undergirding surface features, notably locally modulatory harmony and vivid episodic contrasts, that might otherwise be prone to fragmentation, it allows the creation of symphonic forms that incorporate great contrasts, diverse moods, and fine detail into an epic structure.⁴⁹⁸

This epic structure was rooted in a profound historical ambivalence. While its use of counterpoint and harmonic structure hearkened back to the imperial national identities of the Hapsburg past, its orchestrated sonority expressed the aspirations of the empire's national imperial future. But where the conclusion of Wagner's *Ring* mythos was half nobilitarian tragedy and half Hollywood happy ending, the Brucknerian epic was half thematic consecration and half industrial demolition.

The roots of this epic structure can be traced back to the fourth movement of *Symphony 5*, which laid the fugue to its well-deserved rest in the full pomp and splendor of k.u.k. regalia,⁴⁹⁹ and to the first movement of *Symphony 6*, Bruckner's private eulogy for the Austrian institution of the village organist or Kapellmeister (the word literally means "chapel-master").⁵⁰⁰ However, its fullest realization required the expansive musical chromaticism of *Symphonies 7* and *8*, which raised consecratory demolition to a guiding compositional principle.

Whereas the first movement of Brahms' *Symphony 4* was already its finale, the first movement of Bruckner's *Symphony 7* was the rolling stock which delivered Wagner's musical sarcophagus – a.k.a. the resplendent second movement, replete with Wagner's signature tubas – via the commemorative rail line of the third movement to its final destination, the imperial sepulcher of the fourth movement.

Symphony 8 expanded on this achievement by transforming this imperial sepulcher into

⁴⁹⁸ B.M. Korstvedt. "The musical design and symphonic agenda of the Eighth." *Anton Bruckner: Symphony No. 8* (33).

⁴⁹⁹ "K.u.k." was an Austro-Hungarian acronym which meant "kaiserliche und königliche" [imperial and royal], a reference to the Dual Monarchy of Austria's Hapsburg emperor and Hungary's king.

⁵⁰⁰ Bruckner was the son of a village organist and served for ten years as the organist of Saint Florian, Austria.

an industrial mausoleum, a.k.a. the ghostly concert hall necessary to stage a ghost symphony. The first movement was the stately consecration of this mausoleum, its massed horns evoking the glorious Hapsburg past only to fade away like the footsteps of tourists on the marble floors of tombs.

The second movement was one of Bruckner's most impressive achievements, an acoustic diorama showcasing the Austrian empire's extraordinary linguistic, social, economic and political complexity as a kind of musical mausoleum.⁵⁰¹ The guided tour through this mausoleum was symbolized by the propulsive six-note sequence first played by the violins during measure 2 of the second movement (B-upper D-upper E-upper F-lower F-B). The national imperial audience of this guided tour appeared in measure 19, ushering in the replication of the six-note sequence across a range of instruments and timbres. Meanwhile, the guided tour and the national imperial audience were sublated in the industrial panorama which begins in measure 41.

The third movement was the consecratory demolition of the pastoral idyll and its replacement by the tourist venue of the national park. This ghost-idyll culminated in the ghost wedding celebrated by the two cymbals near the end of the movement, the inversion of the legendary single cymbal of *Symphony 7*'s second movement which signified Wagner's passing. The fourth movement began with a soaring paraphrase of Wagner's *Siegfried* leitmotif (A-upper D-upper C-B-upper C-A-upper D), located one step below the six-note sequence of the second movement. This paraphrase was essentially a ghost march across the Hapsburg parade grounds, which resolved on an upper C. Given that the entire symphony was in C minor, this was a fathomless piece of musical irony which anticipated the structural irony of Mahler's post-1904 symphonies.⁵⁰²

Perhaps the most striking achievement of *Symphony 8* was the equilibrium it established between orchestrated sonority and its antipode, namely spatialized silence. Whereas the first movement concluded with the august silence of dynastic continuity, the second concluded with the mechanical hum of the industrial panorama. Conversely, where the third movement ended with the internalized silence of the tourist, the fourth movement ended with the fugal requiem longtime Austrian emperor Franz Josef I, to whom *Symphony 8* was dedicated, did not entirely deserve.⁵⁰³

What made this requiem progressive was that it paid its respects to the dynast-king from the vantage-point of a full-blown national imperial audience. This latter was unveiled by the extraordinary finale of the movement which ran from measures 685 to 747, a sequence as musically momentous as the finale of Wagner's *Parsifal*.⁵⁰⁴

⁵⁰¹ Sergiu Celibidache was one of the very few conductors of Bruckner capable of balancing the radiant coloratura of this second movement with the extraordinary solemnity befitting this mausoleum.

⁵⁰² Leading videogame composer Inon Zur pastiched this opening in one of the most thrilling ambient tracks of *Fallout 4*, titled "Dominant Species" (https://www.youtube.com/watch?v=-1HZGZNP_bU), which plays during epic battles. This track ingeniously fused Bruckner's sublime horns (1:10:20-1:11:10 in <https://www.youtube.com/watch?v=eIVHvTrEM34>) with the crescendo of *Fallout 4*'s title track (1:20 to 2:16 in <https://www.youtube.com/watch?v=kdOKjUfMPe0>).

⁵⁰³ Franz Josef I reigned for sixty-eight years, from 1848 until his passing in 1916 at the age of 86.

⁵⁰⁴ This is based on the Robert Haas version of the score, available here: <https://s9.imslp.org/files/imglnks/usimg/5/54/IMSLP465769-PMLP16220-bruckner8.pdf>.

The passage began with an ascending melody on the violins (middle C-D-E-G-upper C-upper D-upper E) which was technically a major C triad, but which was accompanied by massed horns playing in a minor key. This melody was repeated again and again, each time slightly higher in the scale and with occasional melodic variations, while the horns increased in strength and power.

After a brief crescendo, the horns subsided and the woodwinds played the melody D-E-F in measures 708 and 709, and then repeated E-F four times over, as if it had forgotten what comes next. The trombones then picked up the slack and completed the musical thought by moving from F to G. However, the trombone simultaneously played the A just above this G. This created a sense of musical heightened by the repetition of this F-G/A miniature phrase six times over, before the full might of the orchestra was unleashed to celebrate the triumph of A in measure 716.

This was followed by a conclusive transition to major C, paralleling the long-awaited tonal transition at the end of *Parsifal*, but with one crucial difference. Where Wagner cited the Dresden amen one final time and then ended on a musical pause, Bruckner transformed this pause into space. This was the final burst of counterpoint, which suffused this major cadence with a burst of industrial energy injected by the closing phrase of G-E-D-C.⁵⁰⁵ The opening phrase of the second movement, reminiscent of the plaintive appeal of a vassal to a dynast, gave way to its sublation: the declaration of the sovereignty of the national imperial audience. Nobilitarian ministration acceded to industrial administration, three decades ahead of its geopolitical fulfillment in the anti-imperial insurrections of 1916-1922.

The contradictions of Bruckner's Hapsburg loyalism had their counterpart in the contradictions of Tchaikovsky's Romanov royalism. This parallel ran deeper than the obvious fact that Ludvig II's personal patronage and the Bavarian subsidies which financed Wagner's *Ring* cycle were comparable to the Romanov dynasty's personal patronage of Tchaikovsky and the lavish state subsidies which underwrote Tchaikovsky's three great ballets.

To paraphrase Adorno, if Brahms wrote music for music professors and Bruckner for village organists, then Tchaikovsky wrote for dance choreographers.⁵⁰⁶ These latter were

⁵⁰⁵ Celibidache delivered one of the best versions of this finale, running from 1:36:10 until 1:39:41: <https://www.youtube.com/watch?v=elVHvTrEM34>.

⁵⁰⁶ "It is worth making the effort to consider the heaps of dross, junk and garbage upon which the works of significant artists appear to be based, and to which the latter, barely escaping the former, owe nonetheless something of their habitus. For Schubert, it is the card-sharp at the inn, for Chopin, it is the shadowy and ill-defined type of the 'salon', for Schumann it is the chromolithograph [Öldruck: color-print] and for Brahms, it is the music professor: their productive force maintains itself in the closest proximity to parody, and their greatness in the small remove by which they keep themselves from their models, from which their collective energies accrue, as it were." ["Es lohnt den Versuch, die Haufen von Abfall, Schutt und Unrat zu betrachten, auf denen die Werke bedeutender Künstler sich zu erheben scheinen, und denen sie, knapp Entrinnende, etwas von ihrem Habitus doch verdanken. Zu Schubert gehört der Wirtshausspieler, zu Chopin der schwer dingfest zu machende Typus der 'Salon', zu Schumann der Öldruck, zu Brahms der Musikprofessor: in der dichtesten Nachbarschaft der Parodie hat ihre Produktivkraft sich behauptet, und ihre Grösse in dem kleinen Abstand, den sie von jenen Modellen halten, aus denen ihnen zugleich kollektive Energien zuwachsen." Theodor W. Adorno. "Versuch Über

exemplified by Marius Petipa, the French expatriate who served as the principal choreographer of St. Petersburg's Imperial Ballet from 1871 until 1903. While Petipa contributed to the choreography of *Swan Lake*, his extensive work on *Sleeping Beauty* and *The Nutcracker* was crucial to their canonic musical status.⁵⁰⁷

From a musicological standpoint, where Brahms' ghost sonata employed the means of chromatic augmentation and Bruckner's ghost symphony employed orchestral sonority, Tchaikovsky's ghost ballet employed melodic rhythmicity. The breakthrough moment of this rhythmicity was *Swan Lake*, and it is no accident that this latter's libretto was essentially the ballet version of *Tristan and Isolde*. The main difference was that Wagner's mature operas leveraged central Europe's five decades of post-1815 industrialization to create the industrial magic of an achieved chromaticism, precisely where Tchaikovsky three greatest achievements – *Sleeping Beauty*, *Symphony 6* and *The Nutcracker* – leveraged the Russian empire's three decades of post-1861 industrialization to create the magic industrialism of an implied chromaticism.

This implied chromaticism was the secret of Tchaikovsky's signature melodies, which did not function thematically but programmatically, as embodiments of chromatized space – literally, as the industrial soundtrack of each dance spectacle.⁵⁰⁸ Conversely, the weakest aspect of *Swan Lake* was its use of ethno-national dance styles modeled on the imperial national palimpsests of early 19th century Romanticism. This was most apparent in the ten minute cavalcade of Act 2 which employed a putatively Spanish dance, a Neapolitan dance, a Hungarian dance, and a Polish mazurka as decorative rather than musical elements.

Sleeping Beauty replaced these palimpsests with national folk styles organized under a unified international style. The twin tentpoles of this international style were the dueling themes of dance 4, namely Carabosse's spiteful mechanical (albeit not fully mechanized) chromaticism and the Lilac Fairy's benevolent (albeit not fully harmonized) pastoralism. These two themes

Wagner." *Gesammelte Schriften* 13. Frankfurt am Main: Suhrkamp Verlag, 1971 (26). This is my translation.

⁵⁰⁷ "The choreographer Marius Petipa wrote out instructions for Tchaikovsky for *Sleeping Beauty*, and they make fascinating reading, for they show us how the composer responded musically to specific – and sometimes very narrow – requests. Petipa indicated expressive musical effects, metres, types and lengths of each dance in bars and, occasionally, he even requested instruments, as in 'Variation d'Aurore' [French: Aurora Variation] in Act I: '3/4 pizzicato for violins, cellos, and harp. (Excuse me for expressing myself so oddly.) And then lute [sic] and violin.' For the evil Fairy Carabosse's appearance in the Prologue, for instance, Petipa requested 'music of a fantastic character'; and Tchaikovsky responded with the menacing Carabosse Theme, in which horns and woodwinds strongly accent the offbeats as the clarinet sings out the chromatic melody, sometimes in duet with the bassoon. These darker woodwinds return to represent the mysterious and vengeful Carabosse throughout the ballet." Thérèse Hurley. "Chapter 14. Opening the door to a fairy-tale world: Tchaikovsky's ballet music." In: *The Cambridge Companion to Tchaikovsky*. Edited by Stuart Campbell. Cambridge: Cambridge University Press, 2011 (167-168).

⁵⁰⁸ This is something Italian composer Riccardo Drigo, who helped edit *Swan Lake*, seems to have intuitively understood. Drigo wisely excised the "Russian Dance" sequence because its freneticism would have clashed programmatically with the rest of the ballet.

were not in direct contention with each other, but signified the contradictions of Russia's semi-peripheral despotic industrialism and its equally semi-peripheral national imperial audience, respectively.

Tchaikovsky's first attempt to work through these contradictions was Act 1's dance 8a, with its memorable contrast between idyllic harp credenzas on the one hand and dynamic march themes on the other. These marches alluded not to the energies of industrialism – the dream-mice in *The Nutcracker*'s Act 1 were, as we shall see in just a moment, the solitary expression of proletarianization in Tchaikovsky's oeuvre – but to the industrial-tinged dynastic expansionism exemplified by the official launch of the construction of the trans-Siberian railroad in 1891. Tchaikovsky's eventual musical solution was the extraordinary Interpolation dance of Act 3 conducted by Cendrillon and Prince Fortuné. Where a lesser composer might have regressed back to early 19th century musical Romanticism, Tchaikovsky forged ahead by retrofitting a well-nigh Brucknerian density of horns with an electrifying piano solo: a ghost piano to serenade a ghost ballet.

The Nutcracker pushed this achievement even further, by cashiering the formulaic three-act structure and imperial national cavalcades of Tchaikovsky's first two ballets in favor of a compressed two-act drama and an industrial consumerism designed to appeal to the urbanized commercial and cultural elites of the semi-periphery.⁵⁰⁹ What made this consumerism possible was the ballet's libretto, a compressed version of Alexandre Dumas' *The Story of a Nutcracker* (1844), which was itself a sanitized adaptation of E.T.A. Hoffmann's quasi-Gothic horror tale *The Nutcracker and the Mouse King* (1816).

But where Dumas' story became one of the staples of late 19th century French children's culture, *The Nutcracker* deserves wider recognition as the foundational work of industrial-era children's culture in the Russian empire. Tchaikovsky's most ingenious innovation – and the reason the ballet remains a worldwide holiday favorite to this day – was to sidestep the problem of the Russian empire's semi-peripherality vis-a-vis the core consumerisms by training the national imperial audience to become international consumers of commodities.

Act 1 taught semi-peripheral audiences the late Victorian conventions of holiday celebrations, gift-giving, boyhood and girlhood. Conversely, Act 2 showcased the international commodities which successful Victorianization granted access to: thus dance 14's "Chocolate (Spanish dance)", dance 5's "Coffee (Arab dance)", dance 16's "Tea (Chinese dance)", and dance 18's "Dance of the mirlitons" (the mirliton was a musical instrument similar to a kazoo as well as the name of a French pastry). More ominously, the list also included one of the first instances of Russo-national cultural imperialism, namely dance 12d's "Trepak (Russian dance)" – the Russian trepak necessarily excluded the Ukrainian trepok.⁵¹⁰

The musical high point of this consumerism was the beginning of Act 1's dance 9. This was the scene where the holiday family residence transmuted into a fairyland, and the eerie, spectral sound track of disconnected chords and abstruse sound-effects marked the moment

⁵⁰⁹ Excluding intermissions, the score of *Swan Lake* runs for two hours and twenty minutes, whereas the score of *The Nutcracker* runs for an hour and a half.

⁵¹⁰ The Russian trepak and Ukrainian trepok is not to be confused with the Ukrainian hopak, another Cossack dance which became one of Ukraine's national dances.

Tchaikovsky came closest to anticipating Debussy's impressionism. It also marked the inauguration of Victorian-style childhood in the Russian empire. Henceforth, the story focused on the girl protagonist, Klara, and her eventual romantic coupling with the prince of the Land of Sweets.

This coupling was legitimated by a spectacular dance battle between tin soldiers and nibbling mice, a scene halfway between Russia's imperial conquest of colonial borderlands and the Victorian domestication of the partly waged laborers of the late 19th century household (i.e. wives, children and servants). Tchaikovsky went so far as to evoke the specter of the labor mobilizations of these partly waged laborers in the form of the seven-headed Mouse King, who battles the tin soldiers to a draw. Ultimately, the Mouse King could only be dispatched by Klara's thrown slipper – the inaugural moment of Victorian hysteria *à la russe* [French: in Russian].

International consumerism and Victorian childhood converged in the finale of Act 1's dance 11 (the voyage), the acoustic version of the Russian empire's first international consumer spectacle nine years ahead of its legendary pavilion at the 1900 World's Fair, described in more detail in the next chapter. After the unfortunate stumble of the children's chorus utilized in the midst of dance 12, an early exemplar of the auditory dross which afflicts commercial holiday music to this day, Tchaikovsky delivered some of the late 19th century's most memorable tunes in Act 2. Each of these temporarily revived obsolete tonal material by means of rhythmic variation as well as chromatic spatialization.

Dance 15 ("coffee," Arab dance) delivered a brooding landscape of musical Orientalism congruent with the longstanding Romanov fantasy of conquering the Ottoman city of Constantinople for Eastern Orthodoxy, which would have disastrous consequences in 1914. Dance 16 ("tea", Chinese dance) featured an animated flute which playfully recalled the steam whistle at a British tea party. Meanwhile, Dance 20 ("waltz of the flowers") balanced its sugary opening horn motif, squarely rooted in First Viennese School tonality, with the sorrowful theme of the massed violins which ran from measures 172 until 201. Most famous of all, Dance 21c ("dance of the Sugar-Plum Fairy") utilized the sonority of the celesta, an instrument invented by French organist Auguste Mustel in 1886, to create an auditory spatiality only millimeters away from full chromaticism.

That said, Tchaikovsky's definitive transition to chromaticism did not occur until his final classic, *Symphony 5* (1893), a decade and a half after the comparable transitions in Brahms' 1877 *Symphony 2* and Bruckner's 1878 *Symphony 5*.⁵¹¹ The magnificent first movement of Tchaikovsky's *Symphony 6* transformed the tonal elements of melodic rhythmic variation still preserved by *The Nutcracker* into a fully spatialized chromaticism. This latter erupted from the constraints of tonality with volcanic force between measures 161 and 304, in a sequence best described as the musical analogue of Edvard Munch's iconic painting *The Scream* (1893).

This sequence, explicitly set in the key of B minor which was also the key of the entire symphony, culminated in an insistent four-note horn phrase which moved up two major steps and then resolved one step above the opening note. This half-cadence was repeated six times over,

⁵¹¹ The commonly-used French title of Tchaikovsky's work, "*Symphonie Pathétique*", was a mistranslation of the composer's own term "Патетическая" (Pateticheskaya), which literally means passionate.

each time in a lower register, in the Romanov variant of Bruckner's Hapsburg orchestral sonority.

The second movement employed what music critics have termed the melodic rhythmic variation of a "limping waltz", but which is best understood as the ghost waltz which logically complemented Brahms' ghost sonata, Bruckner's ghost symphony, and Tchaikovsky's own ghost ballet. This ghost waltz enabled Tchaikovsky to overcome the inherent limitations of the choreographic number and the scenic transition inherent to ballet as a form. It also anticipated the new forms of international music spawned by Edison's 1876 phonograph and Marconi's 1895 radio broadcast, which would culminate in the studio recording technologies and international music distribution networks of the 1920s.⁵¹²

This ghost waltz came into its own in the second and third movements, which were essentially two chromatic variations of a single musical palette. The second movement was organized around the dour finitude of the late 19th century bourgeois interior, relayed by an upbeat theme in the key of D major and followed by a return to the gloom of B minor. The third movement employed march-like themes in E major and G major to evoke the space of the semi-nobilitarian public assembly.

The price the symphony paid for this progressive spatialization was the temporal revanchism of the fourth movement. This latter surged irresistibly forwards towards a near-resolution in C major, only to vanish into a welter of timpani after measure 126. This was the repetition of the musical eruption depicted by the first movement, only this time without the providential four-note horn theme which rescued the tonal material from the chromatic abyss. The result was a shocking collapse into the nether gulfs of B minor – the musical anticipation of the dynastic collapse which would occur twenty-four years in the future.

To recapitulate, we have argued that the fact that the artists of the semi-periphery were not yet fully suborned to the industrial consumerism of the core, while the circuits of semi-peripheral reception were not yet fully organized into national imperial audiences, created a unique and unrepeatable window of historical opportunity for Ibsen and Strindberg to invent naturalist theater, for Dostoyevsky and Machado de Assis to construct the naturalist novel, and for Brahms, Bruckner and Tchaikovsky to create orchestral and symphonic chromaticism. We are now in a position to expand this argument to the field of aesthetic reception and theoretical production, namely the unique window of historical opportunity available to the leading theorists of the semi-periphery during the 1878-1904 conjuncture.

The exemplary figure of this semi-peripheral window was Friedrich Nietzsche. Nietzsche's four most realized texts – *Human, All Too Human* (1878-1880), *The Joyful Science* (1882), *Zarathustra* (1883) and *Beyond Good and Evil* (1886)⁵¹³ – were more than just trenchant critics of the national imperial elites and dynastic-tinged ideology of the German empire. They constituted nothing less than the second volume of Marx's *Capital*.

⁵¹² We will analyze the early 20th century music-industry more closely in the next volume, but for an excellent account of the 1925-1930 musical conjuncture, see: Michael Denning. *Noise Uprising: The Audiopolitics of a World Musical Revolution*. New York: Verso, 2015.

⁵¹³ *Genealogy of Morals* (1887) was a coherent restatement of his earlier work but did not break new ground, while everything Nietzsche wrote thereafter was vitiated by his descent into dementia. Nietzsche collapsed in January 1889 and remained a dependent ward of his family until his death in 1901.

To understand why this is so, it is worth pausing for a moment to reflect on why Marx was unable to complete the projected second and third volumes of *Capital* in the sixteen years following the completion of Volume 1. It is true Marx was hindered by the lack of reliable statistical data typical of the mid-Victorian era, by the limited communications technologies of the day, as well as by Marx's own declining health.

Yet the real reason these two volumes remained unfinished was that they were unfinishable. The concept of British hegemonic capital Marx formulated so brilliantly in Volume 1 was merely the first installment of the three-part theory required to grasp the capitalist world-system as a whole. The second volume would have consisted of a theory of British political hegemony, while the third would have been a theory of Britain's cultural hegemony. These volumes were as historically impossible in Marx's time as a Victorian-era silicon microprocessor.

What was possible, on the other hand, was the industrial forerunner of that microprocessor, namely the Scheutz difference engine. This latter was the world's first commercial printing calculator. It was created by a father-and-son team of Swedish inventors, who first exhibited the device in 1855 at the Paris Exposition and sold it in 1857 to a customer in the United States.⁵¹⁴ We will argue that Nietzsche's four greatest texts were the Scheutz engine of political theory, whereas Henri Bergson's *Time and Free Will* (1889) was the Scheutz engine of aesthetic theory.⁵¹⁵

Many of Nietzsche's key insights can be traced back to the unresolved tensions of his 1872 text *The Birth of Tragedy*, which argued that Greek epic tragedy was constructed on irreconcilable social contradictions – or what Nietzsche termed the clash of the Apollonian and the Dionysian, a.k.a. the hazy but unmistakable forebears of Freud's ego and id.⁵¹⁶ What made Nietzsche's argument so interesting was not just its philologically-informed rethinking of Greek antiquity,⁵¹⁷ but what it revealed about the underdevelopment of the German empire's national

⁵¹⁴ “In the early 1800s, the English mathematician Charles Babbage proposed a machine called a difference engine that would compute and print automatically a large class of tables. Although Babbage's machine was never completed, it inspired the Swedish publisher Georg Scheutz and his son Edvard to build this instrument. It was exhibited at the world's fair held in Paris in 1855 and sold to the Dudley Observatory in Schenectady, New York. It also was the first computing machine to carry out computations under U.S. government contract.” Smithsonian Natural Museum of American History, Behring Center. https://americanhistory.si.edu/collections/search/object/nmah_997042

⁵¹⁵ Since Bergson was located in the core polity of France, and this chapter focuses on the artists and thinkers of the semi-periphery, we will analyze his contribution to aesthetic theory in the next chapter.

⁵¹⁶ This insight should be credited to Paul Franco, who pointed out that aphorism 251 of *Human, All too Human* anticipated Freud's later formulation of the ego and id. Paul Franco (2007). “Nietzsche's *Human, All Too Human* and the Problem of Culture.” *The Review of Politics* 69:2 (238).

⁵¹⁷ One of the tasks of future theorists will be to build on Nietzsche's insight by analyzing how the greatest aesthetic works of the Iron Age (approximately 1200 BC to 500 CE) drew upon the political contradictions of tributary, kinship-based, hieratic and scribal polities, as well as the economic contradictions of pre-industrial agricultural labor, craft labor, and mercantile distribution and exchange for their content. Some of the key mediations necessary for such an analysis would include the physical geography of river-valleys (important for both soil fertility as well as transportation), the human

imperial audiences and its culture-industry vis-a-vis those of the core polities.

As late as 1876, Nietzsche clung to the hope that Wagnerian opera would be the Parthenon capable of reconciling the Apollonian sublime of Beethoven's symphonies with the Dionysian fury of Chopin's mazurkas. Instead, Wagner inaugurated the world's first industrial media franchise by staging the *Ring* cycle at Bayreuth. A thoroughly disillusioned Nietzsche subsequently denounced Bayreuth as a cult of philistines and petty intriguers in *Human, All Too Human*.

This belated repudiation of Wagner was the flip side of an equally belated repudiation of the post-1871 German empire. Nietzsche was born and raised in the semi-feudal province of Saxony administered by Prussia's Frederick William IV, who reigned from 1840 until 1861. Although Nietzsche relinquished his Prussian citizenship in 1869 in order to teach at the University of Basel in Switzerland and remained officially stateless for the rest of his life, he joined the Prussian army as a foreign volunteer during the Franco-Prussian war with high hopes for a united Germany. By the late 1870s, he was as disappointed by Wilhelm I's tinpot autocracy as he was disgusted by Wagner's circle of sycophants.

Nietzsche's response was to abandon the form of the academic tract and to reinvent the early 19th century essay in the form of the industrial aphorism. This latter was the semi-peripheral analogue of the London critical review and the Parisian feuilleton, the key difference being that these latter were meditations on national imperial audiences and circuits of cultural reception which were still very much under construction in the semi-periphery. At their most progressive, these aphorisms upheld the mandate of the international progressivisms of the semi-periphery, by critiquing the national imperialism of the oligarchic republics as well as the dynastic empires of capital.

Consider aphorism 187 of *Human, All Too Human*, which extracted the kernel of materialism from the Hegelian triad of the affirmative thesis, the negating antithesis, and the reconciling synthesis or sublation: "The antithesis is the narrow gate, through which error most prefers to sneak to the truth."⁵¹⁸ This sneaking is crucial. It means the thesis cannot know or

geography of livestock-powered overland trade and wind-powered coastal trade, the various innovations of animal domestication, plowing and crop rotation, secondary agricultural processing (milling, cooking and brewing), and the state of metalworking and tool-making technology. These mediations would need to be deployed on both a micrological as well as macrological level. On the micrological level, the dramas of Aeschylus, Euripides and Sophocles are to be grasped in the context of the ledgers of Athenian shippers and the household implements of slave kitchens. On the macrological level, the West Asian constellation (in Adorno's sense of the term) which produced Socrates' dialogism and Plato's Platonism and is to be grasped in the South Asian constellation which produced Buddha's Buddhism and the East Asian constellation which produced Mencius' Confucianism, Shang Yang's Legalism and Lao Tzu's Taoism. Following the cosmological term for the form of groups of galaxies bound by gravitational forces, we will suggest these groups of constellations can be thought of as "clusters" within the cosmos of human history.

⁵¹⁸ "Die Antithese. – Die Antithese ist die enge Pforte, durch welche sich am liebsten der Irrthum zur Wahrheit schleicht." Friedrich Nietzsche. *Human, All Too Human, Volume 1*. Aphorism 187. 1878. This is my translation.

contain its sublation in advance, but must undergo the conceptual labor of its antithesis.⁵¹⁹

This labor of the concept had its musicological expression in aphorism 134, wherein Nietzsche traced the prehistory of Wagner's chromaticism back to the epoch of confessional musical rituals and village folk music:

How modern music is supposed to move the soul. – The artistic intention which modern music pursues, which is nowadays delineated, forcefully but indistinctly, as “endless melody”, can be clarified as follows, that you walk into the sea, gradually lose sure footing and finally yield to the grace or disfavor of the surging elements: you have to swim. In all hitherto traditional music you had to dance, tactfully or solemnly or in a fiery to and fro, both faster and slower: whereby the measure necessary for the maintenance of a certain equilibrating time and degree of power, for an enduring prudence [Besonnenheit], was imposed on the soul of the listener: the magic of that music rested on the opposition of this cooler draught of air which came from this prudence [Besonnenheit], and the warmed-up breath of musical enthusiasm.⁵²⁰

Nietzsche followed up on this insight in aphorism 217's diagnosis of the internal polarization between a handful of highly-trained connoisseurs and the masses of untutored consumers in Germany's enlarged national musical audience:

Thus in Germany there is a double stream of musical development: here a crowd of ten thousand with ever higher, sweeter claims and ever more attentive to ‘what it means’, and there the monstrous majority [Überzahl], who every year become less capable of understanding that which is significant even in the

⁵¹⁹ There is a similar progressive undercurrent in aphorism 304, which spells out the contradiction between industrial accumulation and industrial solidarity: “*Spirits of overthrow and spirits of possession.* You all must first vanquish yourselves, if you wish to somehow be victorious over the opponents of your prosperity. – And if only that prosperity were truly well-being! It would not be so superficial and envy-inducing, it would be empathic, benevolent, equalizing, helping. [“Umsturzgeister und Besitzgeister. – Euch müsst ihr zuerst besiegen, wenn ihr irgendwie über die Gegner eures Wohlstandes siegen wollt. – Und wäre jener Wohlstand nur wirklich Wohlbefinden! Er wäre nicht so äusserlich und neidherausfordernd, er wäre mittheilender, wohlwollender, ausgleichender, nachhelfender.”] Friedrich Nietzsche, *Human, All Too Human, Volume 2, Part 1*. Aphorism 304. This is my translation.

⁵²⁰ “*Wie nach der neueren Musik sich die Seele bewegen soll.* – Die künstlerische Absicht, welche die neuere Musik in dem verfolgt, was jetzt, sehr stark aber undeutlich, als “unendliche Melodie” bezeichnet wird, kann man sich dadurch klar machen, dass man in's Meer geht, allmählich den sichern Schritt auf dem Grunde verliert und sich endlich dem wogenden Elemente auf Gnade und Ungnade übergibt: man soll schwimmen. In der bisherigen älteren Musik musste man, im zierlichen oder feierlichen oder feurigen Hin und Wieder, Schneller und Langsamer, tanzen: wobei das hierzu nöthige Maass, das Einhalten bestimmter gleichwiegender Zeit und Kraftgrade von der Seele des Zuhörers eine fortwährende Besonnenheit erzwang; auf dem Widerspiele dieses kühleren Luftzuges, welcher von der Besonnenheit herkam, und des durchwärmten Atems musikalischer Begeisterung ruhte der Zauber jener Musik.” Friedrich Nietzsche, *Human, All Too Human, Volume 2, Part 1*. Aphorism 134. This is my translation.

form of sensuous ugliness and therefore learn to pursue that which is ugly and nauseating in music – that is to say, the basely sensuous – ever more readily.⁵²¹

For all their achievements, Nietzsche's industrial aphorisms had two glaring limitations, both rooted in the geopolitical closure of the post-1871 German empire. This was their aesthetic and economic provincialism, or put more precisely, the inability of the industrial aphorism to access Bergson's concept of industrial consumerism or Marx's concept of British hegemonic capital.

This aesthetic provincialism was most apparent in Nietzsche's inability to grasp what was genuinely progressive about Wagner's chromaticism, namely its democratization of the realm of musical reception. Its economic counterpart was Nietzsche's lack of empathy for the political aspirations of Germany's fully and partly waged laborers, something most apparent in his reactionary broadsides against the Social Democrats for the temerity of suggesting the wealthy ought to be mildly taxed for the public good.⁵²²

What was most damaging about these provincialisms was their secret defanging of Nietzsche's critique of German national imperialism. Whenever Nietzsche's industrial aphorisms failed to grasp the aesthetic and economic materiality of the core polities, they recoiled into the miasma of Germany's semi-peripheral national imperial revanchism. One of the most revealing examples of this recoil was aphorism 475, which argued that the nations of Europe were slowly but surely converging into a unified European polity comparable to the post-Civil War United States. The role of the German empire would be to be one of the intermediaries of this transformation, which would also have the happy side-effect of causing anti-Semitism to go extinct.

The problem with this fairy-tale of Bismarckian benevolence was not just that the German empire was as despotic and murderous as its imperial rivals. It was that Europe was defined from the beginning as the negation of a repressive Asian despotism: "If Christianity did everything to Orientalize the Occident, then the Jewish people [Judenthum]," concluded Nietzsche, "have crucially helped ever and again to occidentalize it: what in a certain sense

⁵²¹ "So giebt es in Deutschland eine doppelte Strömung der musicalischen Entwicklung: hier eine Schaar von Zehntausend mit immer höheren, zarteren Ansprüchen und immer mehr nach dem 'es bedeutet' hinhörend, und dort die ungeheuere Überzahl, welche alljährlich immer unfähiger wird, das Bedeutende auch in der Form der sinnlichen Hässlichkeit zu verstehen und desshalb nach dem an sich Hässlichen und Ekelhaften, das heisst dem niedrig Sinnlichen, in der Musik mit immer mehr Behagen greifen lernt." Friedrich Nietzsche, *Human, All Too Human, Volume 1*. Aphorism 217. This is my translation.

⁵²² For example, aphorism 452 argued against redistribution on the basis of no evidence whatsoever, while aphorism 457 channeled the propaganda of the pre-1861 southern US plantocrats, who claimed their chattel were happier than northern fully waged workers. Aphorism 473 dismissed socialism as the conniving nephew of Napoleon III: "Socialism is the imaginative younger brother of an almost outlived despotism whose throne it wants to inherit; its efforts are thus on the deepest level reactionary." ["Der Socialismus ist der phantastische jüngere Bruder des fast abgelebten Despotismus, den er beerben will; seine Bestrebungen sind also im tiefsten Verstande reactionär."] Friedrich Nietzsche, *Human, All Too Human, Volume 1*. Aphorisms 473. This is my translation.

meant making Europe's mission and history into a continuation of the Greek one".⁵²³

While the first volume of *Human, All Too Human* was still vague as to the precise location of this Asian despotism (aphorism 477 argued that imperial war was an indispensable means of resuscitating effete European polities, but refrained from naming names),⁵²⁴ aphorism 231 in part 2 of the second volume plunged headfirst into that catastrophic variant of post-1860 Austrian and German industrial racism otherwise known as Slavophobia:

The most dangerous emigration. – In Russia there is an emigration of the intelligentsia: you cross borders in order to read and write good books. This has the effect however of turning a fatherland bereft of Spirit [Geist] more and more into a gaping maw which wants to swallow up little Europe.⁵²⁵

In fairness to Nietzsche, no artist or thinker residing in the semi-periphery of Global Steam during the 1870s and 1880s could have handled this contradiction any better. The root of the problem was that Prussia's 1870-1871 military victory over France could not and did not transform the German empire into a core polity, but only cemented its semi-peripheral status. Bismarck's triumph was possible only because of the window of opportunity created by the unrepeatable combination of Napoleon III's uncompetitive and self-defeating adventurism, and the one-time innovations of Moltke's land army: the use of railroads for logistics, massed artillery for firepower, universal conscription for manpower, and a general staff to conduct overall strategy.

This window opened in 1866 and then closed in 1876, due to the consolidation of France's core polity via the economic, political and cultural reforms of the Third Republic. Successive Republican governments revitalized the French economy, reconstituted the French army à la Moltke, and transformed French politics into a parliamentary democracy. When confronted with the reality that only half of all French citizens spoke the national language in the mid-1870s,⁵²⁶ French Minister of Public Works Charles de Freycinet invested unprecedented sums in roads and public education.⁵²⁷

⁵²³ "Wenn das Christenthum Alles gethan hat, um den Occident zu orientalisiren, so hat das Judenthum wesentlich mit dabei geholfen, ihn immer wieder zu occidentalisiren: was in einem bestimmten Sinne so viel heisst als Europa's Aufgabe und Geschichte zu einer Fortsetzung der griechischen zumachen." Friedrich Nietzsche, *Human, All Too Human, Volume 1*. Aphorisms 475. This is my translation.

⁵²⁴ Friedrich Nietzsche, *Human, All Too Human, Volume 1*. Aphorisms 477.

⁵²⁵ "Gefährlichste Auswanderung. – In Russland giebt es eine Auswanderung der Intelligenz: man geht über die Gränze [Grenze], um gute Bücher zu lesen und zu schreiben. So wirkt man aber dahin, das vom Geiste verlassene Vaterland immer mehr zum vorgestreckten Rachen Asiens zu machen, der das kleine Europa verschlingen möchte." Friedrich Nietzsche, *Human, All Too Human, Volume 2, Part 2*. Aphorism 231. This is my translation.

⁵²⁶ "The Third Republic found a France in which French was a foreign language for half the citizens." Eugen Weber, *Peasants Into Frenchmen* (70).

⁵²⁷ "In 1881 all fees and tuition charges in public elementary schools were abolished. In 1882 enrollment in a public or private school was made compulsory. In 1883 every village or hamlet with more than 20

This semi-peripherality vitiated the heart of Nietzsche's critique of the German empire, namely that Wilhelm I and Bismarck were pettifogging intriguers who betrayed the promise of German unification in much the same way Wagner betrayed the promise of Bayreuth – the lament, in other words, that the semi-peripheral German empire was still a semi-periphery. It is no accident that Nietzsche's next text, *The Joyful Science*, most famous for its iconoclasm,⁵²⁸ would turn to the maritime imperialism of the core polities as the antidote to Hohenzollern provincialism:

On the horizon of the endless. – We have departed from land and are all aboard! We've broken from the bridges behind us – even more, from the very land itself! Now, little ship! Watch out! Around you lies the ocean, it's true, the latter doesn't always howl, and now and again it lies there, like silk and gold and the dreams of riches. But there will come hours when you will realize that it is endless and that there is nothing more terrifying than endlessness. Oh the poor birds, which felt free and are now tossed against the walls of this cage! Woe to those who fall prey to land-homesickness [Land-Heimweh], as if there were more freedom there – for now there is no 'land' anymore!⁵²⁹

Despite being marooned in northern Italian hotels by his declining health, Nietzsche accurately diagnosed the dramatic intensification of maritime imperialism during the 1880s. *The Joyful Science* was published in 1882, the year the world's empires began to fulfill the mandate of aphorism 289 (“There is still another world to discover – and more than just one! To the ships, philosophers!”).⁵³⁰ This was the year Meiji Japan began the construction of a blue water navy

school-age children was required to maintain a public elementary school. In 1885 subsidies were allotted for the building and maintenance of schools and for the pay of teachers. In 1886 an elementary teaching program was instituted, along with elaborate provisions for inspection and control.

We may observe that the adoption of these policies coincided with the vast expenditures of the Freycinet Plan. The millions that were spent on building roads were matched by vast sums for schools: 17,320 schools had to be built, 5,428 enlarged, 8,381 repaired. A school fund set up in 1878 dispensed 311 million francs in subsidies, 231 million more in loans in the space of seven years. Meanwhile, the budget for public instruction rose from 53,640,714 francs in 1878 to 133,671,671 in 1885, enough to set money flowing through the country and to convince the undecided of the virtues of the new policies.” Eugen Weber, *Peasants Into Frenchman* (308-309).

⁵²⁸ “God is dead.” [“Gott ist tot.”] Friedrich Nietzsche, *The Joyful Science*. Aphorism 343.

⁵²⁹ “Im Horizont des Unendlichen. – Wir haben das Land verlassen und sind zu Schiff gegangen! Wir haben die Brücke hinter uns, – mehr noch, wir haben das Land hinter uns abgebrochen! Nun, Schifflein! sieh' dich vor! Neben dir liegt der Ocean, es ist wahr, er brüllt nicht immer, und mitunter liegt er da, wie Seide und Gold und Träumerei der Güte. Aber es kommen Stunden, wo du erkennen wirst, dass er unendlich ist und dass es nichts Furchtbarereres giebt, als Unendlichkeit. Oh des armen Vogels, der sich frei gefühlt hat und nun an die Wände dieses Käfigs stösst! Wehe, wenn das Land-Heimweh dich befällt, als ob dort mehr Freiheit gewesen wäre, – und es giebt kein 'Land' mehr!” Friedrich Nietzsche, *The Joyful Science*. Aphorism 124. This is my translation.

⁵³⁰ “Es giebt noch eine andere Welt zu entdecken – und mehr als eine! Auf die Schiffe, ihr Philosophen!” Friedrich Nietzsche, *The Joyful Science*. Aphorism 289. This is my translation.

with French and British assistance, and the same year Britain deployed its hegemonic navy to colonize Egypt, transforming the Suez canal from a French monopoly into an Anglo-French duopoly. Its dreams of Mediterranean hegemony dashed, the French empire responded by dispatching its navy to colonize Vietnam in 1883, sinking a number of Qing steamships in the process. The year 1883 also saw the United States join the maritime fray, when its Congress approved the construction of a blue water navy.

In 1884, the infamous Berlin Conference began, ushering in the German empire's acquisition of present-day Burundi, Cameroon, Namibia, Tanzania and Rwanda in Africa and New Guinea in the Pacific from a congerie of German colonial charter companies and mercenaries. In 1887, the League of Three Emperors Bismarck had established in 1873 between Austria, Germany and Russia as a dynastic counterweight to republican France lapsed for the second and final time.⁵³¹ The stage was set for Wilhelm II's ascension to the throne in 1888, whereupon he ordered the construction of the German empire's own blue water navy – the moment which irrevocably locked Germany into an unwinnable maritime competition against Britain and France.

The phantasmagoria of German maritime expansionism coursed through the veins of Nietzsche's last two significant texts, *Thus Spake Zarathustra* and *Beyond Good and Evil*, like a slow poison, dulling their critical insights and clouding their judgments. *Thus Spake Zarathustra* was Nietzsche's best worst text, a philosophical manifesto of the every-person (Übermensch) which ended up cheerleading nobody's imperialism in particular.

Nowhere was the divide between the progressive aspirations of Nietzsche's industrial aphorism and the limitations of his semi-peripheral location more painfully apparent than in the character of Zarathustra. This latter was meant to surpass Moses and his tablets by channeling the industrial dynamism of Nemo and his gadgets. Yet without the cosmopolitan technologies of the Nautilus or the international solidarity of Nemo's crew, Zarathustra's speculations invariably recoiled over into the provincialism they wished to escape. The prophet of the mountaintop who was to shatter all tablets in Chapter 56 of Part 3, one of the high points of the text, turned out to be the enfeebled sanatorium inmate of Chapter 57, who talked to imaginary animals.⁵³²

There was a similar contradiction at work in *Thus Spake Zarathustra*'s most compelling innovation, the concept of the eternal return ("ewigen Wiederkunft"). The purpose of this latter was to critique the obsolete temporality of the Christian resurrection (the "zweite Wiederkunft" or Second Coming of the Messiah) by means of the spatialized subject or psychological self. The problem was that this self was modeled on the imperial masculinity of the core polities. It was a bet on the imperial winners of the future, rather than a critique of the zero-sum game of imperial competition which the empires of the semi-periphery had no chance of winning.

Put bluntly, *Thus Spake Zarathustra* correctly intuited the spirit of Americanization (the might of US national imperial capital) but did not have a corresponding concept of the Americanization of the spirit (the semi-peripherality of German national imperialism). Where Walt Whitman's national imperial "I" effortlessly embodied the plebian multitudes,

⁵³¹ The pact had been in abeyance from 1878-1881 due to Austria's misgivings over Russian expansionism during the Russo-Turkish war, and renewed after 1881.

⁵³² Friedrich Nietzsche. *Thus Spake Zarathustra*. 1883. Part 3, Chapter 56 and Chapter 57.

Nietzsche had to constantly remind readers that Zarathustra was at the podium.

This contradiction reached its breaking-point in *Beyond Good and Evil*. While great swathes of this latter were occluded by Nietzsche's own increasing mental disorganization – he would lose the capacity to function as an adult just three years after its completion – there were occasional moments which anticipated the sociology of Max Weber and the critical theory of Walter Benjamin and Theodor Adorno.

Consider Nietzsche's famous comment concerning monsters and the abyss ("Whoever struggles against monsters should see to it that they do not become a monster," wrote Nietzsche, "And if you look at length into an abyss, the abyss also looks into you").⁵³³ It is not difficult to decode these monsters as ciphers of the colonial empires which the German semi-periphery sought to emulate by becoming an imperial monster in its own right. What is more surprising is Nietzsche's empathy with the denizens of the abyss, a.k.a. the peoples of the colonial and neocolonial periphery. These latter had begun to organize themselves in the 1880s against colonialism, everywhere from the founding of the Indian National Congress in 1885 to the first literary classics of Rabindranath Tagore.

This critical impulse was also apparent in Nietzsche's repudiation of the national imperial collectivities of the German semi-periphery ("Insanity is seldom in individuals – but the rule in groups, parties, peoples and epochs").⁵³⁴ Its single most powerful expression was the call for the transvaluation of valuation ("Umwertung der Wertung"), a phrase often mistranslated as the transvaluation of values (the German term for value is "Werte"). This transvaluation of valuation was subsequently linked to the notion of the involution ("Umkehrung", the noun form of the verb "umkehren", to involute or transfigure) of valuation by means of a new subject of history. This latter was described as a self-aware avante-garde capable of changing the course of history:

We who hold differing opinions – we who regard the democratic movement not merely as a decay-form of political organization, but as a decay-form and diminution-form of humanity, of its mediocrization and value-denigration: to where can we apply our hopes? – To modern philosophers, the only choice is, spirits [Geistern: spirits, minds] strong and original enough to hold opposing value-judgements against these blows and to transvalue [umzuwerten] and involute [umzukehren: invert, transfigure, turn inside out] 'eternal values'; to the advance guard [Vorausgesandten], to the humanity of the future, who bend compulsion and the knot, compelling the will of millenia onto new paths.⁵³⁵

⁵³³ "Wer mit Ungeheuern kämpft, mag zusehn, dass er nicht dabei zum Ungeheuer wird. Und wenn du lange in einen Abgrund blickst, blickt der Abgrund auch in dich hinein." Friedrich Nietzsche, *Beyond Good and Evil*. Aphorism 146. This is my translation.

⁵³⁴ "Der Irrsinn ist bei Einzelnen etwas Seltenes, – aber bei Gruppen, Parteien, Völkern, Zeiten die Regel." Friedrich Nietzsche. *Beyond Good and Evil*, aphorism 156.

⁵³⁵ "203. Wir, die wir eines andren Glaubens sind –, wir, denen die demokratische Bewegung nicht bloss als eine Verfalls-Form der politischen Organisation, sondern als Verfalls-, nämlich Verkleinerungs-Form des Menschen gilt, als seine Vermittelmässigung und Werth-Erniedrigung: wohin müssen wir mit unsren Hoffnungen greifen? – Nach neuen Philosophen, es bleibt keine Wahl; nach Geistern, stark und ursprünglich genug, um die Anstösse zu entgegengesetzten Werthschätzungen zu geben und 'ewige Werthe' umzuwerthen, umzukehren; nach Vorausgesandten, nach Menschen der Zukunft, welche in der

This avante-garde was a fundamentally ambivalent construct. On the plus side, it channeled the international progressivisms of the European semi-periphery of the 1880s – the span from the infrastructure investments and public health campaigns to the formation of trade unions and Social Democratic parties.⁵³⁶ On the minus side, it also channeled the industrial revanchisms of the semi-periphery of this time-period, namely the industrial racism, rabid militarism, and anti-Semitism of the Austrian, German and Russian empires. The disastrous potential of this revanchism was on prominent display in aphorism 208:

To relieve Europe of its greatest danger requires not only Indian wars and Asian entanglements, but internal downfalls, the explosion of the empire into small bodies and above all the introduction of parliamentary foolishness, including the obligation for everyone to read the newspaper at breakfast. I do not regard this as desirable: my preference lies on the opposite – I mean such an increase in the Russian threat that Europe must decide to become threatening, as it were, to receive a single will, through the means of a new caste ruling over Europe, a long, terrifying will of its own which could set goals over millennia; and thereby serve an end to the long-running comedy of its small-time politicking [Kleinstaaterei] as well as its dynastic and democratic majoritarian cheerleading [Vielwollerei: crowd-pleasing]. The time of small-time politics is over; already the next century brings the struggle for planetary rule – the compulsion of big-time politics [grossen Politik: world politics, geopolitics].⁵³⁷

It should be stressed that this was not a call for an expanded German empire, but the attempt to envision a United States of Europe capable of reorganizing its feuding dynasties into American-style magnates, and thereby remain competitive with the fast-growing Russian empire. But without an adequate grasp of the economic underpinnings of the American colossus or an understanding of the industrial consumerism of the core polities, Nietzsche's planetary aspirations

Gegenwart den Zwang und Knoten anknüpfen, der den Willen von Jahrtausenden auf neue Bahnen zwingt." Friedrich Nietzsche, *Beyond Good and Evil*. This is my translation.

⁵³⁶ This progressive moment was also visible in aphorism 317, "Possession possesses" ["Der Besitz besitzt"]. Friedrich Nietzsche, *Beyond Good and Evil*.

⁵³⁷ "208. Es dürften nicht nur indische Kriege und Verwicklungen in Asien dazu nöthig sein, damit Europa von seiner grössten Gefahr entlastet werde, sondern innere Umstürze, die Zersprengung des Reichs in kleine Körper und vor Allem die Einführung des parlamentarischen Blödsinns, hinzugerechnet die Verpflichtung für Jedermann, zum Frühstück seine Zeitung zu lesen. Ich sage dies nicht als Wünschender: mir würde das Entgegengesetzte eher nach dem Herzen sein, – ich meine eine solche Zunahme der Bedrohlichkeit Russlands, dass Europa sich entschliessen müsste, gleichermaassen bedrohlich zu werden, nämlich Einen Willen zu bekommen, durch das Mittel einer neuen über Europa herrschenden Kaste, einen langen furchtbaren eigenen Willen, der sich über Jahrtausende hin Ziele setzen könnte: – damit endlich die langgesponnene Komödie seiner Kleinstaaterei und ebenso seine dynastische wie demokratische Vielwollerei zu einem Abschluss käme. Die Zeit für kleine Politik ist vorbei: schon das nächste Jahrhundert bringt den Kampf um die Erd-Herrschaft, – den Zwang zur grossen Politik." Friedrich Nietzsche, *Beyond Good and Evil*. This is my translation.

recoiled inexorably back into the semi-peripheral provincialism he otherwise abhorred. Perhaps the most striking expression of this recoil was aphorism 292, which proclaimed the avante-garde philosopher as the industrial successor of the tablet-breaking iconoclast and the tablet-making prophet:

A philosopher: this is a person who constantly experiences, sees, hears, suspects, hopes and dreams extraordinary things; who is as struck by their kind of events and lightning-bolts as by their own thoughts from without, from above and below; who are themselves perhaps a thunderstorm, pregnant with new lightning-bolts; a destiny-filled [verhängnisvoller: fateful] person, around whom there is always a rumbling and humming and gaping and something uncanny. A philosopher: a being that, alas, often runs away from itself, is often afraid of itself – but is too curious not to keep coming back to itself...⁵³⁸

Nietzsche's lightning-garlanded philosopher was supposed to wield Nemo's chthonic powers of electrification, but delivered nothing more substantial than the provincial fireworks of the European semi-periphery's lecture circuit. Despite these limitations, Nietzsche's contributions to all later theories of national imperial audiences and industrial consumerism should not be underestimated. The unrealized potential of the industrial aphorism would germinate decades later, in the form of Freud's psychological case studies of the 1900s, Walter Benjamin's critical essays of the 1920s, and Theodor Adorno and Max Horkheimer's theory of the culture-industry in the 1940s.

⁵³⁸ "Ein Philosoph: das ist ein Mensch, der beständig ausserordentliche Dinge erlebt, sieht, hört, argwöhnt, hofft, träumt; der von seinen eignen Gedanken wie von Aussen her, wie von Oben und Unten her, als von seiner Art Ereignissen und Blitzschlägen getroffen wird; der selbst vielleicht ein Gewitter ist, welches mit neuen Blitzen schwanger geht; ein verhängnisvoller Mensch, um den herum es immer grollt und brummt und klafft und unheimlich zugeht. Ein Philosoph: ach, ein Wesen, das oft von sich davon läuft, oft vor sich Furcht hat, – aber zu neugierig ist, um nicht immer wieder zu sich zu kommen..." Friedrich Nietzsche, *Beyond Good and Evil*. Aphorism 292. This is my translation.

Chapter 10

Oceans of Contestation 1878-1904

For three quarters of a century (1805-1878), Britain's warships and merchant vessels glided over the world's oceans as if they were British lakes. Yet in the twenty-six years between 1878 and 1904, those lakes turned back into oceans of contestation. Belgium established its own maritime empire in the African Congo, France constructed the world's third largest navy and significantly expanded its African and Asian colonial holdings, the Italian, German and Japanese empires all established their own blue water navies and maritime empires, Dutch-controlled Indonesia became one of the world's premier oil exporters, while the United States built the world's second most powerful navy and created its own maritime empire in the Caribbean and the Pacific.⁵³⁹

In pragmatic terms, the British, Dutch, French, Ottoman, Portuguese, Russian and Spanish vessels which had dominated the Atlantic, the Baltic, the Caribbean and the Mediterranean seas for four centuries were suddenly confronted with the rise of Belgian, German, Italian and US maritime competition. At the same time, the British, French, Dutch, Portuguese, Spanish and Qing vessels which patrolled the Indian and Pacific oceans for two centuries had to contend with an onslaught of Japanese, Russian and US maritime competitors.⁵⁴⁰

Three key developments – economic, political, and cultural – characterized this dramatic intensification of maritime imperial competition. The economic development was the palpable waning of British economic, financial and technological supremacy due to the titanic economic expansion of the other four polities of the core (Belgium, France, the Netherlands and the United States), the less spectacular but no less significant industrialization of the forty polities of the semi-periphery, and the significant industrialization of urban enclaves within the periphery (most notably neocolonial Shanghai and colonial Kolkata). This economic expansion raised the stakes of imperial conflicts by making access to commodities such as bauxite, coal, copper ore, iron ore, oil, rubber and tin just as important for the outcome of imperial conflicts as the capacity to

⁵³⁹ "In 1901 the U.S. Navy had had 883 officers and 25,050 men; in 1909 the figures were 1,096 and 44,500, respectively, while over the same period annual naval appropriations rose from \$85 million to \$140 million.

...
...At the beginning of the century, the U.S. Navy had been sixth largest in the world; by 1909, it was second only to the Royal Navy." Stephen Howarth. *To Shining Sea: A History of the United States Navy 1775-1998*. Norman: University of Oklahoma Press, 1999 (288).

⁵⁴⁰ Prior to 1860, the British Royal Naval Academy was founded in 1733, the Dutch predecessor of the Royal Naval Institute was founded in 1785, the French empire founded its own Naval School in 1830, while Belgium established the Antwerp Maritime Academy in 1834. In the post-1860 period, the Russian empire established a modern Naval College in 1867, the German empire founded its Imperial Navy Academy in 1872, the Italian empire founded its Naval Academy in 1881, the US empire founded its Naval War College in 1884, while the Japanese empire founded its Naval Staff College in 1888.

produce breech-loading rifles, tube artillery and oil-fueled battleships.

The political development was the obsolescence of the constitutional monarchies, intermediary states, and dynastic empires with mercantile characteristics typical of the early 19th century, and the rise of the national imperial capitalisms and colonial empires of capital typical of the late 19th century. This transformation went hand in hand with the abolition of the last remaining systems of wageless labor in North America, South America and West Asia, and their replacement by systems of partly and fully waged labor. It also went hand in hand with a dramatic expansion of political participation, as partly and fully waged laborers constructed unions and political parties and fought for the rights of national and imperial citizenship, electoral suffrage, political representation, higher wages, the eight hour working day, public healthcare and public education.

This expansion of the political sphere compelled imperial elites to launch new types of industrial revanchism rooted in industrial racism and national imperial militarism. These revanchisms included the imperial white masculinities which took root in British-controlled Australia, Canada and New Zealand, as well as the settler-colonial white masculinity and neocolonial apartheid typical of the post-Civil War United States, the systems of colonial apartheid constructed in the Caribbean, African and Asian colonies by the empires of Belgium, Britain, France, Japan, Germany and the Netherlands. Other variants included the anti-Semitic pogroms,⁵⁴¹ compulsory policies of Russification, and the systematic repression of non-Russian languages and ethnicities instituted by the Russian empire,⁵⁴² the strident anti-Semitism and

⁵⁴¹ “Of all the non-Russian nationalities, the Jews suffered the most from this Great Russian chauvinist backlash during the last years of tsarism. The Jews were widely, if mistakenly, blamed for the assassination of Alexander II in 1881. They were the victims of hundreds of pogroms throughout Ukraine in that year. Contrary to the old and well-established myth, none of these pogroms – and there were to be many more (e.g. in Kishinev in 1903 and throughout the Empire in 1905-1906) – was ever instigated by the government. True, the authorities were slow to restore order and few pogromists were ever brought to trial. But this was not part of a conspiracy, just a reflection of the authorities' ineffectiveness and their general hostility to Jews. During the 1880s, at a time when both the German and the Austrian Empires were beginning to dismantle their legal restrictions on the Jews, the tsarist regime was continuing to add to its own cumbersome structure of institutionalized anti-Semitism. The last two tsars were vocal anti-Semites — both associated the Jews with the threats of urban modernity, capitalism and socialism — and it became fashionable in official circles to repeat their racial prejudices. Nicholas II, in particular, was increasingly inclined to see the anti-Jewish pogroms of his reign as an act of patriotism and loyalty by the 'good and simple Russian folk'. Indeed, at the time of the Beiliss Affair in 1911, when a Jew was dragged through the Kiev courts on trumped-up charges of ritual murder, Nicholas was clearly looking to use the widespread anti-Semitism within the population at large, drummed up by extremist nationalist groups such as his own beloved Union of the Russian People, as a banner to rally the masses against the opponents of his faltering regime.” Orlando Figes. *A People's Tragedy: The Russian Revolution, 1891-1924*. New York: Penguin Books, 1998 (92-93).

⁵⁴² One of the earliest literary expressions of Russo-imperial industrial racism was Dostoyevsky's diary entry in 1873: “Genuine, proper capital accumulates in a country only on the basis of the general well-being of its labor force; otherwise capital accumulates only in the hands of kulaks and Yids [derogatory term for Jews].” Fyodor Dostoyevsky. *A Writer's Diary*. Translated by Kenneth Lantz.

Slavophobia typical of the Austrian and German empires, and the anti-Korean and anti-Chinese xenophobia which erupted in the Japanese empire.

The cultural development was the international expansion of national imperial audiences and their corresponding industrial consumerisms. This expansion was most tangible in the core polities of Global Steam and especially in the United States, where it took the form of the lighting and electricity booms spawned by Edison's commercialization of the filament-based light bulb in 1879, the photographic boom ushered in by the first Kodak camera in 1888, the emergence of a concert-going public inaugurated by the construction of Carnegie Hall in 1893, and the emergence of a national advertising culture exemplified by Sears' first mail-order catalog in 1894. Perhaps its most spectacular expression was the invention of the Christmas shopping season, summarized Penne Restad as follows:

By late century, the definition of gift had broadened to include every category of practical housewares, novelty items, greeting cards, money, extravagant oddities, and simple mementos. There was, in a phrase, something for everyone. Beginning in the 1880s and lasting for many years, cheap and useless novelties known as "gimcracks" enjoyed a vogue. Those seeking more tasteful, but still relatively inexpensive, tokens of goodwill gave Prang Christmas cards. These could be framed, displayed on Christmas trees or on special racks, or made into wallpaper appropriate for home china cabinets. Others turned their attention to more prosaic and efficient wares; household work savers became acceptable gifts for mothers and wives. Parents, aunts, and other well-meaning elders could always rely on a gold piece or a \$2 bill as a gift intended to encourage a child's habit of saving.⁵⁴³

These national imperial audiences and industrial consumerisms also began to emerge in the most industrialized polities of the semi-periphery and a few enclaves of the periphery, but at a slower speed and on a smaller scale than in the core.

Britain's imperial elites responded to the waning of its hegemony by adopting three strategies of imperial retrenchment. These strategies were the economics of financial engagement, the politics of rapprochement, and the culture of international consumerism. While these strategies shored up Britain's hegemonic position in the short term vis-a-vis its leading competitors, they only exacerbated the fundamental contradictions of that hegemony over the long run.

Prime among these contradictions was the incapacity of the polities of the semi-periphery and periphery to match the economic productivity, the democratic political legitimacy, and plebian cultural appeal of the core polities. Britain's strategies of retrenchment did not just bolster the imperial expansionism of the core polities vis-a-vis those of their semi-peripheral competitors, they also intensified the imperial expansionism of the semi-periphery vis-a-vis the polities of the periphery.

"Dreams and Musings," 1873 (239). The kulaks – a term derived from the Russian word for fist – were the entrepreneurial farmers concentrated in colonized Estonia, Finland, Latvia, Lithuania, Poland and Ukraine, all of whom were targeted for cultural Russification after 1881.

⁵⁴³ Penne L. Restad. *Christmas in America: A History*. Oxford: Oxford University Press, 1995 (124).

The main economic expression of this polarization was core-led international financialization. Its two most salient features were the export of capital from Belgium, Britain, France and the Netherlands to the rest of the world (the United States was a net importer of capital from Britain until the late 1870s, and did not become a systemically significant exporter until after 1914), and the adoption of gold-backed currencies by the four non-British core polities as well as by a number of semi-peripheral empires and oligarchic republics.

Ivan Berend has summarized the social geography of these capital exports as follows:

Britain lent out 43% of the world's total capital exports of \$46 billion in 1913, France 20%, Germany 13%, and the small West European countries a combined 13-14%. Between 1870 and 1913, Britain exported 40% of its capital accumulation, France 25%, and Germany 10%. Prior to WW I, exported capital comprised 7-8% of Britain's GDP. Foreign investment in 1870 made up 7% of the world's aggregate GDP, and totaled 20% of a significantly expanded global GDP before the war.⁵⁴⁴

Irving Stone observed that between 1870 and 1913, British overseas investment grew almost twice as fast as British domestic per capita product.⁵⁴⁵ As this pool of investment grew in size and sophistication, so did the number of polities seeking a share of such. Whereas sixty-five polities sought funding in London's financial markets between 1865 and 1896, a total of one hundred and twenty sought such funding between 1910 and 1914.⁵⁴⁶

Despite this diversification, British capital exports remained highly concentrated in terms of their final destination. Stone estimated that 36% of total British capital exports between 1865 and 1913 were loans to foreign and colonial governments, while 42% were invested in overseas railroads⁵⁴⁷ (this latter was especially concentrated in North and South America).⁵⁴⁸

Britain's capital exports were as highly concentrated across time as they were in space. Most investment flows occurred during the five-year boom of 1867-1872, the twelve-year boom of 1877-1889, and the ten-year boom of 1893-1913. The first boom was dominated by large-scale borrowing by the governments of Russia, France and Germany, the latter two in order to finance the Franco-Prussian War. It collapsed when one hundred and fourteen American-based railroad companies and twenty South American and other governments went bankrupt during the

⁵⁴⁴ Ivan Berend. *An Economic History of Nineteenth Century Europe*. Cambridge: Cambridge University Press, 2013 (304).

⁵⁴⁵ "As a rough measure of the relative importance of foreign investment, capital called for overseas investment was two and a half times as great as capital called for domestic investment between 1870 and 1913. Measured by capital calls, annual overseas investment grew at nearly twice the rate of British gross domestic product measured at factor cost." Irving Stone, *The Global Export of Capital from Great Britain, 1865-1914: A Statistical Survey*. New York: St. Martin's Press, 1999 (6).

⁵⁴⁶ Irving Stone. *The Global Export of Capital from Great Britain, 1865-1914* (6).

⁵⁴⁷ Irving Stone, *The Global Export of Capital from Great Britain, 1865-1914* (10-11).

⁵⁴⁸ "Together, North and South America absorbed four-fifths of British overseas railway capital. British investment in overseas Railways amounted to £1.3 billion, or nearly 32 per cent of the half-century total." Irving Stone, *The Global Export of Capital from Great Britain, 1865-1914* (13).

1873 financial crisis and ensuing depression.

During the second boom, the US was the single largest destination of capital, followed by Australia, Argentina, India and Canada. The end of this boom was marked by the panic of 1890, wherein Argentina defaulted on its debt, Brazil's 1889-1892 financial bubble, the Encilhamento (the Portuguese word means "saddling up") collapsed, and the British Barings Bank had to be rescued.

The US remained the single largest destination of investment during the third boom, followed by Canada, South Africa, Argentina, Australia and India. The other major borrowers of this period included Brazil, Qing China and Chile.⁵⁴⁹ The collapse of this final boom was overshadowed by the much larger financial shock of WW I, which closed the London stock market for five months and triggered temporary liquidity and balance of payments crises in dozens of polities.

While British foreign investment generated lucrative profits for imperial elites and enabled London financial markets to reign supreme over those of Amsterdam, Brussels, New York and Paris, it unwittingly turbocharged the industrial and financial growth of the United States. Whereas British investors owned at least half of the world's tradable securities in 1860 and thus wholly dominated world finance, by 1910 their share had dwindled to just 24%. That same year, US investors owned 21% of all tradable securities, French investors owned 18%, German investors owned 16%, Russian investors owned 5%, and Japanese and Italian investors owned 2% apiece.⁵⁵⁰ The five core polities collectively owned almost two-thirds of all tradable securities by 1910, while the four empires of the semi-periphery owned only about one-quarter – yet another data-point underlining the increasing incapacity of the semi-periphery to keep pace with the core.

The geography of world capital exports partly overlapped – but did not precisely correlate – with the geography of the gold standard. While gold-backed currencies had somewhat greater access to liquidity via British and French capital markets (the United States was not a significant source of overseas capital until after 1914), they also exposed their corresponding economies to greater pressures during crises and downturns, due to the fact that silver is an inherently more abundant element in the earth's crust than gold. Indeed, there is no credible historical evidence that the adoption of the gold standard measurably improved the functioning of any given polity's capital markets.⁵⁵¹ Metzler provides this useful summary of how the post-1860 gold standard was structured:

Existing national gold standards operated like fractional-reserve banking – also developing rapidly at the same time – in that governments (or their central banks) issued an amount of convertible banknotes greater than the amount of gold they held in reserve. This difference between the amount of reserves held and the amount of banknotes (or deposits) created also constituted a form of seigniorage – free money for those who could make the arrangement work. Far greater than the direct profits that governments made

⁵⁴⁹ Irving Stone, *The Global Export of Capital from Great Britain, 1865-1914* (7-8).

⁵⁵⁰ Ranald C. Michie. *The London Stock Exchange: A History*. Oxford: Oxford University Press, 2001 (4).

⁵⁵¹ Ron Alquist and Benjamin Chabot (2011). "Did gold-standard adherence reduce sovereign capital costs?" *Journal of Monetary Economics* 58 (262–272).

out of this arrangement were the profits metropolitan banks could make by lending money (and creating deposit money) in newly incorporated monetary peripheries. Thus, what we may call 'first-order' money in this system – gold – was leveraged into a larger supply of gold-based national monies, such as the British pound – 'second-order' money. This second-order money in turn constituted the monetary base for banks that leveraged it into a much greater volume of money by making loans and creating bank deposits – 'third-order' money. In a like way, gold-exchange standards in peripheral countries pyramided gold-based foreign exchange money such as the British pound into third-order or fourth-order money.⁵⁵²

While Britain pegged the pound sterling to gold as early as 1816, the other four core polities relied primarily on silver during Global Cotton and did not permanently switch to gold until the 1870s. France led the way by adopting gold in 1873 (this was facilitated by the decision to boycott purchases of German silver in the wake of the debacle of 1871), the Netherlands followed suit in 1875, Belgium in 1878, and the United States in 1879.

By contrast, the adoption of gold by the polities of the semi-periphery and periphery was far more uneven and subject to frequent rollbacks. The semi-peripheral polities which operated on gold in 1870 included independent Argentina, British-controlled Australia and Canada, and the Portuguese and Spanish empires. Subsequently, Denmark adopted gold in 1872, Sweden-Norway and the German empire in 1873, Switzerland in 1878, Liberia in 1879, the Ottoman empire in 1881, the Italian empire in 1884, British-controlled Egypt in 1885, Greece in 1885, Uruguay in 1885, Brazil in 1888, Chile in 1895, the Japanese empire in 1897, the Russian empire in 1897, British-controlled India in 1898, Costa Rica in 1900, Ecuador in 1900, British-controlled Sri Lanka in 1901, the Austrian empire in 1902, Mexico in 1905, Norway in 1905, Brazil in 1906, and Thailand in 1908.⁵⁵³

However, a number of these polities were forced to return to silver or alternated between gold-backed and silver-backed currency regimes. Argentina adopted gold from 1870-1877, silver from 1877-1882, gold from 1883-1884, silver from 1885-1891, and gold after 1891. Brazil adopted gold from 1888-1889, silver from 1890-1906, and gold after 1907. Chile adopted gold from 1895-1898 and silver after 1899. Columbia adopted gold from 1870-1880, silver from 1886-1905, and gold after 1905. The Italian empire adopted gold from 1884-1893 and silver after 1893. Greece adopted gold in 1885 and silver after 1886. The Portuguese empire adopted gold from 1870-1891 and silver after 1891. The Spanish empire adopted gold from 1870-1883, and silver after 1883.⁵⁵⁴

⁵⁵² Mark Metzler, *The Lever of Empire* (37).

⁵⁵³ Steven Bryan, *The Gold Standard at the Turn of the Twentieth Century: Rising Powers, Global Money, and the Age of Empire*. New York: Columbia University Press, 2010 (35-36).

⁵⁵⁴ In addition to the gold standard, there was one other significant attempt at international monetary integration during Global Steam in the form of the Latin Currency Union, an international bimetallic standard initially adopted by the two core polities of Belgium and France and by the semi-peripheral polities of Italy and Switzerland in 1865. Under the system, 1 gold franc was set to equal 15.5 silver francs. Each LMU franc equaled 4.5 grams of silver, or 0.290322 gram of gold. The system was nominally adopted by Peru in 1865 (this was due to the fact that it had previously pegged its currency to the French franc in 1863), Greece in 1867, Colombia in 1871, Russian-colonized Finland in 1877, Serbia

All told, ten of the fourteen world empires of 1910 adopted gold between 1816 and 1902, including all five of the core polities. However, three of these ten – the semi-peripheral empires of Italy, Portugal and Spain – were compelled to return to silver. Of the forty polities of the semi-periphery, only eighteen were on the gold standard by 1914⁵⁵⁵ while twenty-two were on silver.

It should also be pointed out that the only polity of the periphery which adopted gold was Thailand, while the largest polity of the periphery, Qing China, remained on silver. This meant that the gold standard was adopted by more than one-third of the planetary population, while silver remained dominant among the other two-thirds.

Just as Britain's economic strategy of financial engagement generated short-term dividends at the price of long-term disruption, so too did its political strategy of rapprochement generate short-term consolidation at the price of long-term destabilization. One of the key drivers of this rapprochement was a renewed commitment to naval modernization.

Far from slowing down after constructing the world's most powerful fleet of steamships during the 1840s and 1850s,⁵⁵⁶ the British Admiralty expanded its technological remit during the 1860s to invest in everything from advanced gunnery technology to oil-powered battleships, and from signals intelligence to aircraft. British naval modernization was one of the two key preconditions of Marconi's commercialization of the radio, the other being Marconi's biographical status as the son of Annie Jameson, an heir of the Jameson family which had garnered a massive fortune in the distillery business:

Guglielmo Marconi did not invent radio all by himself. His contribution consisted in putting together pieces attributed to other men—Hertz's spark, Branly's coherer, Popov's antenna, Lodge's tuning circuit—thereby creating a device that not only sent and received electromagnetic waves, but used them to transmit information in the Morse code. Moreover—and in this he was unique among the many

in 1878, Bulgaria in 1880 and Venezuela in 1887. However, the system proved unworkable since nothing prevented polities from surreptitiously minting their own silver coins and exchanging them for gold.

⁵⁵⁵ These polities were Argentina, Australia, the Austrian empire, Brazil, Canada, Costa Rica, Denmark, Ecuador, the German empire, the Japanese empire, Liberia, Mexico, Norway, the Russian empire, Sweden, Switzerland, the Ottoman empire and Uruguay.

⁵⁵⁶ "During the 1840s and 1850s, the wooden ship-of-the-line, which had remained essentially unchanged for nearly two centuries, was superseded in the Royal Navy by a variant that was equipped with steam engines and a screw propeller as well as masts and sails. By 1860, the British battle fleet was for the most part composed of the new model screw ships-of-the-line. During the following decade, however, the pace of technological change quickened to the point that capital ships were rendered obsolete by new developments before they could be completed. The iron-clad battleship introduced in 1859, which took approximately three years to build, had gone through seven distinct evolutionary stages by 1864. The process of technological improvement continued, so that among the 30 vessels that were fit to take a place in the line of battle in 1870 there were to be found 3 types of steam engine, 4 screw arrangements, 16 schemes of armour protection, 18 hull models and no fewer than 20 scales of armament." Jon Sumidas. *In Defense of Naval Supremacy: Finance, Technology, and British Naval Policy, 1889-1914*. London: Routledge, 1989 (7).

inventors of radio technology—he was a skilled and energetic entrepreneur backed by a wealthy family and shrewd advisers.

Born of an Italian father and an Anglo-Irish mother, Marconi grew up and performed his first experiments in Italy. As soon as he thought his device was ready to demonstrate, he approached the Italian Ministry of Posts and Telegraphs, but was politely rebuffed. He and his mother then decided to move to London. Guglielmo, an avid sailor, recognized the potential of wireless for marine communications, and Great Britain was obviously where the customers were to be found. Furthermore, Annie Marconi, daughter of the Jamesons, purveyors of fine whiskeys, knew her son would receive the help he needed in starting his new enterprise.

...

...In the summer of 1898 he [Marconi] reported the Kingstown yacht races for the *Dublin Daily Express* and installed a wireless set on the royal yacht, which allowed Queen Victoria to communicate with the Prince of Wales. He demonstrated his equipment to the Italian and French navies; the French were noncommittal, but the Italians immediately ordered the Marconi apparatus. This bestirred the Admiralty to install Marconi sets on ships that were to participate in the Naval Maneuvers of 1899; the results were so impressive that the First Lord of the Admiralty, George Goschen, congratulated Marconi ‘on having brought his invention to its present state of perfection.’

Marconi’s first customer, it turned out, was the British War Office, then engaged in the Boer War, which shipped five Marconi sets to South Africa along with Marconi-trained operators. There storms created too much static and tore down the antennas, and the army finally handed over the sets to a Royal Navy squadron at Delagoa Bay, where they worked much better. This experience convinced the Admiralty of the value of wireless. In July 1900, after difficult negotiations in which Captain Jackson came to Marconi’s defense against the Treasury and the Post Office, the Admiralty ordered six coastal and twenty-six ship’s sets from Marconi at a cost of £3,200 apiece plus an annual royalty of £3,200. A year later, it ordered another fifty sets to equip all battleships and cruisers on the Home, Mediterranean, and China stations, and in 1903 it made Marconi’s its sole supplier of wireless equipment for the next eleven years.⁵⁵⁷

Britain also took care to safeguard its grip over the ocean depths, by exercising a near-monopoly on the technologies of submarine cable construction, maintenance and repair.⁵⁵⁸ British entrepreneurs, financial markets and technology were crucial in the expansion of these cable networks from 4400 kilometers in length in 1865 to 142,737 kilometers by 1880, and to 406,307 kilometers by 1903.⁵⁵⁹

In 1892, the British empire controlled 66.3% of these cables, the US empire 15.2%, the

⁵⁵⁷ Daniel R. Headrick, *The Invisible Weapon*, Chapter 7.

⁵⁵⁸ “The concentration of the industry meant that, of thirty cable ships in the world in 1896, twenty-four were British and only three were French, all of them small cable-repair ships purchased in Britain. Britain not only owned the ships but also the knowledge required to cut as well as repair cables. In the wars of the next century, it would give the British a powerful advantage over their enemies.” Daniel R. Headrick, *The Invisible Weapon*, Chapter 3.

⁵⁵⁹ Roland Wenzlhuemer, *Connecting the Nineteenth-Century World: The Telegraph and Globalization*. Cambridge: Cambridge University Press, 2013 (119).

French empire 8.9%, semi-peripheral Denmark 5.3%, and all other polities 3.7%.⁵⁶⁰ As late as 1908, Britain still controlled 56.2% of these cables, as compared to the US share of 19.5% and the French share of 4.9% (conversely, the share of control by all five core polities over the world's undersea cable network was 90.4% in 1892 and 85.1% by 1908).⁵⁶¹

This domination of undersea cable networks was complemented by the continued expansion of Britain's land-based telegraph network. This latter was brought under government control in 1870 and expanded significantly thereafter, especially in South Asia. Measured by wires per area and annual number of internal messages, the British network expanded significantly faster than the other three European core polities as well as almost all of the networks of the semi-peripheral republics and empires (the only exception was Meiji Japan, which tripled its message density vis-a-vis that of Britain in twenty years):

⁵⁶⁰ Daniel R. Headrick, *The Invisible Weapon: Telecommunications and International Politics 1851-1945*. Oxford: Oxford University Press, 1991, Chapter 3.

⁵⁶¹ Daniel R. Headrick, *The Invisible Weapon*, Chapter 6.

Figure 30. Per capita index of telegraph wires per area and internal messages 1870-1890 (British level = 100)⁵⁶²

Polity	Wires per area (% British level) 1870	Wires per area (% British level) 1900	Internal messages (% British level) 1880	Internal messages (% British level) 1900
France	62%	56%	57%	53%
Germany	57%	50%	33%	29%
Netherlands	86%	39%	63%	27%
Belgium	134%	66%	49%	25%
Switzerland	75%	30%	82%	24%
Japan	0%	17%	7%	16%
Austria-Hungary	39%	20%	18%	14%
Denmark	36%	20%	31%	14%
Italy	49%	26%	25%	14%
Sweden	10%	4%	20%	14%
Spain	15%	8%	13%	10%
Portugal	17%	11%	13%	9%
Russia	0.1%	1%	8%	6%
French Vietnam	0%	1%	3%	4%
British India	3%	4%	1%	1%

Thanks its naval investments, in 1914 the total tonnage of the British navy remained twice as large as any potential combination of its peers, British capital owned the majority of the world's merchant ships, British signals intelligence could access its competitors' undersea cable networks, while British coaling stations and naval bases controlled four out of five of the world's

⁵⁶² Wenzlhuemer, Ronald (2007). *The Development of Telegraphy, 1870-1900: A European Perspective on a World History Challenge*. *History Compass* 5:5 (1720-1742).

most important maritime chokepoints.⁵⁶³

Despite these successes, Britain's shrinking share of world industrial output, its inability to keep pace with the United States, and the planetary scale of the post-1878 maritime imperial expansion compelled the Admiralty to withdraw from smaller or less strategic oceans in order to concentrate its forces in the Atlantic and Mediterranean. This withdrawal was partly concealed by a spate of informal alliances with rival powers. These opportunistic alliances ranged from Britain's diplomatic acquiescence to the US conquest of Spanish-controlled Cuba, Puerto Rico and the Philippines in 1898, to formal treaties such as the 1894 Anglo-Japanese Treaty of Commerce and Navigation which ended British extraterritoriality vis-a-vis Japan and to the 1902 Anglo-Japanese Alliance designed to counterbalance the Russian empire's Pacific expansionism.

While these alliances and treaties safeguarded Britain's existing position, they also encouraged further expansionism by the counterparties involved. After 1898, the US would launch regular neocolonial interventions into the Caribbean and Central America, while the Japanese empire would proceed to colonize Taiwan in 1895, to launch a naval war against the Russian empire in 1904, and to colonize Korea in 1905. By 1904, the British empire had ceded de facto control of the Caribbean sea and the Philippine sea to the US navy, the Black sea to the Russian navy, and the south China sea to the Japanese navy.⁵⁶⁴

In the cultural sphere, Britain's strategy of international consumerism created the same pattern of short-term resurgence and long-term unraveling as its economic and political counterparts. While Britain exported capital and struck informal alliances with its erstwhile competitors, its domestic markets were flooded with imports of American sewing machines, Danish butter, French paintings and German toys. One of the iconic examples of this transfigured consumerism was the chocolate boom of Global Steam:

The explosive growth of a mass market for chocolate from the 1880s transformed world consumption more radically than at any other time in history. Chocolate progressed more rapidly than either coffee or tea in the West, and prices held up better (Othick 1976:77). World imports of cocoa beans grew nine times between 1870 and 1897, whereas those of tea doubled, and those of coffee rose only by about half (Crawford de Roberts 1980:48). Progress was especially marked in northwestern Europe and North America. Consumption of cocoa per head rose by a factor of nearly six in Britain between 1870 and 1910, while that of tea did not even double, and that of coffee actually fell by half (Othick 1976:78). Germans in 1907 accounted for more than five times the cocoa imports of 1886, although they still consumed six times more coffee than cocoa (Gordian: XIV, 1957-1958). A similar pattern of rapid rise from a low base characterized the United States between 1898 and 1908, though coffee imports were worth \$73 million in

⁵⁶³ These maritime chokepoints included the Cape of Good Hope, the strait of Gibraltar, the Malacca straits, and the Suez Canal. The US completed construction of the fifth, the Panama canal, in 1914.

⁵⁶⁴ "Whereas in 1893 British battleships nearly equaled in number the combined total of all the other great powers' battleships, in 1897 its advantage had disappeared; it now possessed approximately two-thirds of the total of the other great powers' battleships. In this transformed strategic environment, Great Britain reduced its strategic commitments in the Caribbean Sea and in Northeast Asia and redeployed much of its fleet to the Mediterranean." Robert S. Ross (2018). "Nationalism, Geopolitics, and Naval Expansionism: From the Nineteenth Century to the Rise of China." *Naval War College Review* 71:4 (19).

1905–6, compared to \$15 million for tea and only \$9 million for cocoa (Gordian: XV, 2938; SYB1907:449-450).

...

A survey in 1891 showed no trace of chocolate in the spending patterns of Belgian workers, but in 1910 it had become an established part of expenditure. A Belgian male laborer needed to work sixty hours to buy a half-kilo bar of chocolate in 1893, but only just over an hour in 1913 (Scholliers 1996:177-178). Consumption had penetrated to 'the lowest classes' in Germany by the 1900s.⁵⁶⁵

While British entrepreneurs such as Richard and George Cadbury played a key role in transforming cocoa from a luxury drink into a popular food, two other groups located outside of the core polities co-sponsored the chocolate boom. These groups were the chocolate entrepreneurs of semi-peripheral Switzerland, and the small-holder farmers of the west African colonial periphery.

The six most famous of these Swiss entrepreneurs included Daniel Peter, who invented milk chocolate in 1875; John Lindt, inventor of the mechanical smoothening of chocolate (a process called conching) in 1879;⁵⁶⁶ Henri Nestlé, a German-born pharmacist who emigrated to Switzerland in the late 1830s and whose condensed milk was the crucial ingredient in Peters' recipe; Rudolf Sprüngli, creator of Lindt & Sprüngli; Philippe Suchard, inventor of hazelnut chocolate and one the largest chocolate producers of the 1880s; and Jean Tobler, creator of the Toblerone brand and an innovator of chocolate tempering.⁵⁶⁷

Cocoa production in west Africa was not organized on the basis of indentured or wageless labor, but on the basis of small-holder family farms most comparable to the family-owned coffee farms of Costa Rica. These farms had a comparative advantage due to the fact that cocoa cultivation required a combination of copious rainfall, tropical temperatures, a partly shaded canopy, and sophisticated techniques of multi-year harvesting.

Thanks to the market opportunity created by the chocolate boom, tens of thousands of African farmers expanded the total acreage of cocoa under cultivation. World exports of cacao doubled from 24,019 tonnes in 1870 to 58,475 tonnes by 1890, and then quintupled to 279,867 tonnes by 1914. Whereas the three largest cocoa producers of 1890 were Ecuador (30.9%), British-controlled Trinidad and Tobago (16.7%), and Brazil (11.7%), the three largest producers in 1914 were British-controlled Ghana (19.2%), Ecuador (16.9%) and Brazil (14.6%). Most striking of all, the combined share of African producers in world cocoa exports rose from 3% in 1885 to 35.8% by 1914.⁵⁶⁸

There was a comparable dynamic of internationalization at work in the transformation of

⁵⁶⁵ William Gervase Clarence-Smith. *Cocoa and Chocolate, 1765-1914*. London: Routledge, 2009 (19).

⁵⁶⁶ Michael Coe and Sophie Coe. *The True History of Chocolate*. Thames & Hudson: London, 2013. Chapter 8.

⁵⁶⁷ Thomas Stephens. "The pioneers of Switzerland's 'Chocolate Revolution'." *Swissinfo.ch*. December 17, 2017.

https://www.swissinfo.ch/eng/cocoa-kings_the-pioneers-of-switzerland-s--chocolate-revolution-/43592024

⁵⁶⁸ William Gervase Clarence-Smith, *Cocoa and Chocolate, 1765-1914* (169-171).

coffee from a luxury commodity in 1860 into a plebian article of core consumerism by 1914. This plebianization was the combined result of mass consumer demand for processed foods in the core,⁵⁶⁹ the technological and organizational innovations of entrepreneurs located partly in the core and partly in the semi-periphery, and the agricultural innovations of coffee farmers located in the Central and South American semi-peripheries as well as the African and Asian peripheries.

While the first patent for instant coffee was filed in 1861 by Alphonse Allais in France and the first steam-based coffee percolator was patented by Hanson Goodrich in 1889 in the United States, three Italian inventors and entrepreneurs were responsible for the invention and popularization of espresso. The first working espresso machine was patented in 1884 by Angelo Moriondo, the first commercial espresso machine was invented by Luigi Bezerra in 1901, while commercial production of the devices took off after Desidero Pavoni purchased Bezerra's patent in 1905.⁵⁷⁰

Whereas the British-dominated consumer sensorium of the 1850s was circumscribed by Sheffield cutlery and Manchester textiles, the palette of the post-1878 consumerisms were far more internationalized. France contributed Bordeaux and Burgundy wines, Impressionist paintings, the bestsellers of Verne and Zola and elite cultural goods,⁵⁷¹ while the United States

⁵⁶⁹ "All evidence seems to agree on 1880-1900 as the period when once hard-to-find novelties entered the countryside in some quantity, and many peasants became accustomed to buying them in shops: sugar, coffee, rape-seed or olive oil, macaroni, vermicelli. Cafe au lait replaced morning soup, and women welcomed 'city ways' that meant less work. Sugar, extremely rare for a long time even on wealthy farms and only used as a remedy for sickness, became more common. In Loire the best-man had traditionally carried some sugar to sweeten the wine of the girl he escorted at a village wedding. The custom, known as *sucrer sa catlaliere*, lapsed in the mid-1880s as the sugar bowl began to be an expected table item on great occasions. But courting lads continued to carry a piece of sugar in their pockets and 'gallantly offered it' to their sweethearts.

Coffee, too, took its time to spread. In Correze coffee at weddings was still seemingly a novelty representing modern progress in the last years of the century, for the fact that it was served 'almost everywhere when the wedding is of some importance' was considered worthy of remark. Around 1902 the new Breton craze for coffee, especially among women, gave rise to a repertory of satirical songs and sayings that lasted into the 1920s, when coffee-drinking presumably came to be a matter of course. In Vivarais, until the First World War, a visitor's ritual gift was a package of coffee, a kilo of sugar, or a loaf of white bread. All these by then were in general use, but the persistent custom showed how recently they had still been a luxury – as in the case of the ninety-six-year-old man who was buried at Saint-Etienne-de-Lolm in the Gardon valley in 1903 and who to the very last had made his every meal solely of chestnuts." Eugen Weber. *Peasants Into Frenchmen: The Modernization of Rural France 1870-1914*. Stanford: Stanford University Press, 1976 (143).

⁵⁷⁰ Jonathan Morris. "A Short History of Espresso in Italy and the World." In: *100% Espresso Italiano*. Edited by Maurizio Cociancich. Trieste: Antorami, 2008 (4-32).

⁵⁷¹ "However, between 1870 and 1914, when Brazilian coffee and rubber and Argentine prairie production had reached spectacular proportions of world trade, although both countries were tightly knit into an English informal empire, they were presided over by elites who had been traveling to Paris as often as possible for at least two generations, who spoke and often published in French, who had read French texts in school and continued to admire French letters in maturity, and who often learned of English culture and

contributed Singer's iconic sewing machines, Heinz's ketchup (invented in 1876), Procter and Gamble's Ivory soap (trademarked in 1879), John Pemberton's Coca-cola (invented in 1886 and commercialized by Asa Griggs Candler in 1892) and John Harvey Kellogg's cornflakes (invented in 1894).⁵⁷² While Britain remained a significant site of consumer innovation – John Kemp Starley created the safety bicycle in 1885 while Scottish-born John Dunlop developed pneumatic tires in 1888 – it no longer monopolized the circuits of distribution and consumption.

This internationalized consumerism went hand in hand with the plebianization of technologies of extended cultural reproduction, triggering a series of overlapping media revolutions. While the most famous of these latter was the inauguration of cinema by the Lumière brothers in 1895, there were three others of significance during Global Steam. The first was the plebianization of black-and-white photography in the wake of George Eastman's 1888 Kodak camera.⁵⁷³ Eastman's device enabled consumers to mail photographic negatives to Eastman's company for processing, freeing photographers from the necessity of owning their own darkrooms.

The second was the invention of the gramophone or sound recording disc by US inventor Emil Berliner between 1887 and 1893, spawning an international market of recorded audio during the first decade of the 20th century.⁵⁷⁴ The third was the radio broadcasting revolution inaugurated by Reginald Fessenden in 1906, who conducted some of the first experimental AM (amplitude modulated) radio broadcasts in the United States.

These media revolutions profoundly restructured the experience of space and time for the approximately two-fifths of the planetary population who were fully and partly waged workers. Emily Orr has described how US department stores were spaces of mass photographability as well as zones of consumable ephemerality:

From the large scale of monumental architecture to the small scale of a hat stand, technologically adept

achievement through French mediation." Jeffrey D. Needell (1995). "Rio de Janeiro and Buenos Aires: Public Space and Public Consciousness in Fin-De-Siecle Latin America." *Comparative Studies in Society and History* 37:3 (521).

⁵⁷² Judith Coffin has noted that advertisements for sewing machines often paired them with bicycles, in one of the earliest forms of industrial-era synergistic marketing: "Sewing machines were frequently paired with bicycles in displays. The two emerged as mass-produced goods at the same time, required similar production techniques, and were often produced by the same firms. Sewing machines were frequently designed so that the treadle on the side of the machine suggested the wheel of a bicycle, or car. Advertising drawings placed women at whirring sewing machines as if they were driving a locomotive or riding a bicycle; sometimes their children were shown helping to pull the fabric through." Judith G. Coffin (1994). "Credit, Consumption, and Images of Women's Desires: Selling the Sewing Machine in Late Nineteenth-Century France." *French Historical Studies* 18:3 (767).

⁵⁷³ While color photography was first commercialized in 1907 by the Lumière brothers' Autochrome technology, the technology remained prohibitively expensive for most consumers until the Kodak company invented an affordable version of color film in 1935.

⁵⁷⁴ Roger Beardsley and Daniel Leech-Wilkinson. "A Brief History of Recording to ca. 1950." *Centre for the History and Analysis of Recorded Music*, 2009. https://charm.rhul.ac.uk/history/p20_4_1.html.

and artistically effective display was a primary objective of the architects, window dressers, shopfitters, and interior designers at work in principal department stores in this era. Architects and shopfitters prioritized display in their buildings and floorplan layouts with large show windows and customized casework. Window dressers and interior designers flattered wares with artistic arrangements, complete with fixtures and visual effects. Plate glass windows, cast iron storefronts, arc lighting, mannequins, rotating stands, and many other components came together in this making, and remaking, of the department store interior. This narrative of display features ephemera—photographs, postcards, pamphlets, and a wealth of other promotional and trade-specific material—in order to provide particular visual and critical access as to how display was created and promoted. These sources also point to the international network of people, objects, and ideas involved in display’s development.⁵⁷⁵

The goods these department stores sold were no longer markers of nobilitarian distinction, but rather Veblenesque status symbols of consumption accessible to anyone with sufficient funds.⁵⁷⁶ The opening chapter of Zola’s *Ladies Paradise* (1883) captured the irresistible appeal of this consumerism for France’s partly and fully waged laborers in the language of literary Impressionism:

An exhibition of silks, satins and velvets blossomed there in a supple and vibrant range, in the most delicate tones of flowers: at the summit, velvets of inky black, whites like curdled milk; a little lower, the satins, pinks, blues, with vivid intervals, fading into the paleness of an infinite tenderness; lower still, the silks, the whole rainbow scarf, pieces rolled like seashells, folded as if around a bent waist, brought to life by the skillful fingers of the employees; and between each motif, each colorful sentence of the display, ran a discreet accompaniment, a light, billowing cordon of a cream-colored scarf.

One of the landmark meditations on the cultural consequences of this consumerism was Henri Bergson’s *Time and Free Will* (1889). This latter argued that the citizens of modern industrial societies were neither isolated monads nor egoistic profit-maximizers, but were self-actuated subjects who steered through oceanic currents of sense-data, information and mass media like Nemo at the helm of the Nautilus:

⁵⁷⁵ Emily M. Orr. *Designing the Department Store: Display and Retail at the Turn of the Twentieth Century*. London: Bloomsbury, 2020. Introduction.

⁵⁷⁶ “Une exposition de soies, de satins et de velours, y épanouissait, dans une gamme souple et vibrante, les tons les plus délicats des fleurs: au sommet, les velours, d’un noir profond, d’un blanc de lait caillé; plus bas, les satins, les roses, les bleus, aux cassures vives, se décolorant en pâleurs d’une tendresse infinie; plus bas encore, les soies, toute l’écharpe de l’arc-en-ciel, des pièces retroussées en coques, plissées comme autour d’une taille qui se cambre, devenues vivantes sous les doigts savants des commis; et, entre chaque motif, entre chaque phrase colorée de l’étalage, courait un accompagnement discret, un léger cordon bouillonné de foulard crème.” Emil Zola. *The Ladies’ Paradise* [Au bonheur des dames], 1883. Chapter 1. This is my translation.

If, in proportion as we get away from the deeper strata of the self, our conscious states tend more and more to assume the form of a numerical multiplicity, and to spread out in a homogeneous space, it is just because these conscious states tend to become more and more lifeless, more and more impersonal. Hence we need not be surprised if only those ideas which least belong to us can be adequately expressed in words: only to these, as we shall see, does the associationist theory apply. External to one another, they keep up relations among themselves in which the inmost nature of each of them counts for nothing, relations which can therefore be classified. It may thus be said that they are associated by contiguity or for some logical reason. But if, digging below the surface of contact between the self and external objects, we penetrate into the depths of the organized and living intelligence, we shall witness the joining together or rather the blending of many ideas which, when once dissociated, seem to exclude one another as logically contradictory terms. The strangest dreams, in which two images overlies one another and show us at the same time two different persons, who yet make only one, will hardly give us an idea of the interweaving of concepts which goes on when we are awake. The imagination of the dreamer, cut off from the external world, imitates with mere images, and parodies in its own way, the process which constantly goes on with regard to ideas in the deeper regions of the intellectual life.⁵⁷⁷

It is worth emphasizing the historical distance between the imperial national crowds streaming through the 1851 Crystal Palace, and the national imperial shoppers described by Zola and theorized by Bergson. The approximately 6 million visitors to the Palace during its inaugural year were meant to be awed by the spectacle of Britain's imperial surplus, but were not actually expected to purchase anything. By contrast, the tens of millions of shoppers who perambulated across the floors of retail establishments such as Austria's Kastner & Öhler, America's Macy's, Belgium's Au Bon Marché, Britain's Harrods, France's Le Bon Marché, Germany's Tietz, the Netherlands' Vroom & Dreesmann and Japan's Mitsukoshi were encouraged by every aesthetic artifice and psychological stratagem known to humanity to do exactly that.

The rise of this shopper subjectivity was accompanied by the large-scale exodus of women from wageless forms of domestic and agrarian labor into the ranks of partly and fully waged employment. While this migration was most prominent in the five core polities, comparable migrations began to occur among the wealthier strata of the oligarchic republics and empires of the semi-periphery as well as among the oligarchic elites of peripheral urban centers such as Cairo, Kolkata and Shanghai.

The percentage of US women who were fully waged laborers rose from one in seven (14.8%) in 1870 to one in four (24%) by 1910, a transformation as profound and far-reaching as the abolition of wageless labor in 1865.⁵⁷⁸ The feminization of the proletariat was especially prominent in the US retail sector, where the number of saleswomen rose from less than 8,000 in 1880 to more than 58,000 in 1890.⁵⁷⁹ Conversely, the share of women who worked as household

⁵⁷⁷ Henri Bergson. *Time and Free Will: An Essay on the Immediate Data of Consciousness*. Translated by F. L. Pogson. New York: George Allen & Co., 1913 (136).

⁵⁷⁸ US Department of Commerce, Bureau of the Census. *Comparative Occupation Statistics for the United States. 1870-1940*. Washington, DC: Government Printing Office, 1943 (91-92, 99).

⁵⁷⁹ "The number of saleswomen jumped from under eight thousand in 1880 to over fifty-eight thousand in 1890 as department stores grew and as they increasingly accepted women behind the counter. To a much

servants or waitresses fell from 60.7% down to 25.5% during the same period, while the share of female professionals rose from 6.4% to 11.6%. In absolute terms, the total number of female professionals tripled from 0.9% of all US women of working age in 1870 to 2.8% by 1910.⁵⁸⁰

This increase in employment was accompanied by a significant expansion of educational opportunities, legal rights and personal autonomy for women. Whereas only two-fifths of all US colleges accepted female students in 1870, the number rose to three-fifths in 1890, and almost all public universities accepted female students by 1900.⁵⁸¹ No less significant was the decline in US fertility rates from 5.67 in 1860 to 3.64 in 1910, and the rise in the number of divorces per 1,000 marriages from 1.2 in 1860 to 4 by 1900, and to 8 by 1920.⁵⁸²

One of the most striking expressions of this feminization of the proletariat was the work of the three leading women Impressionist painters of the late 19th century, namely the French painters Marie Bracquemond and Berthe Morisot and the American painter Mary Cassatt. Their work was a critical response to the transformation of Impressionism from an obscure innovation into one of the best-selling styles of the international art market.

This mainstreaming was exemplified by Claude Monet's trajectory from penury in the 1860s to superstar status in the 1880s. After 1890, Monet focused on creating a series of paintings which were variations on a single iconic scene or location. This maximized sales while minimizing the time and expense of painting on location. Monet's post-1890 series included the thirty *Haystacks* paintings (1890-1891), the nine *Poplars* paintings (1891-1900), the thirty *Rouen Cathedral* paintings (1892-1894), the two hundred and fifty *Water Lilies* paintings (1896-1926), the eighteen *Morning on the Seine* paintings (1896-1897), the thirty-seven *Charing Cross* paintings (1899-1904), the nineteen *Houses of Parliament* paintings (1900-1901), and the thirty-seven *Venice* paintings (1908).⁵⁸³ Monet's fellow Impressionist Camille Pissaro replicated

smaller degree, women also participated in management. Some firms had significant percentages of women buyers. At Macy's, a relative of R. H. Macy's named Margaret Getchell rose from cashier to the position of general superintendent in the 1860s, retiring from the store in 1870 after the birth of her first child. At Macy's, women were also hired as floorwalkers, general supervisors, and buyers. By 1918, 42 percent of Macy's buying staff was female." Vicki Howard. *From Main Street to Mall: The Rise and Fall of the American Department Store*. Philadelphia: University of Pennsylvania Press, 2015 (48).

⁵⁸⁰ Joseph Hill. *Women in Gainful Occupations 1870 to 1920*. Washington, DC: Government Printing Office, 1929 (45).

⁵⁸¹ "The University of Michigan finally accepted women in 1870 when only two-fifths of the 582 colleges and universities in the United States admitted women. By 1890, the number of institutions of higher education had doubled and over three-fifths accepted female applicants. At the beginning of the twentieth century almost all publicly funded institutions of higher education took women, albeit many demanded higher entry qualifications from them to keep their numbers down, a practice that continued well past the middle of the twentieth century." S. J. Kleinberg. *Women in the United States, 1830-1945*. London: Macmillan Press, 1999 (156).

⁵⁸² "The number of divorces accelerated in the 1870s and 1880s and continued to climb through 1920, giving the United States the highest divorce rate in the world. In 1860 there were 1.2 divorces for every 1000 marriages, 4 divorces per 1000 marriages by 1900, and nearly 8 by 1920." S. J. Kleinberg. *Women in the United States, 1830-1945*. London: Macmillan Press, 1999 (141).

⁵⁸³ It should be noted that Monet created two other series of paintings prior to 1890, namely the twelve

this strategy to a certain extent by creating the fourteen paintings of *The Boulevard Montmartre* (1897) and the sixteen paintings of the *Tuileries Gardens* (1899).

By contrast, the greatest works of Bracquemond, Cassatt and Morisot depicted scenes of female partly waged laborers from the perspective of a vastly expanded and multi-gendered audience of fully waged laborers. Bracquemond's greatest work was *On the Terrace at Sèvres* (1880), Morisot's ten most realized works included *After Luncheon* (1881), *Eugene Manet with his Daughter at Bougival* (1881), *Woman Hanging Out the Wash* (1881), *Red-haired Girl Sitting on a Verandah* (1884), *Young Girl Boating* (1884), *Young Woman on a Couch* (1885), *Reading* (1888), *The Reclining Shepherdess* (1891), *Lucie Leon at the Piano* (1892), and *Young Girl with a Cat* (1892), while Mary Cassatt's three most successful works were *The Reader* (1878), *Woman with a Pearl Necklace* (1879), and *Portrait of Mlle. C. Lydia Cassatt* (1880).

What all of these works had in common was the depiction of female subjects who were not mere objects of the national imperial masculine gaze of the five core polities, but expressed their own autonomous subjectivity. For example, Bracquemond's *On the Terrace at Sèvres* consists of three shots melded into one. Bracquemond depicted herself on the left, while Bracquemond's younger sister is shown on the right and painter Henri Fantin-Latour in the middle. Crucially, Bracquemond gazes forthrightly at the viewer, while the other two figures gaze distractedly into the distance.

There is a comparable split of the visual field in Cassatt's *Woman with a Pearl Necklace*, where a theater-going woman is portrayed against a gigantic mirror which reflects the upper tier of seats in an elite Parisian theater. The viewers – namely, the audience members portrayed in the background – become the viewed, at the same moment that the seated woman, normally the object of the male gaze, is shown interacting with other theater-goers with charm and vivacity.

Morisot's paintings show the broadest variety of female subjects, ranging from the washerwoman of *Woman Hanging Out the Wash* to the daydreaming child of *Red-haired Girl Sitting on a Verandah*, whose background suggested a palimpsest of childhood memories. Morisot's child subjects are the painterly equivalent of the child protagonist of Lewis Carroll's *Alice in Wonderland*, and run the gamut from the reading girl of *Reading* to the clearly irritated child of *Lucie Leon at the Piano*, her outrage as comically overwrought as the deep blues, purples and blacks of the background.

One of the key preconditions for the emergence of all three artists was their location in the core polity of France, where the most heavily marketized culture-industries of Global Steam could interact with the most progressive forms of visual, literary and musical industrial modernism of that era. Morisot was the clearest example of this dynamic, due to her personal contacts and friendships with Edgar Degas, Édouard Manet (Morisot married Eugène, Manet's younger brother), Monet, Pierre-Auguste Renoir, Rodin and Mallarmé, among others.⁵⁸⁴

Saint-Lazare Station paintings (1877) and the six *Pyramides at Port-Coton*, *Rough Sea* paintings (1886).

⁵⁸⁴ “At the same time as her work became better known and more widely appreciated, Morisot began to occupy a prominent personal position in Parisian intellectual circles. The evenings she hosted at her home and the time she spent visiting studios, or attending readings and concerts, strengthened ties to old friends, including [Edgar] Degas, [Claude] Monet, Pierre Puvis de Chavannes, and [Auguste] Renoir, to younger painters such as Maurice Denis, and to artists in other fields, among them the sculptors Bartholomé and Auguste Rodin, Emmanuel Chabrier the composer, and writers Henri de Régnier and Stéphane Mallarmé,

The core artist whose innovations most closely approximated those of Bracquemond, Cassatt and Morisot was Vincent van Gogh. The Dutch painter's earliest works of note, most notably *Head of a Peasant Woman* (1885), *The Potato Eaters* (1885), *A Pair of Shoes* (1887), *Four Sunflowers*, *Lemons*, *Pears*, *Apples*, *Grapes and an Orange* (1887) and *Seascape at Saintes-Marie* (1888), transposed the somber color palette of classic Dutch painterly realism onto the dynamic brush-strokes of Monet's post-1873 industrial landscapes. The result was scintillating albeit uneven. Whereas *The Potato Eaters* successfully evoked the plebian life-world of the late 19th century Dutch agricultural household, *Seascape at Saintes-Marie* lacked sufficient color contrast to transcend its mass cultural model, the postcard snapshot of the sea.

Van Gogh's true breakthrough came in 1888 in the form of the seven classic works *Sower with the Setting Sun* (1888), *Portrait of Joseph Roulin* (1888), *Portrait of Lieutenant Milliet* (1888), *The Night-cafe* (1888), *Starry Night over the Rhône* (1888), *Fourteen Sunflowers* (1888) and *Cafe Terrace at Night* (1888). Instead of updating obsolete or archaic color palettes with dynamic brush-strokes, these works utilized the color palettes spawned by the post-1860 lighting revolution of electrical lighting, chromolithography and zincography as a means of emancipating the brush-stroke from the last constraints of visual industrial realism.

Van Gogh's single most important innovation was to replace the semi-industrial Impressionist brush-stroke, designed to evoke the specific luminosities of sunlight, moonlight, firelight or candlelight with industrialized color codes designed to evoke arc lights, electric lights, gas lights and incandescent lights. The price the painterly industrial modernisms had to pay for this transformation of the visual field was the downgrading of the brush-stroke to an archaic means of representation. The skilled craft-labor which powered the painterly realisms of the Dutch Golden Age – the capacity to document a scene with photographic precision, everywhere from the appraising glance of the Dutch merchant charged with buying cheap and selling dear to the visual inspection of wageless laborers on the auction-block conducted by the North and South American plantocrats – was replaced by the skilled industrial labor necessary to create the most enticing and alluring combination of color palettes possible.

After 1888, painting was no longer about pleasing the eyes of nobilest elites or wealthy merchants, but about retailing that which was most eye-catching to an audience of international consumers. Van Gogh's breakthrough works bombarded viewers with chunks of yellow, orange, red, blue and green viewability in the same way Debussy's *Prelude to the Afternoon of a Faun* converted Wagner's clangorous phantasmagoria into orchestrated listenability, or the way Twain's *Huckleberry Finn* transformed the regional dialects of the fully waged white laborers and African American wageless laborers of the Mississippi river valley into English-speaking readability.

Conversely, the price all three artists had to pay for this achievement was the accelerated

especially, whom she placed as high among poets as she placed Edouard Manet among painters. Morisot and Mallarmé respected and trusted each other, enough to withstand the occasional jab. She invited him to read his eulogy to Villiers de l'Isle-Adams in her home in 1890, but at another moment could chide him: 'I'd like to add my admiration to the public's, despite your being so disdainful of women.' After her death, he wrote the essay for her retrospective catalogue and called her 'the friendly Medusa'." Anne Higonnet. *Berthe Morisot's Images of Women*. Cambridge: Harvard University Press, 1992 (12).

obsolescence of their corresponding aesthetic material. Color palettes began to gobble up the brush-stroke in painting, orchestration began to devour the tonality of the First Viennese School, while commercialized slang began to obliterate rural dialects in the literary sphere.

The diminution of the Impressionist brush-stroke in Van Gogh intensified in the four leading works of 1889 (*Irises*, *The Starry Night*, *Self-portrait with Bandaged Ear*, and *A Cornfield with Cypresses*) and culminated in the six classic works of 1890 (*Portrait of Doctor Paul Gachet*, *Prisoners' Round*, *Church at Auvers*, *Branches of an Almond Tree in Blossom*, *Wheatfield with Cypresses*, *Road with Cypresses* and *Wheatfield with Crows*). All ten works anticipated some of the major themes of international visual modernism, e.g. the bleak industrial enclosure of *Prisoners' Round*, where momentary glimpses of the inmates' faces shuffling in a ring formed a shocking contrast to the facelessness of the supervising officers. Conversely, *Branches of an Almond Tree in Blossom* refunctioned the graphical print depictions of cherry blossoms popularized by japonisme to create the effect of blossoms bursting like biological fireworks against a limitless sky.

Road with Cypresses and *Wheatfield with Crows* were especially significant due to their proto-cubist technique of replacing the photographic perspective of Impressionism with industrial slabs of color. In particular, *Road with Cypresses* separated its visual field into two halves by means of the vertical slice of a cypress tree. To appreciate the scandal of this move, it should be remembered that the late 19th century European empires were festooned with outsized vertical monuments of all kinds, ranging from the statues of dynastic houses to reproductions of Roman pillars.

By contrast, the painting depicted a plebian city dweller and farmer in its lower right corner, and just above them an ordinary horse and buggy carrying a man and a woman. To its immediate right, the painting depicted a home which was no longer the peasant cottage but not quite the residence of the suburban commuter. The upper left quarter of the painting is dominated by a stylized sun, accompanied by a smaller star hovering beneath it, while the upper right quarter depicted a stylized crescent moon or partial lunar eclipse.

While it is tempting to read this painting in terms of geopolitical space, i.e. the sun as the British hegemon, its lesser companion as the second-rank Dutch empire, and the crescent as the Dutch colony of Indonesia, whose population was majority Islamic (the crescent and star was widely understood as the emblem of the Ottoman empire), the much more credible and satisfying explanation is that these heavenly bodies were meant to represent different times of the day. That is, the sun signified the day, the crescent signified the night, while the sun's lesser companion signified the evening star of dusk or the morning star of dawn.

Whereas *Road with Cypresses* organized its visual field in terms of a scandalous verticality, *Wheatfield with Crows* tantalized viewers with a scandalous horizontality. Most of the golden slabs of color denoting the field of wheat are tilted to point to the right, whereas the blue slabs of color denoting the sky are tilted to point to the left. What mediates between these opposing directions is a flock of crows, denoted by zigzag slabs of black which cluster most thickly on the far right hand side of the painting. The panorama visually flows from left to right, something subtly reconfirmed by two dirt roads whose perspective-based vanishing points are located on the far left and the center right of the painting – the road on the left follows a roughly straight line, whereas the one on the right curves slightly.

The visual innovations of Morisot and Van Gogh had their closest literary counterpart in Rimbaud's lyrical prose collection *Illuminations* (1886). This latter depicted a nameless international port city overflowing with industrial detritus and comprised of bits and pieces of Venice, Cairo, Liverpool and Marseilles:

Skies of grey crystal. A strange pattern of bridges, these straight, those bulging, others falling at oblique angles to the first, and these figures are renewed in the other illuminated circuits of the canal, but all so long and light that the banks, laden with domes, ebb and diminish. Several of these bridges are still laden with hovels. Others support masts, signage, frail parapets. Minor chords criss-cross, and ropes rise, spinning, from the shore. You can distinguish a red vest, perhaps other clothes and musical instruments. Are they popular tunes, bits of stately music, remnants of national anthems? The water is grey and blue, wide as an arm of the sea. – A white ray, falling from the top of the sky, annihilates this comedy.⁵⁸⁵

At its height, Rimbaud's text crackled like the lightning-bolt between the antipodes of lyrical Symbolism ("On the slopes of flower harvests as big as our weapons and our cups, roaring")⁵⁸⁶ and prose Naturalism ("The wall in front of the watcher is a psychological succession of cuttings of friezes, atmospheric bands and geological incident").⁵⁸⁷

To be sure, this lightning-bolt was as aesthetically ambivalent as the politics of Rimbaud's complicity with French imperialism. This complicity was especially pronounced in the moments when Rimbaud invoked the pathos of France's status as a follower empire, forever doomed to lag behind the British hegemon ("Are they popular tunes, bits of stately music, remnants of national anthems?"), only to dispel any lingering doubts about the credibility of

⁵⁸⁵ "Des ciels gris de cristal. Un bizarre dessin de ponts, ceux-ci droits, ceux-là bombés, d'autres descendant ou obliquant en angles sur les premiers, et ces figures se renouvelant dans les autres circuits éclairés du canal, mais tous tellement longs et légers que les rives, chargées de dômes[,] s'abaissent et s'amoindrissent. Quelques-uns de ces ponts sont encore chargés de masures. D'autres soutiennent des mâts, des signaux, de frêles parapets. Des accords mineurs se croisent, et filent, des cordes montent des berges. On distingue une veste rouge, peut-être d'autres costumes et des instruments de musique. Sont-ce des airs populaires, des bouts de concerts seigneuriaux, des restants d'hymnes publics? L'eau est grise et bleue, large comme un bras de mer.—Un rayon blanc, tombant du haut du ciel, anéantit cette comédie." Arthur Rimbaud, *Illuminations. Bridges*. This is my translation.

⁵⁸⁶ "Sur les versants des moissons de fleurs grandes comme nos armes et nos coupes, mugissent." Arthur Rimbaud, *Illuminations. Cities I*. This is my translation.

⁵⁸⁷ "The lightning returns to the tree of the building. From the two extremities of the room, regardless of decor, harmonic elevations converge. The wall in front of the watcher is a psychological succession of cuttings of friezes, atmospheric bands and geological incidents. – Intense and rapid dream of sentimental groups with beings of every character among every appearance.." ["L'éclairage revient à l'arbre de bâtisse. Des deux extrémités de la salle, décors quelconques, des élévations harmoniques se joignent. La muraille en face du veilleur est une succession psychologique de coupes de frises, de bandes atmosphériques et d'accidences géologiques.—Rêve intense et rapide de groupes sentimentaux avec des êtres de tous les caractères parmi toutes les apparences."] Arthur Rimbaud, *Illuminations. Vigils II*. This is my translation.

French imperialism by means of a compensatory whiteness (“A white ray, falling from the top of the sky, annihilates this comedy”).

The root of the contradiction was that the potentially anti-imperial solidarity of the partly and fully waged laborers of the core polities clashed with their economic complicity as beneficiaries of the imperial economic surplus, their political complicity as soldiers of imperial armies and agents of colonial administrations, and their cultural complicity as the consumers of imperial culture-industries.

These contradictions were hardly unique to Rimbaud, but were among the most striking features of the core industrial modernisms of the 1878-1904 period. For example, the retail exploitation denounced by Zola’s *Ladies Paradise* ended up serving as the mere backdrop of the romance between the virtuous protagonist, Denise Baudu, and the virtue-seeking entrepreneur Octave Mouret, in much the same way that the class conflicts between French miners and mine-owners portrayed by *Germinal* (1885) were shunted aside by the melodramatic showdown between the youthful protagonist Étienne Lantier, his romantic interest, Catherine Maheu, and the villainous Chaval.

To be sure, some of the most innovative literary works of the core responded to this dilemma by grasping imperial complicity as a species of narrative material in its own right. This tendency was most pronounced in the genres which were the purest products of the core culture-industries, namely science fiction, horror fiction, and detective fiction.

In the realm of science fiction, the classic examples included Robert Louis Stephenson’s *The Strange Case of Dr. Jekyll and Mr. Hyde* (1886) and Mark Twain’s *A Connecticut Yankee in King Arthur’s Court* (1889). Whereas Stephenson’s tale depicted the outbreak of a civil war between the British imperial ego and its colonial id from a partly complicit Scottish vantage-point,⁵⁸⁸ Twain’s novel excoriated the plutocratic revanchism which dominated US politics between the end of Reconstruction in 1878 and the electoral insurgency of Populism in 1892 from the complicit location of American white imperial masculinity.⁵⁸⁹

⁵⁸⁸ Stephenson’s tale critiqued Britain’s post-1860 industrial racism by refusing to depict Hyde in the racialized terms of the colonial Other. Instead, Hyde turned out to be the active agent of imperial domination concealed by Jekyll’s humanitarian veneer: “With every day, and from both sides of my intelligence, the moral and the intellectual, I thus drew steadily nearer to that truth, by whose partial discovery I have been doomed to such a dreadful shipwreck: that man is not truly one, but truly two. I say two, because the state of my own knowledge does not pass beyond that point. Others will follow, others will outstrip me on the same lines; and I hazard the guess that man will be ultimately known for a mere polity of multifarious, incongruous and independent denizens.” Robert Louis Stephenson. *The Strange Case of Dr. Jekyll and Mr. Hyde*. 1886. Chapter 10.

⁵⁸⁹ The blueprint of this white imperial masculinity can be traced back to Twain’s own travelog, *The Innocents Abroad* (1869), a comedic account of a real-life steamship expedition undertaken by Twain and other American citizens to Europe and the Mediterranean in 1867. The text contained a significant undercurrent of envy of the maritime European empires, combined with overtly Orientalist depictions of the Middle East. Thanks to the combination of Twain’s prodigious talent, a savvy marketing campaign, and the innovation of the book subscription model, the publication became Twain’s single best-selling text during his lifetime. For the details of this marketing campaign and subscription model, see: Leon T. Dickinson (1947). “Marketing a Best Seller: Mark Twain’s *Innocents Abroad*.” *The Papers of the*

Perhaps the single most influential example of complicity-turned-material in science fiction was H.G. Wells' *The Time Machine* (1895). This latter harshly critiqued Britain's past colonial conquests of the Americas, Africa and Asia from the projected wreckage of a future post-hegemonic England.⁵⁹⁰ It also established many of the core genres of post-1860 science fiction, namely time travel, technologically-assisted biological evolution, and the post-apocalyptic thriller. Wells even managed to anticipate *Half Life*'s time-traveling protagonist, particle physicist Gordon Freeman, who wielded a proletarian crowbar identical to that of Wells' protagonist.⁵⁹¹

In the realm of detective fiction, the four novels and fifty-six short stories comprising Arthur Conan Doyle's *Sherlock Holmes* literary franchise (1887-1927), explored the contradictions of imperial complicity in the form of imperial overstretch. The first and least successful of these novels, *A Study in Scarlet* (1887), depicted Watson as the wounded veteran of one of Britain's failed attempts to occupy Afghanistan, showed Holmes being bamboozled by an American actress, and almost derailed in a failed pastiche of the American western.

The series hit its stride in Doyle's sequel, *The Sign of Four* (1890), which resolved the problem of imperial overstretch by recourse to proletarian internationalism. This time around, Watson was the unimaginative but steadfast co-detective while Holmes was the superlative theorist of London's globe-spanning transportation, communication and logistical networks – a.k.a. the popularization of the figures of Karl Marx and Friedrich Engels in the vocabulary of international detective fiction. Put bluntly, Watson and Holmes tracked down criminals in the capital of the British empire where Friedrich Engels and Karl Marx tracked down the criminality of British imperial capital.⁵⁹²

Bibliographical Society of America 41:2 (107-122).

⁵⁹⁰ "Conceive the tale of London which a negro, fresh from Central Africa, would take back to his tribe! What would he know of railway companies, of social movements, of telephone and telegraph wires, of the Parcels Delivery Company, and postal orders and the like? Yet we, at least, should be willing enough to explain these things to him! And even of what he knew, how much could he make his untravelled friend either apprehend or believe? Then, think how narrow the gap between a negro and a white man of our own times, and how wide the interval between myself and these of the Golden Age!" H.G. Wells. *The Time Machine*. 1895. Chapter 5.

⁵⁹¹ "As yet my iron crowbar was the most helpful thing I had chanced upon. Nevertheless I left that gallery greatly elated.

I cannot tell you all the story of that long afternoon. It would require a great effort of memory to recall my explorations in at all the proper order. I remember a long gallery of rusting stands of arms, and how I hesitated between my crowbar and a hatchet or a sword. I could not carry both, however, and my bar of iron promised best against the bronze gates. There were numbers of guns, pistols, and rifles. The most were masses of rust, but many were of some new metal, and still fairly sound. But any cartridges or powder there may once have been had rotted into dust. One corner I saw was charred and shattered; perhaps, I thought, by an explosion among the specimens. In another place was a vast array of idols – Polynesian, Mexican, Grecian, Phoenician, every country on earth I should think. And here, yielding to an irresistible impulse, I wrote my name upon the nose of a steatite monster from South America that particularly took my fancy." H.G. Wells, *The Time Machine*. Chapter 8.

⁵⁹² Doyle was a lifelong Liberal Unionist and remained unaware of the underlying radicality of his literary

An analogous radicalization occurred in the field of horror fiction, where the internally split French bourgeois subjectivity depicted by Guy de Maupassant's short story *The Horla* (1887) and the externally split politics of British visual representation showcased by Oscar Wilde's *The Picture of Dorian Gray* (1891) culminated in Bram Stoker's *Dracula* (1897). This latter leveraged rewrote cultural forms as diverse as the Gothic horror novel, the rural picaresque, the Balkans travelog, the epistolary novel, the newspaper feuilleton, the detective story, and the telegram into one of the most scathing (albeit involuted) critiques of gold-backed imperialism of all time.⁵⁹³

Stoker's key innovation was to cast Dracula not as an Asiatic despot on the model of the Qing emperor or an industrial dynast on the model of Napoleon III, but as a proto-cinematic villain.⁵⁹⁴ Dracula's drain of blood from the rural inhabitants of Transylvania evoked the horror of the colonial drain of exchange-value from the partly waged laborers of the global semi-periphery and periphery (plantation workers, miners, coolies, lascars, indentured workers, the indigenous soldiers of colonial armies and so forth). Conversely, Dracula's drain of blood from Lucy Westenra and Mina Harker evoked the horror of the neocolonial drain of exchange-value from the fully waged laborers of the core polities.

Dracula was the first fully-realized embodiment of British hegemonic capital in literary history, who wielded the chthonic and terrifying powers of the British investment banker. Dracula's castle was the Gothic version of the London stock exchange, Dracula's coffins were ciphers of British capital exports, while Dracula's corporeal being did not bleed magical ichor but rather gold and bank-notes.⁵⁹⁵ On the other hand, the band of vampire hunters were the

creation. The audience understood more than the author, which helps to explain why the Sherlock Holmes franchise continues to flourish in cinema, television and interactive media.

⁵⁹³ From 1878 until 1905, Stoker served as the business agent, producer and manager of Henry Irving, one of the most prominent and commercially successful actors of the late Victorian and early Edwardian theater. This theatrical background enabled Stoker to transform *Dracula*'s melange of journal entries, personal diaries, newspaper articles, telegrams and phonographic transcripts into a tightly-constructed three act play. The first act (chapters 1 – 9) concluded with Lucy's demise, the second act (chapters 10 – 18) concluded with the resolution by the main characters to hunt down Dracula, while the third act (chapters 19 – 27) concluded with the final expedition to defeat Dracula.

⁵⁹⁴ Jennifer Wicke came closest to this realization, albeit from the standpoint of a predatory consumerism rather than the novel's explicit description of a drain on production: "The reading of the mass of typewriting is the labor of consumption the text requires of us. This mass is vampiric typewriting, this vampire is mass typewriting, this typewriting is mass vampirism. Under the sign of modernity we are vampires at a banquet of ourselves, we are Dracula and Madame Mina, the one who bites and the one who is bitten, the one who types and the one who is typewritten." Jennifer Wicke (1992). "Vampiric Typewriting: Dracula and Its Media." *ELH* 59:2 (492).

⁵⁹⁵ "Harker evidently meant to try the matter, for he had ready his great Kukri knife and made a fierce and sudden cut at him [Dracula]. The blow was a powerful one. Only the diabolical quickness of the Count's leap back saved him. A second less and the trenchant blade had shorn through his coat, making a wide gap whence a bundle of bank notes and a stream of gold fell out." Bram Stoker, *Dracula*. Chapter 23. It should be noted that the kukri was the characteristic knife of the gorkhas, British colonial soldiers recruited from what is today Nepal and northeastern India. The flow of gold and bank notes thus overtly

narrative depiction of the Internationale which Marx and Engels had struggled to create.

The initial roster of this Internationale consisted of the Dutch doctor and lawyer Van Helsing, the British lawyer Jonathan Harker, the British doctor John Seward, the British aristocrat Arthur Holmwood, and the American adventurer Quincey Morris. The definitive roster included the crucial character of Mina Harker, who evolved from a partly waged worker (Jonathan's dutiful housewife) at the beginning of the novel into a fully waged worker who orchestrates Dracula's demise at the end.⁵⁹⁶ The following passage marked the turning-point when Mina acquired the status of an independent producer and classifier of documents:

...By this time my mind was made up that the diary of a doctor who attended Lucy might have something to add to the sum of our knowledge of that terrible Being, and I said boldly, 'Then, Dr. Seward, you had better let me copy it out for you on my typewriter.' He grew to a positively deathly pallor as he said:—

'No! No! No! For all the world. I wouldn't let you know that terrible story!'

Then it was terrible. My intuition was right! For a moment, I thought, and as my eyes ranged the room, unconsciously looking for something or some opportunity to aid me, they lit on a great batch of typewriting on the table. His eyes caught the look in mine, and, without his thinking, followed their direction. As they saw the parcel he realized my meaning.

'You do not know me,' I said. 'When you have read those papers — my own diary and my husband's also, which I have typed — you will know me better. I have not faltered in giving every thought of my own heart in this cause. But, of course, you do not know me — yet, and I must not expect you to trust me so far.'

He is certainly a man of noble nature; poor dear Lucy was right about him. He stood up and opened a large drawer, in which were arranged in order a number of hollow cylinders of metal covered with dark wax, and said:—

'You are quite right. I did not trust you because I did not know you. But I know you now, and let me say that I should have known you long ago. I know that Lucy told you of me; she told me of you too. May I make the only atonement in my power? Take the cylinders and hear them — the first half-dozen of them are personal to me, and they will not horrify you; then you will know me better. Dinner will by then be ready. In the meantime I shall read over some of these documents, and shall be better able to understand certain things.' He carried the phonograph himself up to my sitting-room and adjusted it for me. Now I shall learn something pleasant, I am sure; for it will tell me the other side of a true love

symbolized Britain's colonial drain from South Asia.

⁵⁹⁶ This insight can be credited to Eric Kwan-Wai Yu: "What distinguishes Mina from other vampiric women is her unequalled intellectual power, accompanied by ascetic practice and reliant on modern technology..."

...Weirdly framed and haunted by deep fears, Mina's intellectual labor links her as closely to the male 'professionals' as to Dracula, the 'monstrous Other' that arguably begets in her a surprising 'Protestant work ethic.' What seems on the surface to be an affirmation of Enlightenment reason and scientific progressivism in the plot, upon closer scrutiny, hints that Mina's 'man-brain' is 'vampiric,' that is, unnatural, perverse, and ultimately demonic. Stoker's attitudes toward the 'New Woman' and modernity thus seem to be deeply ambivalent." Eric Kwan-Wai Yu (2006). "Productive Fear: Labor, Sexuality, and Mimicry in Bram Stoker's *Dracula*." *Texas Studies in Literature and Language* 48:2 (158-159).

episode of which I know one side already...⁵⁹⁷

The final piece of the puzzle was the scene of Mina's consumption of Dracula's "blood", a.k.a. access to the British imperial surplus. This transformed her into part vampire, granting her an intermittent telepathic link with Dracula. The result was a white-knuckle contest of wills between the vampire and the putative vampiree which anticipated all future struggles over broadcasting media reception.⁵⁹⁸ This link enabled the partly-vampiric Mina to guide the vampire hunters unerringly to Dracula's route, she wrote the crucial memorandum which enabled the final assault on Dracula's caravan, while her presence gave Van Helsing the strength necessary to defeat the spell of Dracula's three female vampires.

The conclusion of the novel delivered one of the most extraordinary geopolitical allegories of Global Steam, a prescient fable of decolonization enabled in part by Stoker's own Irish background.⁵⁹⁹ Simply, the extirpation of the female vampires by Mina and Van Helsing foreshadowed the class struggle of the partly waged workers of the semi-periphery and periphery against the fourteen world empires, precisely where Dracula's final destruction at the hands of Jonathan Harker, Holmwood, Morris, and Seward anticipated the class struggle of the fully waged workers of the core polities against British hegemonic capital.⁶⁰⁰

⁵⁹⁷ Bram Stoker. *Dracula*. 1897. Chapter 17.

⁵⁹⁸ This transformation was conveyed by means of a thinly-disguised same-sex seduction scene: "I [Seward] told him [Jonathan] exactly what had happened, and he listened with seeming impassiveness; but his nostrils twitched and his eyes blazed as I told how the ruthless hands of the Count had held his wife in that terrible and horrid position, with her mouth to the open wound in his breast. It interested me, even at that moment, to see, that, whilst the face of white set passion worked convulsively over the bowed head, the hands tenderly and lovingly stroked the ruffled hair." Bram Stoker, *Dracula*. Chapter 21. A few pages later, Mina's account of Dracula's dialogue made the same-sex nature of the sexual encounter even more explicit: "'And you [i.e. Mina], their best beloved one, are now to me [i.e. Dracula], flesh of my flesh; blood of my blood; kin of my kin, my bountiful wine-press for a while; and shall be later on my companion and my helper. You shall be avenged in turn; for not one of them but shall minister to your needs. But as yet you are to be punished for what you have done. You have aided in thwarting me; now you shall come to my call. When my brain says 'Come!' to you, you shall cross land or sea to do my bidding; and to that end this!' With that he pulled open his shirt, and with his long sharp nails opened a vein in his breast.'" Bram Stoker, *Dracula*. Chapter 21. Stoker's voluminous correspondence has shown he was a closeted gay man who found an occupational refuge in the world of theater, and personal inspiration in the poetry of Walt Whitman. For further details, see: Meredith Hindley (2012). "When Bram Met Walt." *Humanities* 33:6.

<https://www.neh.gov/humanities/2012/novemberdecember/feature/when-bram-met-walt>.

⁵⁹⁹ Stoker was raised as a Protestant in Dublin, Ireland, and supported the Liberal Party as well as peaceful home rule for Ireland. The fact that the vampire hunters of his novel employed the paraphernalia of Dutch Catholicism to ward off the undead was an occultation of Stoker's confessional identity comparable to Stoker's occultation of his sexual identity.

⁶⁰⁰ It is true that these anti-colonial and anti-imperial struggles did not congeal into a popular front, i.e. Mina and Van Helsing remain spectators of Dracula's destruction rather than co-participants. That said, future writers, filmmakers and interactive media artists would pick up where Stoker left off.

The other landmark aesthetic expression of imperial complicity during the late 1890s was Mallarmé's *A Throw of the Dice Never Abolishes Chance* (1896), hereafter referred to as *A Throw of the Dice*. Whereas Mallarmé's previous works functioned as ghost sonnets, on the model of Bruckner's ghost symphonies, Brahms' ghost sonatas, and Tchaikovsky's ghost ballets. *A Throw of the Dice* took the next logical step by exploding the sonnet as a form, and utilizing the tools of typography, typesetting and free verse to create the effect of a lyrical form distributed across a range of concurrent media platforms.

Mallarmé organized the text into four sections, each of which quoted a separate chunk of the poem's title in an enlarged capitalized font. The first of these sections was titled "A throw of the dice" and was followed by a blank page, for a total of two pages of text. The second section was titled "never" (jamais) and consisted of six pages of text. The third section was titled "abolishes" (n'abolira), located at the bottom of an otherwise blank page of text, and was followed by seven and a half pages of italicized text. The fourth and final section was titled "chance" (hasard), and was followed by a few lines of italicized text, before switching back to non-italicized text for the final four pages of the work.

The poem as a whole depicted the maritime imperial speculation as a vortex of energy which could result in the telegraphic number ("the unique Number which can only / hesitate / corpse by the arm")⁶⁰¹ or else terminate in the catastrophic shipwreck ("tornado of hilarity and horror / around an abyss").⁶⁰² The third and fourth sections were linked by an extraordinary sequence of ten lines which highlighted the calculation, diffusion and interpretation of the numerical cipher – the distant but recognizable predecessor of the late 20th century phenomenon of computerized data:

THE NUMBER

DOES IT EXIST

otherwise than as a scattered hallucination of agony

DOES IT COMMENCE AND CEASE

sleeping out when denied and sealed when present

finally

by some profusion spread in rarity

DOES IT CIPHER

evidence of the sum even if for only one

DOES IT ILLUMINATE⁶⁰³

⁶⁰¹ "l'unique Nombre qui ne peut pas / hésité / cadavre par le bras". Stéphane Mallarmé. *Collected Poems and Other Works*. Translated by E.H. and A.M. Blackmore. Oxford: Oxford University Press, 2006 (144). This is my translation.

⁶⁰² "tourbillon d'hilarité et d'horreur / autour du gouffre". Stéphane Mallarmé, *Collected Poems and Other Works* (149). This is my translation.

⁶⁰³ "LE NOMBRE/ EXISTÂT-IL / autrement qu'hallucination éparse d'agonie / COMMENÇA T-IL ET

The variable font sizes and white spaces between each line suggested the flow of billboards, posters, shop-signs, storefronts and commercial advertisements glimpsed through the window of a moving Parisian train, omnibus or horse-drawn carriage (this window was also subtly suggested by the fact that the lines were printed in the upper right quadrant of the page).

Two-thirds down the page, the fourth section began with the fully capitalized title CHANCE on the far left. Subsequent lines flowed from left to right across the next three pages like convoys of steamships crossing the ocean. The copious blank spaces surrounding these lines were anchored by sparse lines at the bottom of each page, which reinforced the spatial metaphor of this typography (one such line read “by a neutrality identical to the abyss”,⁶⁰⁴ while two pages later another line stated: “in these parts / waves / in which all reality dissolves”).⁶⁰⁵ Four pages later, the implied maritime subjectivity of this ocean was endowed with a concrete means of spatial navigation: “towards / this must be / the Seven Oxen [an obscure French term for the constellation of the Great Bear] or North / A CONSTELLATION”.⁶⁰⁶

The ultimate destination of this maritime subject and its apparatus of navigation was not revealed until the poem’s final seven lines. These latter depicted a succession of verbs cascading from left to right like a series of film cuts, only to culminate in the final capitalized line:

CESSÂT-IL / sourdant que nié et clos quand apparu / en fin / par quelque profusion répandue en rareté / SE CHIFFRÂT-IL / évidence de la somme pour peu qu'une / ILLUMINÂT-IL”. Stéphane Mallarmé, *Collected Poems and Other Works* (155). This is my translation.

⁶⁰⁴ “par la neutralité identique du gouffre”. Stéphane Mallarmé, *Collected Poems and Other Works* (155). This is my translation.

⁶⁰⁵ “dans ces parages / du vague / en quoi toute réalité se dissout.” This is my translation.

⁶⁰⁶ “vers / ce doit être / le Septentrion aussi Nord / UNE CONSTELLATION”. Stéphane Mallarmé, *Collected Poems and Other Works* (159). This is my translation.

watching
 doubting
 rolling
 shining and meditating
 before stopping
 at some last point which consecrates it

 All Thinking broadcasts [émettre] a Throw of the Dice⁶⁰⁷

This final line served two functions. Its capitalization suggested the freeze frame or snapshot of the lucky or disastrous dice-roll, the photographic equivalent of the subtitle “The End” printed at the end of a story. However, its reference to thinking and broadcasting was a nod towards the temporality of this snapshot. Putting all the pieces of the puzzle together, the poem’s title and final line form an anagram which can be rendered as, “all maritime thinking always broadcasts/never abolishes the spatial chance.”

This was nothing less than the invention of the cinematic intertitle seven years prior to its mass mediatic realization.⁶⁰⁸ Mallarmé’s achievement in the field of lyric poetry had a conspicuous musical parallel in Debussy’s *Nocturnes* (1899), the work which expanded the melodic innovations of *Prelude to the Afternoon of a Faun* into a full-fledged strategy of orchestration – the next great step for the musical industrial modernisms of the core. Mark DeVoto has summarized the specific innovations of *Nocturnes* as follows:

...by far the greater part of the orchestral texture is the constantly and subtly changing array of divided muted strings, beginning with high first violins divided in six (bars 7–10) and eventually ending with low divided cellos and basses (bars 88–97). In between these registral antipodes, every register is marked by some uniquely characteristic string texture, including alternating chords doubled in octaves with simultaneous arco and pizzicato over a pedal point (bars 43–50), and a sustained harmony reinforced with two muted horns, surmounted by a melody in violin, viola and cello solos in three octaves (bars 71–4). The tutti at bar 42, the loudest point in the piece, with oboes, clarinets, bassoons and two horns, keeps all sections of the strings (without the basses) divided in two within a two-octave span, and still muted.⁶⁰⁹

The layered typography and blank pagination employed in *A Throw of the Dice* had their counterpart in the resonating sound-effects and muted strings employed in *Nocturnes*. Whereas

⁶⁰⁷ “veillant / doutant / roulant / brillant et méditant / avant de s'arrêter / à quelque point dernier qui le sacre / Toute Pensée émet un Coup de Dés” Stéphane Mallarmé, *Collected Poems and Other Works* (159). This is my translation.

⁶⁰⁸ The first use of intertitles in film occurred in Edwin S. Porter’s 1903 film *Uncle Tom’s Cabin*.

⁶⁰⁹ Mark DeVoto. “Chapter 10: The Debussy sound: color, texture, gesture.” In: *The Cambridge Companion to Debussy* (184).

the former decreased the lyrical material to the bare minimum required to evoke the industrial landscape of shop windows and commercial advertisements, the latter decreased the sonic heft of the symphony to the acoustic minimum in order to evoke the soundscape of phonograph recordings and radio broadcasts.

We will have more to say about Debussy's final titanic achievement in Chapter 12, namely *The Sea* (1905). For now, however, it is worth emphasizing that the near-simultaneous appearance of Monet's *Water Lilies* and *Morning on the Seine* series (both originated in 1896), Stoker's 1897 *Dracula*, Mallarmé's 1897 *A Throw of the Dice* and Debussy's 1899 *Nocturnes* marked a significant change in the trajectory of the core industrial modernisms.

This change can be summarized as the end of narratives of imperial complicity, and the beginning of narratives of anti-imperial resistance. These latter were not always progressive in nature, but embodied a wide spectrum of progressive as well as revanchist economic, political and cultural responses by the four non-British core polities to the slow but inexorable decline of the British hegemony.

The progressive responses included the innovative forms of trade union solidarity and anti-colonial mobilization exemplified by Dadabhai Naoroji's *Poverty and Un-British Rule in India* (1902), the first comprehensive analysis of unequal exchange between the British metropole and the South Asian colonial periphery. Naoroji's text had its American counterpart in W.E.B. Dubois' sociological masterpiece *The Souls of Black Folk* (1903), the first theoretically rigorous account of US internal neocolonialism as well as a profound meditation on the anti-colonial nature of African American industrial realism and industrial modernism.⁶¹⁰

The regressive responses included the industrial racism exemplified by the 1896 Plessy vs. Ferguson decision by the US Supreme Court, which enshrined racial apartheid in the United States for the next six decades, as well as the maritime imperialism exemplified by the Spanish-American war of 1898 and the subsequent US colonization of the Philippines and Puerto Rico. For Belgium, this regression meant the genocidal looting of the Congo, while for the Netherlands, it meant the colonization of Indonesia's outlying islands (e.g. the annexation of parts of Sulawesi in 1905-1906 and of the islands of Bali in 1906-1908). For France, it meant the domestic anti-Semitism exemplified by the 1894-1906 Dreyfuss affair, as well as the maritime expansionism which resulted in the colonization of Laos in 1893 and a dangerous standoff with the British empire in the Fashoda incident of 1898.

It is no accident that many of the leading works of the core industrial modernisms of the turn of the 20th century contained both these progressive impulses as well as numerous regressive ones. One of the emblematic examples of this ambivalence was Joseph Conrad's novella *Heart of Darkness* (1899), which denounced the genocidal predation of Belgian imperialism in the Congo while preserving the mantle of imperial white masculine authority (the third-person narrator consciously conceals the truth of Kurtz' ghastly demise to his widow at the

⁶¹⁰ "The problem of the twentieth century is the problem of the color-line—the relation of the darker to the lighter races of men in Asia and Africa, in America and the islands of the sea. It was a phase of this problem that caused the Civil War; and however much they who marched South and North in 1861 may have fixed on the technical points, of union and local autonomy as a shibboleth, all nevertheless knew, as we know, that the question of Negro slavery was the real cause of the conflict." W.E.B. Du Bois. *The Souls of Black Folk*. 1903. Chapter 2.

end of the story).

Similarly, Kate Chopin's *The Awakening* (1899) captured the proto-feminist rebellion of an elite housewife against a failed marriage in the southern state of Louisiana, but did not fundamentally critique the white imperial masculinity of the US empire during the 1890s. The following passage, located at the midpoint of the novel, astutely registered the radical energies of this rebellion as well as the social machinery of its suppression:

...She [Edna Montpelier] went and stood at an open window and looked out upon the deep tangle of the garden below. All the mystery and witchery of the night seemed to have gathered there amid the perfumes and the dusky and tortuous outlines of flowers and foliage. She was seeking herself and finding herself in just such sweet, half-darkness which met her moods. But the voices were not soothing that came to her from the darkness and the sky above and the stars. They jeered and sounded mournful notes without promise, devoid even of hope. She turned back into the room and began to walk to and fro down its whole length, without stopping, without resting. She carried in her hands a thin handkerchief, which she tore into ribbons, rolled into a ball, and flung from her. Once she stopped, and taking off her wedding ring, flung it upon the carpet. When she saw it lying there, she stamped her heel upon it, striving to crush it. But her small boot heel did not make an indenture, not a mark upon the little glittering circlet.

In a sweeping passion she seized a glass vase from the table and flung it upon the tiles of the hearth. She wanted to destroy something. The crash and clatter were what she wanted to hear.

A maid, alarmed at the din of breaking glass, entered the room to discover what was the matter.

"A vase fell upon the hearth," said Edna. "Never mind; leave it till morning."

"Oh! you might get some of the glass in your feet, ma'am," insisted the young woman, picking up bits of the broken vase that were scattered upon the carpet. "And here's your ring, ma'am, under the chair."

Edna held out her hand, and taking the ring, slipped it upon her finger.⁶¹¹

While Edna's marriage ring stood halfway between Wagner's 1854 Ring of semi-peripheral national imperial mythos and Tolkien's 1947 Ring of the vanished British hegemony, the shattered vase anticipated the key symbol of Henry James' *The Golden Bowl* (1904). This latter was the capstone of James' turn-of-the-century trilogy which focused on the psychological fabulations and romantic tribulations of the elite American expatriates located in London, the first two of which were *The Wings of the Dove* (1902) and *The Ambassadors* (1903).

Arguably, Chopin's position as a southern female American writer steeped in Louisiana's Creole culture had significant similarities to James' position as a closeted gay male among the American expatriate elites of London, in the sense that both reacted allergically to the industrial consumerism of the core polities. Chopin depicted the radical potential of this consumerism in the form of Edna Montpelier's proto-feminist quest for personal autonomy, and its reactionary suppression in her eventual self-destruction – the American analogue of Conrad's *Lord Jim*, with Stein's famous injunction that the protagonist should "in the destructive element immerse".⁶¹²

⁶¹¹ Kate Chopin. *The Awakening*. 1899. Chapter 17.

⁶¹² "He [Stein] sat down and, with both elbows on the desk, rubbed his forehead. 'And yet it is true it is

Conversely, James narrated Maggie Verver's quest for aesthetic value in terms of the contrast between the alluring appearance of the golden bowl and its economic worthlessness – the contradiction of the American plutocrats who had the financial means to supplant Britain's hegemonic position, but who lacked the necessary political motivation and cultural cosmopolitanism to do so.

The result was the uneasy triumvirate of British dreadnoughts, French fashion and US factories typical of the final two decades of Global Steam. A key passage in James' novel captured this geopolitical constellation in terms of the bowl's "formless fragments," which functioned like the haphazardly-edited footage of the first cinema reels. These fragments were reassembled in Maggie's mind, in a climactic moment which revealed that the gleaming exterior of the Edwardian oligarchy was nothing but tawdry Gilded Age kitsch:

They might have been – really charming as they showed in the beautiful room, and Charlotte certainly, as always, magnificently handsome and supremely distinguished – they might have been figures rehearsing some play of which she herself was the author; they might even, for the happy appearance they continued to present, have been such figures as would, by the strong note of character in each, fill any author with the certitude of success, especially of their own histrionic. They might in short have represented any mystery they would; the point being predominantly that the key to the mystery, the key that could wind and unwind it without a snap of the spring, was there in her pocket – or rather, no doubt, clasped at this crisis in her hand and pressed, as she walked back and forth, to her breast. She walked to the end and far out of the light; she returned and saw the others still where she had left them; she passed round the house and looked into the drawing-room, lighted also, but empty now, and seeming to speak the more, in its own voice, of all the possibilities she controlled. Spacious and splendid, like a stage again awaiting a drama, it was a scene she might people, by the press of her spring, either with serenities and dignities and decencies, or with terrors and shames and ruins, things as ugly as those formless fragments of her golden bowl she was trying so hard to pick up.

She continued to walk and continued to pause; she stopped afresh for the look into the smoking-room, and by this time – it was as if the recognition had of itself arrested her – she saw as in a picture, with the temptation she had fled from quite extinct, why it was she had been able to give herself so little, from the first, to the vulgar heat of her wrong. She might fairly, as she watched them, have missed it as a lost thing; have yearned for it, for the straight vindictive view, the rights of resentment, the

true. In the destructive element immerse.'... He spoke in a subdued tone, without looking at me, one hand on each side of his face. 'That was the way. To follow the dream, and again to follow the dream – and so – ewig – [German: eternally] usque ad finem [Latin: to the very end]...' The whisper of his conviction seemed to open before me a vast and uncertain expanse, as of a crepuscular horizon on a plain at dawn – or was it, perchance, at the coming of the night? One had not the courage to decide; but it was a charming and deceptive light, throwing the impalpable poesy of its dimness over pitfalls – over graves. His life had begun in sacrifice, in enthusiasm for generous ideas; he had traveled very far, on various ways, on strange paths, and whatever he followed it had been without faltering, and therefore without shame and without regret. In so far he was right. That was the way, no doubt. Yet for all that the great plain on which men wander amongst graves and pitfalls remained very desolate under the impalpable poesy of its crepuscular light, overshadowed in the center, circled with a bright edge as if surrounded by an abyss full of flames." Joseph Conrad. *Lord Jim*. 1900. Chapter 20.

rages of jealousy, the protests of passion, as for something she had been cheated of not least: a range of feelings which for many women would have meant so much, but which for HER husband's wife, for HER father's daughter, figured nothing nearer to experience than a wild eastern caravan, looming into view with crude colors in the sun, fierce pipes in the air, high spears against the sky, all a thrill, a natural joy to mingle with, but turning off short before it reached her and plunging into other defiles. She saw at all events why horror itself had almost failed her; the horror that, foreshadowed in advance, would, by her thought, have made everything that was unaccustomed in her cry out with pain; the horror of finding evil seated, all at its ease, where she had only dreamed of good; the horror of the thing HIDEOUSLY behind, behind so much trusted, so much pretended, nobleness, cleverness, tenderness.⁶¹³

The bowl's fragments thus functioned as the crude cinematic footage of a double failure, one personal and the other political. The personal failure was that of the two marriages depicted in the novel (Maggie-Amerigo and Adam-Charlotte), whereas the political failure was the inability of the American colossus to challenge the supremacy of the British hegemon.

While the first working model of this double failure can be traced back to James' short story *The Middle Years* (1893),⁶¹⁴ it took James an additional nine years to transform the themes of the crisis of literary reception in the industrial era and the obsolescence of the mid-Victorian marriage plot into the more fully internationalized plot machinery of *The Wings of the Dove*. This latter depicted the former as the collapse of the putative engagement between fellow Britons Kate Croy and Merton Densher, and the latter as the failure of American heiress Millie Theale's bequest to heal the rift between these two.

The Ambassadors sharpened this critique still further by replacing the theme of the broken engagement with the broken romance (i.e. that of Chad Newsome and Madame de Vionnet), and replacing Millie's unarticulated bequest with the unnamed article produced at Woollett by the Newsome plutocracy. *The Golden Bowl* took the next logical step by transforming the theme of the broken romance into the broken marriage.

What marked *The Golden Bowl* as an extraordinary step forwards for the novel, on the other hand, was the fact that James set these two failures in motion towards each other in the form of the two final sentences of the passage quoted above. The first failure was symbolized by the fully capitalized "HER", emphasizing the fact that despite her wealth, Maggie remained the dependent ward of her husband and her father. The second failure was relayed by the capitalized term "HIDEOUSLY", which served the same deracinating function at the end of *The Golden Bowl* as Mallarmé's "CHANCE" did at the end of *A Throw of the Dice*.

Where the sentences of Dickens and Brontë galloped across the page with the energy of a horse-drawn carriage, interspersing journalistic descriptions with jocular asides and urban argot, and where Zola's Naturalism and Verne's science fiction tales navigated through dense layers of sociological and technological detail like ticketed passengers through railyards, the sentences of

⁶¹³ Henry James. *The Golden Bowl*. 1904. Chapter 36.

⁶¹⁴ *The Middle Years* depicted a middling author named Dencombe in the throes of a midlife crisis, who perishes of an illness and unwittingly causes his friend (read: lover) Doctor Hugh to lose his inheritance. It marked the moment James definitively surpassed the mid-Victorian marriage novels of Anthony Trollope.

James' 1902-1904 trilogy drove through the literary landscape of the late Victorian era with the ambivalent dynamism of the first automobiles. These were engines of privatized space invented primarily in Britain and France – the first Michelin Guide for French automotive tourists was published as early as 1900⁶¹⁵ – but whose mass adoption would be led by the United States.

This dynamism had its most striking musical expression in the work of American ragtime composer Scott Joplin, who transformed the popular music genre of American ragtime into a progressive template of musical industrial modernism in twelve classic piano works (*Maple Leaf Rag* (1899), *The Easy Winners* (1901), *The Cascades* (1903), *Palm Leaf Rag* (1903), *The Entertainer* (1903), *The Chrysanthemum* (1904), *Bethena* (1904), *Gladiolus Rag* (1907), *Pine Apple Rag* (1908), *Sugar Cane Rag* (1908), *Scott Joplin's New Rag* (1912), and *Magnetic Rag* (1914)) as well as the full-scale opera *Treemonisha* (1910). Edward Berlin has provided this insightful analysis of Joplin's musical innovations:

Most of all, Joplin recognized that patterns of durations were not the only source of rhythmic vitality; he had discovered the propulsive power of harmonic motion, of resolving dissonances, and of goal-directed voice leading. These principles are also apparent in the very first measures. He clearly establishes A-flat tonality with tonic and dominant chords, but introduces in the first measure a dissonant A-natural as a lower-neighbor to B-flat, these two notes at the same time forming part of a three-note ascending chromatic motive (A-flat, A, B-flat) used throughout the piece.

The real shocker in the piece's opening moments is the slide away from the dominant E-flat to the flatted sixth (spelled correctly as F-flat, mm. A4-6), using this "bluesy" relationship, along with a chromatic three-note bass pattern, through the rest of the A strain. The structure of this first (A) strain retains the standard pattern of four 4-measure phrases, but is atypical in its details. The thematic pattern, rather than have the third phrase repeat the opening material (such as the common a-b-a-c or a-b-a'-b'), follows a more progressive and dynamic pattern whereby the second half of the strain is unrelated to the first half: a-b-c-c.

⁶¹⁵ (characteristically, the first Michelin guide for automobile tourists was published in France in 1900 and popularized between 1906 and 1914): "In 1900 the Michelin Guide of France was created for tourists traveling by car. This volume of 400 pages on thin paper was designed to slide into the traveler's pocket and was offered for free. It contained a practical list of useful addresses to obtain fuel, to maintain tires, to repair a car and to stay and rest. But gradually, the guide offered more space for accommodation, extended to other parts of Europe and developed another specificity: road maps. Between 1906 and 1914, it distributed annually an average of 60,000–70,000 copies. André Michelin took advantage of his knowledge as a cartographer of the French State, at the Ministry of the Interior, and provided his guides with accurate maps that allowed motorists to navigate through a landscape that still did not have sufficient signage. A year before the First World War, Michelin completed the production of his red guides with maps covering the entire territory of France and select cities considered worth visiting (Harp 2008, pp. 17–18; Moulin-Bourret 1997, pp. 12–18; Miquel 1962; Lottman 1998; Dumond 2002)." Mari Carmen Rodríguez. "Chapter 2: Battlefield Tourism, from One (Post)War to the Other, France–Spain. Touring from the Great War to the Spanish Civil War." In: *Inter and Post-war Tourism in Western Europe, 1916–1960*. Edited by Carmelo Pellejero and Marta Luque. Cham: Palgrave Macmillan, 2020 (11-12).

This is the remarkable opening of the work that was to change ragtime. The rest of the composition is equally marvelous. The second (B) strain begins with the right hand playing high and descending against a bass that makes judicious use of the three-note chromatic ascending motif (A-flat, A, B-flat in B4-5; B-flat, B, C in B6-7). Joplin also introduces a device he was to use throughout his career: a reiterated right-hand pattern with changing harmonies (B3-8, Ex. 4-8).

After a reprise of the A strain, Joplin presents a C strain that has a treble part suggesting Latin-American rhythms (C1-2), but with little melodic interest. The bass, in contrast, is remarkably melodic while, at the same time, providing a strong tonal direction (Ex. 4-9).

Most rags, both before and after the *Maple Leaf*, had only three strains. In *Maple Leaf*, Joplin used four strains, and this became the general pattern for Joplin rags and for rags modeled after his. This final (D) strain again makes use of the lower neighbor motion and ends with a phrase that becomes one of Joplin's characteristic designs: an inner voice that descends chromatically the interval of a fourth (Ex. 4-10).⁶¹⁶

Joplin automobilized American music by integrating chromatic melodies with complex rhythms and harmonic development. The three-note chromatic motif of *Maple Leaf Rag* was a literal and figurative engine of musical variation whose stark simplicity rendered the more complicated elements of the composition acoustically accessible to a mass audience: the paradigm of the hit recording which is easy to listen to but impossible to forget.

Maple Leaf Rag was not just an aesthetic triumph, it was also a resounding commercial success, and the publication royalties from the song gave Joplin the resources necessary to write his later compositions. These royalties were paid by John Stark, a Kentucky-born, Indiana-raised bugler for the Union army during the Civil War who became a St. Louis-based music entrepreneur.⁶¹⁷

Stark published some of the leading ragtime compositions of the early 20th century, helping to ignite a decade-long national craze for ragtime which was famously captured by a passage in James Weldon Johnson's *Autobiography of an Ex-colored Man* (1912).⁶¹⁸ In the midst

⁶¹⁶ Edward A. Berlin. *King of Ragtime: Scott Joplin and His Era*. Oxford: Oxford University Press, 1994 (62-65).

⁶¹⁷ Edward A. Berlin, *King of Ragtime: Scott Joplin and His Era* (72-73).

⁶¹⁸ "It was music that demanded physical response, patting of the feet, drumming of the fingers, or nodding of the head in time with the beat. The barbaric harmonies, the audacious resolutions often consisting of an abrupt jump from one key to another, the intricate rhythms in which the accents fell in the most unexpected places, but in which the beat was never lost, produced a most curious effect. And, too, the player,--the dexterity of his left hand in making rapid octave runs and jumps was little short of marvelous; and, with his right hand, he frequently swept half the keyboard with clean cut chromatics which he fitted in so nicely as never to fail to arouse in his listeners a sort of pleasant surprise at the accomplishment of the feat.

This was ragtime music, then a novelty in New York, and just growing to be a rage which has not yet subsided. It was originated in the questionable resorts about Memphis and St. Louis by Negro piano players, who knew no more of the theory of music than they did of the theory of the universe, but were guided by natural musical instinct and talent. It made its way to Chicago, where it was popular some time before it reached New York. These players often improvised crude and, at times, vulgar words to fit the

of this craze, Joplin moved to New York City in 1907, and lived within one minute of walking distance from the Tin Pan Alley neighborhood of Manhattan, the center of the early 20th century US music publishing industry.⁶¹⁹

Conversely, the inexorable triumph of ragtime among the audiences of the core polities during the first decade of the 20th century was followed by its equally inexorable obsolescence thereafter. This was due partly to the diffusion of Joplin's compositional innovations among Tin Pan Alley impresarios such as Irving Berlin and George Gershwin, but also to the cultural revanchism of blackface entertainment. This latter consisted of primarily white vaudeville and Hollywood actors who daubed their faces black and entertained white audiences with egregiously racist stereotypes of African American poetry, music and spoken dialect.⁶²⁰ The single most striking expression of this revanchism was the failure of Joplin's repeated attempts to stage *Treemonisha* in 1911, 1913 and finally in 1915, the same period that Lithuanian-American Al Jolson rocketed to Broadway fame and superstar status on the basis of his blackface performances.⁶²¹

melodies. This was the beginning of the ragtime song. Several of these improvisations were taken down by white men, the words slightly altered, and published under the names of the arrangers. They sprang into immediate popularity and earned small fortunes, of which the Negro originators got only a few dollars. But I have learned that since that time a number of colored men, of not only musical talent, but training, are writing out their own melodies and words and reaping the reward of their work. I have learned also that they have a large number of white imitators and adulterators." James Weldon Johnson. *The Autobiography of an Ex-Colored Man*. Boston: Sherman, French & Company 1912. Chapter 6.

⁶¹⁹ "A block from Joplin's residence was the original Tin Pan Alley, West 28th Street between Broadway and Sixth Avenue. The Alley got its name from the numerous popular music publishing companies on this one street. At various times from the 1890s through early 1900s, this single block contained at least twenty-one music firms between the addresses of 36 (Feist) and 57 (New-York Music), housed in three-, four-, and five-story buildings. Included were such major firms as Harry Von Tilzer (37 and 42), Vandersloot (41), Shapiro-Bernstein (45), Remick (45), Witmark (49-51), Chas. K. Harris (51), Paul Dresser (51), and the black-owned company of Gotham-Attucks (42). Walking down this street, with music offices in almost every building, one was greeted with the continuous jangling of pianos on which songs were being sampled. In the summer, with the windows open, the jangle became a cacophony, like the banging of tin pans." Edward A. Berlin, *King of Ragtime: Scott Joplin and His Era* (168).

⁶²⁰ The slaves depicted in the first film with intertitles, *Uncle Tom's Cabin* (1903), were white performers in blackface. The first African American actor to appear in a mainstream Hollywood film was Sam Lucas in a 1914 version of *Uncle Tom's Cabin*. Lucas was also the first African American to star in the 1878 stage version of Harriet Beecher Stowe's novel, and was one of the most prominent African American performers of the 1890s and 1900s.

⁶²¹ Edward Berlin, *King of Ragtime* (214-215, 222, 235).

Chapter 11

One Core Integration, Two Doom Loops 1894-1914

Between 1894 and 1914, seven military conflicts shattered the two geopolitical truces which undergirded the British hegemony, namely the 205-year East Asian truce (1689-1894) between the empires of China, Russia, Japan and Thailand, and the 151-year West Asian truce (1763-1914) between the Austrian, German, Ottoman and Russian empires.⁶²² In chronological order, these seven conflicts were the 1894-1895 Sino-Japanese war and Japan's subsequent colonization of Taiwan and Korea; the 1898 Spanish-American war and the ensuing US colonization of Spanish-controlled Puerto Rico and the Philippines, the annexation of Hawaii as a US territory, and the neocolonization of Cuba; the suppression of the 1899-1901 Boxer Rebellion by the armies and navies of nine empires (Austria, Belgium, Britain, France, Italy, Japan, the Netherlands, Russia, and the US); the 1904-1905 Russo-Japanese war, which almost toppled the Romanov dynasty; the Italian invasion of Ottoman-controlled Libya in 1911; the First Balkans War of October 1912-May 1913; and the Second Balkans War of June 1913-August 1913.

To borrow the title of an insightful history of the Russo-Japanese war, these seven conflicts constituted a "world war zero", the dry run for the third supercycle.⁶²³ This undeclared world war disrupted the East Asian and West Asian truces in two main ways. First, it destabilized or demolished the intermediary states which had heretofore constrained regional expansionism or buffered imperial rivalries in these regions. Minor border squabbles between dynastic principalities were replaced by explosive confrontations between globe-spanning national imperialisms, setting the stage for the apocalyptic conflicts of 1914-1945.

In the case of the West Asian truce, the Austrian empire had once been constrained by the intermediary states of Bulgaria, the German principalities, the non-Hapsburg Italian principalities, Romania and Switzerland, the Ottoman empire by Bulgaria, Greece, Qajar Iran and Romania, the Prussian empire by Denmark, the German principalities, and Sweden-Norway, and the Russian empire by Bulgaria, Qajar Iran, Romania and Sweden-Norway. However, the diminution or disappearance of the Danish, Italian, and German intermediary states brought the French and German empires into direct conflict, the Italian empire into direct conflict with the Austrian and Ottoman empires, and the Russian empire into direct conflict with the Austrian, German and Ottoman empires.

Similar processes disrupted the East Asian truce. The Japanese empire had previously

⁶²² The two other significant military conflicts of this period, namely the 1899-1902 Anglo-Boer war between the Afrikaaner settler colonists of South Africa and the British empire and the 1910-1920 Mexican revolution subsequent civil war, had enduring effects on their respective regions (southern Africa and Central America), but did not trigger the implosion of the East Asian and West Asian truces.

⁶²³ *The Russo-Japanese War in Global Perspective: World War Zero*. Edited by David Wolff, Steven G. Marks, Bruce W. Menning, David Schimmelpenninck van der Oye, John W. Steinberg and Yokote Shinji. Leiden: Brill, 2007.

been constrained by the intermediary state of Joseon Korea, the Qing Chinese empire by the intermediary states of Barakzai Afghanistan, Bukhara, Joseon Korea, Khiva, Kokand, Qazaq, and Nguyen Vietnam, the Russian empire by Barakzai Afghanistan, Bukhara, Khiva, Qazaq, Kokand, and Qajar Iran, and the empire of Thailand by Nguyen Vietnam. However, Russia's post-1860 colonization of Bukhara, Khiva, Qazaq and Kokand brought Russia and Qing China into direct conflict, France's post-1884 colonization of Vietnam brought France, Qing China and Thailand into direct conflict, while Japan's post-1894 colonization of Korea brought Japan, Qing China and Russia into direct conflict.

The second way this undeclared world war disrupted the East Asian and West Asian truces was by igniting an unprecedented number of anticolonial uprisings and anti-imperial mass movements inside all fourteen world empires of Global Steam. These anti-colonial uprisings and anti-imperial movements ranged from the 1895-1898 Cuban and Filipino anti-colonial uprisings against Spain to Vietnamese dissident Phan Bội Châu's 1903 co-creation of the anti-colonial Modernization League against France, and from the Boxer rebellion of China to the civil rights tactics invented by Mahatma Gandhi during his 1893-1914 sojourn in British-colonized South Africa.

The demise of the intermediary states on the one hand and the rise of anti-colonial and anti-imperial movements on the other were mutually reinforcing and synergistic processes. While each development was destabilizing, their conjunction transformed the East Asian and West Asian truces from twin bastions of geopolitical stability into twin geopolitical doom loops. Conversely, whereas the rocky transition from Global Cotton to Global Steam generated eleven conflicts between 1850 and 1871, none of which posed a systemic challenge to Britain's hegemony,⁶²⁴ all nine conflicts of the 1894-1914 conjuncture were closely interconnected and all undermined the British long peace in one way or another.

These twin doom loops are best understood as the ensemble of the individual lockdowns of the oligarchic republics and empires of the semi-periphery. The less these republics and empires were able to keep pace with the combination of maritime expansionism and industrial accumulation characteristic of the five core polities, the greater the incentive of oligarchic and dynastic elites to launch opportunistic maritime expansions against other semi-peripheral polities, or to gamble on colonial adventurisms against the few remaining polities of the periphery.

The most prominent examples of the former included the 1904-1914 dreadnought race between Argentina, Brazil and Chile, the post-1898 naval expansion of Wilhelm II's German empire, and the Romanov empire's 1905-1914 policy of seizing Istanbul and the Turkish straits from the Ottoman empire in order to safeguard maritime exports of Ukrainian grain. Conversely, the most prominent examples of the latter included the Japanese empire's 1895 colonization of the Chinese province of Taiwan and its 1910 colonization of Joseon Korea, Italy's failed 1895-1896 invasion of Solomonic Ethiopia, and Russia's failed attempt to seize Qing China's Manchurian province between 1900-1905.

One of the earliest and most spectacular theories of the West Asian doom loop was

⁶²⁴ For a fuller account of these eleven conflicts, see my own: Dennis Redmond. *Meditations on Geopolitics, Volume 4: Global Steam*. Chapter 9.

British geographer Harold Mackinder's 1904 thesis of Eurasian (a.k.a. West Asian) geopolitical determinism. This was the notion that the vast plains constituted by the northeastern territories of the Austrian empire, the eastern possessions of the German empire, and the westernmost territories of the Russian empire were the crossroads of the European-Asian-African supercontinent. The empire which controlled this crossroads, so argued Mackinder, would control the supercontinent and thus dominate human history.⁶²⁵

While Mackinder's thesis did shed an intriguing light on the earlier historical trajectories of the major land-based empires of West Asia,⁶²⁶ it failed to account for three crucial historical developments. The first was the industrialization of transportation. Ever since 1492, the cheapest way of delivering any given commodity (defined as the energy required to move one kilogram by one kilometer) has always been maritime shipping. A one-kilogram delivery via river or ocean shipping costs less than half of a comparable delivery by rail, five times less than by truck, and an order of magnitude less than by air.⁶²⁷ Consequently, control of the world's maritime shipping lanes has always been the true metric of world hegemony, not control of the land routes of West Asia.

The second was the fact that the constituent empires of the West Asian and East Asian truces were composed of a wide variety of fiercely antagonistic linguistic, confessional, ethnic and class identities. The West Asian doom loop was heavily mediated by a range of local anti-colonial nationalisms which acted in conjunction with an ensemble of international maritime expansionisms, precisely where the East Asian doom loop was heavily mediated by an ensemble of international maritime expansionisms which acted in conjunction with a range of local anti-colonial nationalisms.

The most powerful of these West Asian anti-colonial nationalisms included the oligarchic nationalisms of independent Bulgaria, Greece, Serbia and Romania, all of which pursued irredentist claims on portions of the Austrian and Ottoman empires. They also included the Polish and Ukrainian ethno-linguistic nationalisms which pursued claims on the ethnically Polish and Ukrainian territories of the Austrian, German and Russian empires. Conversely, the most powerful anti-colonial nationalisms of the East Asian region included those of Sun Yat-sen's Revive China movement (founded in 1894), Korea (signaled by the Tonghak uprising of 1894-1895), the Philippines (established by the anti-colonial uprising of 1896-1903), and dynastic Thailand (due to its irredentist claims on the territory of Cambodia seized by the French empire in 1893).

The third flaw in Mackinder's argument was that the planetary industrialization which unleashed the West Asian and East Asian doom loops between 1894 and 1914 also unleashed a countervailing process of economic, political and cultural integration of the five core polities, a

⁶²⁵ Halford Mackinder (1904). "The Geographical Pivot of History." In: *The Geographical Journal* 170: 40 (298-321). http://www.iwp.edu/docLib/20131016_MackinderTheGeographicalJournal.pdf.

⁶²⁶ These included the foundation of the first polity of Kyivan Rus' by northwest European Vikings, local Slavic-speaking cultures, and Greek-speaking priests from Moravia and Byzantium during the 10th and 11th centuries, the invasion of West Asia by the East Asian Mongols during the early 13th century, and the land-based imperial expansion of Romanov Russia (1613-1917).

⁶²⁷ J.P. Rodriguez (2016). *The Geography of Transport Systems* (website). https://people.hofstra.edu/geotrans/eng/ch8en/conc8en/energy_freight.html.

process we will call core integration. This latter rested on two pillars, the internal process of core democratization and the external process of core neocolonialism.

Core democratization was the product of the internationalization of the post-1860 industrial commons. While core democratization did not halt imperial expansion altogether, it significantly expanded rates of electoral participation and enabled the rise of new forms of anti-colonial resistance movements. Conversely, core neocolonialism was the result of the foreign policy of diplomatic compromise and accommodation adopted by the five core polities vis-a-vis each other's maritime empires over this time period, a policy which replaced the zero-sum military confrontations of the past with occasionally rancorous but peaceful forms of commercial competition.

The two key metrics of core democratization were the expansion of electoral suffrage and the rise of the first national trade unions. In Belgium, the centrist duo of the ruling Catholic party and the oppositional Liberal party significantly expanded suffrage between 1894 and 1914 due to pressure by trade union mobilizations and due to the electoral challenge of the Social Democratic party (this last won 22% of the parliamentary vote in 1900).⁶²⁸ A comparable expansion of suffrage occurred in the Netherlands under the auspices of the equally centrist duo of the ruling Anti-revolutionary Party and the oppositional Liberal Union.

France's Third Republic instituted near-universal male suffrage after 1873, while the post-Reconstruction United States had a male enfranchisement rate of about 75% (African Americans won the right to vote in the northern states, whereas southern African Americans and impoverished white males were disenfranchised).

The 1884 Representation of the People Act increased the British figure to 60% of adult males. Belgium expanded its electorate to 37.3% of the male population in 1893, while the Netherlands expanded male suffrage from a few percentage points in the 1880s to 11.6% of the male population in 1896. In the United States, women won the right to vote in state elections in Wyoming (1869), Utah (1895), Colorado (1893), Idaho (1896), Washington (1910), California (1911), Arizona and Oregon (1912), and Illinois (1913).⁶²⁹

It is also worth noting that the United States spawned a wide range of progressive anti-monopoly politics, ranging from the Populist political insurgency of 1892-1896 driven by farmers enraged at plutocratic railroad and food processing monopolies to the rise of muckraking journalists such as Ida B. Wells and Lincoln Steffens. These movements and journalists transformed anti-monopoly politics from a regional protest movement into a national legislative priority of the post-1900 Progressive movement.⁶³⁰

⁶²⁸ https://en.wikipedia.org/wiki/1900_Belgian_general_election.

⁶²⁹ In the semi-periphery, women won the right to vote in British-controlled New Zealand in 1893, in parts of British-controlled Australia in 1894 and in all of Australia in 1902, in Russian-controlled Finland in 1906, and in Swedish-controlled Norway in 1907. In British-controlled Canada, women won the right to vote in certain cities and local elections during the 1890s.

⁶³⁰ "The problem with giant organizations for these antimonopolists was not that they were too large, but that they were too small: economic consolidation, if properly regulated, could foster economies of scale that could benefit the many as well as the few. At its core, antimonopoly was less about economics than morality: corporations were dangerous not because they were too *big*, [italics in original] but rather because they had become too *powerful* [italics in original] to operate unrestrained by law – and, in

This was also the zero-hour of the American environmental movement. Between 1860 and 1889, only two national parks were established at Yellowstone (1872) and Mackinac (1875), and this latter was redesignated as a Michigan state park in 1895. However, between 1890 and 1914 eight new national parks were created. These included Rock Creek, Sequoia and Yosemite (1890), Mount Rainier (1899), Crater Lake (1902), Wind Cave (1903), Mesa Verde (1906) and Glacier (1910).⁶³¹ In 1906, President Roosevelt created the first system of national parks, albeit more for purposes of imperial prestige than out of a scientific understanding of the ecology, an understanding which would not emerge until the 1960s.

Britain lead the core polities in terms of unionization. This was especially apparent in sectors such as construction, engineering, mining, shipbuilding, quarrying and textiles. The absolute number of British union members quintupled from 0.75 million in 1888 to 4.1 million in 1914, while union membership doubled from 12.2% of the workforce in 1890 to 23.6% in 1914, the highest of any polity on earth.⁶³² Union density in the core polities of France and the US quadrupled during the same period, albeit from a smaller base, while union density rose fourfold in the German empire and sixfold in the Austrian empire:

Figure 31. Union membership as a percent of total nonagricultural civilian labor force in Austria, Britain, France, Germany and the US from 1890 until 1914.⁶³³

Year	Austria	Britain	France	Germany	US
1890	1.0%	12.2%	2.2%	3.2%	3.5%
1895	2.0%	11.6%	4.0%	2.7%	3.5%
1900	2.3%	13.7%	4.2%	5.9%	7.8%
1905	3.4%	14.0%	6.6%	10.2%	14.3%
1910	6.5%	18.8%	8.1%	13.5%	12.5%
1914	6.5%	23.6%	8.3%	12.5%	13.4%

Britain also led the five core polities in the expansion of public employment, as newly-enfranchised voters demanded increased spending on public education, healthcare and infrastructure. The share of total government employment tripled in Britain between 1870 and

particular, too independent of the salutary regulatory mechanism of market competition.” Richard R. John. “Chapter 1: Proprietary Interest: Merchants, Journalists and Antimonopoly in the 1880s.” In: *Media Nation: The Political History of News in Modern America*. Bruce Schulman and Julian E. Zelizer, editors. Philadelphia: University of Pennsylvania Press, 2017 (14).

⁶³¹ National Park System. <https://www.nps.gov/aboutus/national-park-system.htm>.

⁶³² Michael Mann, *The Sources of Social Power, Volume 2* (608-609).

⁶³³ Michael Mann, *The Sources of Social Power, Volume 2* (631).

1910, while the figure doubled in France and rose significantly in the United States. Public employment also rose strongly in the semi-peripheral Austrian and German empires:

Figure 32. Total government employment (national and local) as percent all employment, 1860-1910.⁶³⁴

Date	Austria	Britain	France	Germany	United States
1860	0.57	0.41	n/a	0.47	n/a
1870	0.50	0.53	1.11	1.15	n/a
1880	0.53	0.46	1.53	1.56	n/a
1890	2.92	0.99	1.83	1.70	n/a
1900	3.30	1.66	1.80	n/a	1.36
1910	3.15	2.60	2.14	1.57	1.68

One of the most spectacular expressions of core democratization was the landmark Belgian general strike of April 11-April 18, 1893. In Carl Strikwerda's words:

In 1893, they [Belgium's Socialists] led a general strike of more than 200,000 workers, the first general strike in Europe and obtained universal male suffrage, albeit tempered with plural votes. By 1900, thirty Socialists were members of Parliament, and hundreds had been elected to local governments across the country. Until just before World War I, no other Socialist movement was as successful at the polls as the Belgian. At least as impressive as the Belgian political victories was the apparently sweeping transformation of working-class life. Belgian Socialists launched several successful daily newspapers, as well as a large number of consumer cooperatives, clubs, labor unions, and even artistic and educational organizations. The sheer breadth of the Socialist program drew the admiration of French, British, Spanish, and German observers.⁶³⁵

Core neocolonialism ran on tracks which roughly paralleled those of core democratization. It is important to stress that this neocolonialism neither exacerbated nor ameliorated the West Asian and East Asian doom loops, but emerged in tandem with the latter. Just as core democratization enabled new forms of solidarity between the partly waged and fully waged laborers of the core – the most famous example is the July 1889 creation of the Second International in Paris – core neocolonialism generated some of the first institutional forms of international law, journalism, jurisprudence and anti-colonial solidarity. These latter included everything from the the Paris Convention for the Protection of Industrial Property, the predecessor of all contemporary agreements on intellectual property which was signed on March

⁶³⁴ Michael Mann. *The Sources of Social Power, Volume 2* (393).

⁶³⁵ Carl Strikwerda. *A House Divided: Catholics, Socialists, and Flemish Nationalists in Nineteenth-century Belgium*. Lanham: Rowman & Littlefield, 1997 (109).

20, 1883 by representatives from Belgium, Brazil, France, Guatemala, Italy, the Netherlands, Portugal, El Salvador, Serbia, Spain and Switzerland, to the 1911 Universal Races conference in London where Du Bois met Gandhi. London and Paris became crucial nodes of core neocolonialism, as the number of international conventions held in Paris rose from 69 in 1889 to 127 by 1900.⁶³⁶

The distant antecedents of the Belgian and Dutch versions of core neocolonialism can be traced back to the 1839 Treaty of London, wherein Belgium, Britain and the Netherlands agreed to respect Belgium's independence and neutrality vis-a-vis all future European conflicts. This arrangement permitted Dutch elites to extract vast amounts of wealth from Indonesia, and also enabled Belgian elites to rapidly industrialize in the post-1860 period and construct their own post-1885 maritime empire, all without having to pay for the massive infrastructure of warships, expeditionary armies and naval bases which secured Britain's naval hegemony.

Their path towards core neocolonialism was facilitated by their comparatively small demographic size (the combined Belgian and Dutch population was 8 million in 1860 and 13.33 million in 1910, as compared to Britain's 28.9 million and 45.2 million during those same years), by Napoleon III's clumsy attempts to annex Belgium, and by the emergence of the German empire on their eastern borders after 1871.

By 1890, Belgium pivoted irrevocably towards Britain as its main domestic security sponsor on a continent dominated by the French and German empires.⁶³⁷ At approximately the same time, the Netherlands tilted permanently towards Britain as the main guarantor of its Asian maritime empire. Dutch-controlled Indonesia had become a leading colonial entrepot as well one

⁶³⁶ "Almost every imaginable group with interests transcending national boundaries met in Paris that summer [of 1900]. There were orderly conferences on international postal regulations, copyrights, fisheries, libraries, publishing, ornithology, dentistry, public health, hypnotism, numismatics, photography, philately, and all kinds of public instruction, including education for the handicapped. In addition, though their congresses were held outside the exposition grounds, several varieties of socialists had their international meetings in Paris that summer.

In 1889 there had been sixty-nine international congresses; in 1900 there were 127. The largest assembly was for medicine, with over 6,000 participants; the smallest for fencing, with only seventy-five. The congresses were usually presided over by the most distinguished French academicians and intellectuals. In all, 67,638 individuals had official roles in the meetings." Richard D. Mandell. *Paris 1900: The Great World's Fair* (68-69).

⁶³⁷ "Neither Belgium nor Switzerland has an all-abiding faith in the international morality of the two great and turbulent powers [i.e. France and Germany] between which it is their misfortune to lie; and while both regard their recognized position of neutrality as a great advantage and safeguard, yet each is also preparing with some nervousness to defend its territory and its lines of transit against military occupation in the great war which all Europe anticipates. Belgium has a standing army of more than fifty thousand men on the peace footing, which could be instantly increased to more than twice that size in war, besides having a *garde civique* [French: civil guard] of about fifty thousand men. So highly do the Belgians prize their independent position that they would fight desperately to maintain it. They want nothing but to be let alone; and they are so unanimous and determined upon that proposition, and so well prepared to enforce the modest claim, that their external position would seem to be tolerably secure." Albert Shaw (1890). "Belgium and the Belgians." *The Atlantic*. April 1890.

of the world's leading oil producers, e.g. the Royal Dutch Petroleum Company (predecessor of the Anglo-Dutch Shell company) was the first to employ maritime tankers to transport oil via the Suez canal in 1892.⁶³⁸

By contrast, the definitive triumph of core neocolonialism in France did not take place until the 1904 Entente Cordiale [French: "friendly alliance"] with Britain. Between 1873 and 1904, the Third Republic operated the world's second largest navy, conquered vast territories in Africa and Asia, and administered the world's second largest maritime colonial empire. This expansionism generated continuous frictions with the British empire, most famously in the 1898 Fashoda standoff between rival British and French colonial expeditions in eastern Africa. However, French elites never seriously entertained the notion of challenging the British hegemon.

The reason was that France's primary post-1873 foreign policy goal was the return of Alsace-Lorraine from the German empire. This was understandable given that Alsace-Lorraine had been governed by French kings since the era of Louis XV and was designated a core territory of France by the 1815 Concert of Europe. Its 1871 annexation was the solitary instance of a core polity ceding territory under duress to a semi-peripheral polity during Global Steam, and its retrieval became the political lodestar of the Third Republic.

The core strategic dilemma facing French elites was that even though France was the third most powerful core polity of Global Steam after Britain and the US, it did not have the necessary demographic and economic resources to achieve decisive military superiority over the German empire (the German population was 20% larger than that of France by 1880, and 40% larger by 1900). Learning the painful lessons of Napoleon III's fatal diplomatic isolation and Bismarck's savvy coalition-building, French elites realized they needed allies to construct an effective anti-German coalition.

The first hurdle confronting such a coalition was the fact that none of the other four core polities were both able and willing to support France. The British hegemon had the means, but had no desire to destabilize the balance of power on the continent for the sake of what it regarded as a Franco-German border squabble. The combined demographic and economic resources of Belgium and the Netherlands were far too small to tilt the military balance against Germany, while their elites were firmly committed in any case to a policy of defensive neutrality. The United States had the necessary economic heft and had begun to construct its own deep water navy in 1883, but had no compelling reason to intervene in a continental European border conflict.

There were similar constraints on any potential alliance between France and the vast majority of the oligarchic republics and empires of the European semi-periphery. The oligarchic

⁶³⁸ "By 1900 Java was the most technologically modern and integrated economy between Bengal and Japan. The technology of the Industrial Revolution had been applied to a network of transport and communications, to an export-oriented sugar milling industry with giant factories commanding most of the best land on the island, to irrigation systems, to ancillary metal-working and heavy engineering industries, to the production of some urban middle-class consumer goods such as bread, soft drinks and ice, to construction materials such as bricks and timber and to public utilities such as gas and power." Howard Dick. "Chapter 1: State, nation-state and national economy." In: *The Emergence of a National Economy: An Economic History of Indonesia, 1800-2000* (17-18).

republics of Denmark, Luxembourg, post-1905 Norway, Sweden and Switzerland all had small populations, negligible navies, and purely defensive land armies. Like the Netherlands, the politics of Denmark, Norway and Sweden all tilted openly towards the British hegemon due to their dependence on British-guaranteed maritime trade and British export markets, while Luxembourg and Switzerland pursued a policy of Belgian-style neutrality due to their geographical status as landlocked states located on the borders of France and Germany.

Conversely, the constitutional monarchies of Bulgaria, Romania and Serbia and the Italian, Ottoman, Portuguese and Spanish empires were lightly industrialized economies, lacked contiguous land borders with the German empire, and had no compelling reason to fight on France's behalf. Given that the Japanese and Qing empires did not have the naval capacity to intervene in continental Europe during this time, the only two remaining candidates for France's anti-German alliance were the Austrian and Russian empires.

Both were eminently qualified for such an alliance thanks to their large populations, competent armies, and contiguous land borders with Germany. In addition, both were dynastic empires whose land-based model of expansionism did not threaten France's maritime empire in the slightest (Austria had no significant blue water navy while the small and bottlenecked Russian navy posed no danger to France's African, Asian or Caribbean colonies).

While a French alliance with either power was theoretically possible, there was a catch: any formal pact with one power would immediately drive the other to ally itself with Germany. The Romanov dynasty regarded the irredentist claims of independent Bulgaria, Greece, Serbia and Romania on the northwestern territories of the Ottoman empire as a crucial element of its long-term plan to seize Istanbul and the Turkish straits. Conversely, Austria's Hapsburg dynasty regarded the dissolution of the Ottoman empire as a mortal threat to the fabric of its own multiethnic empire. French elites thus had to make a binary choice between a French-Austrian alliance against a German-Russian alliance – a.k.a. continental Europe's greatest industrial power united with its greatest demographic power – or else a French-Russian alliance against a German-Austrian alliance.

Between 1873 and 1890, French elites avoided making a final decision and focused on rebuilding their army and expanding their Asian and African colonies. After 1890, however, the rapid population growth and industrialization of the Russian empire rendered any further debate superfluous. Below are the core populations and estimated GDP of a counterfactual Franco-Austrian alliance versus those of the actual Franco-Russian alliance:

Figure 32. Core population and GDP of counterfactual French-Austrian alliance versus the actual French-Russian alliance, 1880-1910.

Counterfactual Population and GDP			Historical Population and GDP	
Year	Franco-Austrian alliance	German-Russian alliance	Franco-Russian alliance	Austrian-German alliance
1880	75.4 million \$116.1 billion	142.9 million \$164.6 billion	135.2 million \$160.8 billion	83.1 million \$119.9 billion
1890	79.7 million \$135 billion	167.2 million \$217.6 billion	156.2 million \$197.1 billion	90.7 million \$155.5 billion
1900	84.1 million \$166.9 billion	189.3 million \$321.2 billion	171.8 million \$275.6 billion	101.6 million \$212.5 billion
1910	89.0 million \$185.2 billion	225.6 million \$427.1 billion	200.2 million \$338.8 billion	114.1 million \$273.5 billion

As early as 1880, a Franco-Austrian alliance would have faced a catastrophic population deficit of 1 to 1.9 and a GDP deficit of 1 to 1.4 vis-a-vis a putative German-Russian alliance, whereas a Franco-Russian alliance would already have enjoyed a population advantage of 1.6 to 1 and a GDP advantage of 1.3 to 1. These ratios became steadily more lopsided in favor of a Franco-Russian alliance over the next three decades. By 1910, a theoretical Franco-Austrian alliance would have resulted in a population deficit of 2.5 to 1 and a GDP deficit of 2.3 to 1, whereas the actual Franco-Russian alliance had increased its population advantage to 1.8 to 1 and held a stable GDP advantage of 1.2.⁶³⁹

What made the Franco-Russian alliance a key engine of French core neocolonialism was the divide between France's status as a core polity and Russia's status as a semi-periphery. After 1886, France became the single most important source of foreign direct investment and loans to the Russian empire. While this influx of French capital triggered a neocolonial boom in railroad construction, coaling mining, oil extraction, and other resource-intensive industries comparable to Britain's foreign direct investment in Argentina, Australia, Canada and South Africa, it also exacerbated the contradictions of the Russian empire's semi-peripherality in two ways.

First, most of the empire's post-1860 industrialization occurred in its easternmost colonies (the future Estonia, Latvia, Lithuania, Finland, Poland and Ukraine), precisely where the rest of the empire's Russian ethnic core and its Central Asian colonies were locked in stagnation. This limited industrialization generated a wide range of anti-imperial movements and

⁶³⁹ It should be noted that all of these ratios exclude the population and GDP of France and Germany's maritime colonies, which would have boosted the French position slightly but which would not have materially altered the final balance of forces.

anti-colonial nationalisms throughout the empire's non-Russian regions, and also created a restive pool of farmers-turned-proletarians in the metropolitan districts of St. Petersburg and Moscow. It also accelerated the immiseration of the Russian empire's vast rural periphery – a significant plurality of the populations of Belarus and Ukraine, the majority of its ethnic Russian population, and almost all of its Central Asian population.

Second, this limited industrialization could not resolve the fundamental external crisis bedeviling the Romanov dynasty ever since its 1854-1856 defeat in the Crimean war. This was the incapacity of the Russian empire to keep pace with the industrial expansions of its semi-peripheral Austrian, German and Japanese competitors, let alone those of the five core polities.

The single most striking economic expression of this crisis was the Russian empire's post-1887 transformation into the world's largest debtor polity. Most of this debt was owed to French investors, and by 1914 these latter owned four-fifths of Russia's total foreign debt.⁶⁴⁰ To guarantee its creditworthiness, the Russian empire adopted the gold standard in 1897, severely constricting credit growth within its domestic economy.

To repay the interest on its growing debt, the Russian empire began to export large quantities of agricultural commodities grown in colonized Ukraine to European markets via maritime shipping routes which passed through the Turkish straits. These exports generated desperately-needed foreign currency, but they also rendered the Russian empire increasingly vulnerable to Ottoman naval power.

One of the most insightful depictions of the Russian empire's basic geopolitical dilemma was recounted by Maxim Gorky's newspaper review of the Lumière brothers' cinema exhibition at the 1896 Nizhny-Novgorod Fair. Part of the text is worth quoting in detail:

When the lights go out in the room in which Lumière's invention is shown, there suddenly appears on the screen a large grey picture, *A Street in Paris* – shadows of a bad engraving. As you gaze at it, you see carriages, buildings and people in various poses, all frozen into immobility. All this is in grey, and the sky above is also grey – you anticipate nothing new in this all too familiar scene, for you have seen pictures of Paris streets more than once. But suddenly a strange flicker passes through the screen and the picture stirs to life. Carriages coming from somewhere in the perspective of the picture are moving straight at you, into the darkness in which you sit; somewhere from afar people appear and loom larger as they come closer to you; in the foreground children are playing with a dog, bicyclists tear along, and

⁶⁴⁰ “Between 1895 and 1914, the percentage of direct Russian imperial government debt held by foreigners jumped from 30 percent to 48 percent; a debt of 1,733 million rubles was held abroad in 1895, 4,229 million in 1914. During World War I, Russia borrowed an additional 6.4 billion rubles from France and Britain. In early twenty-first century terms, the total amount of imperial Russian government debt was well in excess of \$100 billion, adjusted for inflation, interest, and currency fluctuation. The bulk of the pre-war debt was in French hands—80 percent in 1914, with another 14 percent held by the British. The French also owned about one-third of the investment in private enterprise in Russia, while the British held approximately one quarter of Russian private debt, and the Germans held approximately one-fifth.” Jennifer Siegel. *For Peace and Money: French and British Finance in the Service of Tsars and Commissars*. Oxford: Oxford University Press, 2014 (2).

pedestrians cross the street picking their way among the carriages. All this moves, teems with life and, upon approaching the edge of the screen, vanishes somewhere beyond it.

And all this in strange silence where no rumble of the wheels is heard, no sound of footsteps or of speech. Nothing. Not a single note of the intricate symphony that always accompanies the movements of people. Noiselessly, the ashen-grey foliage of the trees sways in the wind, and the grey silhouettes of the people, as though condemned to eternal silence and cruelly punished by being deprived of all the colours of life, glide noiselessly along the grey ground.

Their smiles are lifeless, even though their movements are full of living energy and are so swift as to be almost imperceptible. Their laughter is soundless, although you see the muscles contracting in their grey faces. Before you a life is surging, a life deprived of words and shorn of the living spectrum of colours – the grey, the soundless, the bleak and dismal life.

It is terrifying to see, but it is the movement of shadows, only of shadows. Curses and ghosts, the evil spirits that have cast entire cities into eternal sleep, come to mind and you feel as though Merlin's vicious trick is being enacted before you. As though he had bewitched the entire street, he compressed its many-storied buildings from roof-tops to foundations to yard-like size. He dwarfed the people in corresponding proportion, robbing them of the power of speech and scraping together all the pigment of earth and sky into a monotonous grey colour.

Under this guise he shoved his grotesque creation into a niche in the darkroom of a restaurant. Suddenly something clicks, everything vanishes and a train appears on the screen. It speeds straight at you – watch out! It seems as though it will plunge into the darkness in which you sit, turning you into a ripped sack full of lacerated flesh and splintered bones, and crushing into dust and into broken fragments this hall and this building, so full of women, wine, music and vice.

But this, too, is but a train of shadows.⁶⁴¹

Confronted with the overwhelming onslaught of cinematic images from a core polity, Gorky responded with the semi-peripheral demographic adventurism which pervaded the Russian empire's foreign policy during Global Steam. This adventurism consisted of the despotic mobilization of imperial bodies to compensate for the empire's lack of industrial prowess, political legitimacy and cultural appeal vis-a-vis its competitors – a speculative despotic industrialism, as it were, meant to answer France's actual despotic industrialism. The lively Parisian street thus acceded to the shadowy engraving, the smile to the death-mask, the street to the mortuary, the City of Lights to the claustrophobic darkroom, and the speeding train to the pulverized bodies of the train wreck.⁶⁴²

In retrospect, the first and most famous of these Romanov demographic adventurisms was the 1861-1866 abolition of serfdom, which transformed wageless laborers into partly waged laborers (i.e. sharecroppers, landless rural laborers, craftspersons and subsistence farmers). After

⁶⁴¹ Maxim Gorky (under the pseudonym I. M. Pacatus). "Last night I was in the Kingdom of Shadows." *Nizhegorodsky Listok*. July 4, 1896. In: Jay Leyda. *Kino: A History of The Russian and Soviet Film*. Translated by Leda Swan. London: George Allen & Unwin, 1960 (407-409).

⁶⁴² Gorky's characteristically brusque conclusion: "...I also could suggest a few themes for development by means of a cinematograph and for the amusement of the market place. For instance: to impale a fashionable parasite upon a picket fence, as is the way of the Turks, photograph him, then show it.

It is not exactly piquant but quite edifying." Maxim Gorky, *Kino* (409).

1866, the dynasty deployed three additional variants of demographic adventurism. These latter were West Asian maritime expansionism, East Asian railroad expansionism, and overseas migrationism.

The goal of the first adventurism was to safeguard the empire's Ukrainian agricultural exports by seizing the Turkish straits and Istanbul (Constantinople) from the Ottoman empire. The goal of the second was to annex Manchuria from Qing China, by launching the construction of the trans-Siberian railroad in 1891. The goal of the third was to defuse the explosive internal pressures generated by a lack of genuine land reform by exporting potentially troublesome surplus farmers and rural laborers to the United States (according to US Census data, a total of 2.38 million subjects of the Russian empire migrated to the US between 1902 and 1914).

All three demographic adventurisms were on prominent display in the Russian pavilion at the 1900 Paris world exposition, which refunctioned the US settler-colonial spectacle of the wild west into the Russian imperial spectacle of the wild east. The pavilion consisted primarily of natural resources and displays which enumerated the empire's population. There was even a simulated railroad stop in Peking, as if to remove the slightest doubt about the empire's imperialist goals:

The Russian exhibits appeared to have the narrow aim of impressing the potential French investor. Russia had last exhibited in Paris in 1867. The new displays were designed to show how she had changed since then. Russian industrialists exhibited a few boilers, some textile machinery, and a few examples of electrical equipment. One Russian exhibit was a grotesque pagoda made only of domestically produced metal tubing. However, most avidly watched were samples of raw materials – furs, ores, coal, precious stones, gold, wheat, oil – and statistical tables showing Russia's large and growing population.

The carillon of the Imperial [Russian] pavilion often played Russian and French hymns or the two countries' national anthems alternately. A popular curiosity at the exposition was a map of France made by the jewelers of Tsarskoye Selo. It showed France all in precious minerals and rare metals, set in a heavy, ornate frame draped with maroon velvet; each departement [French: district] was of a different gemstone. Naturally there were several varieties of malachite and lapis lazuli, both Russian specialties. Railway lines were indicated by fine wires of platinum. Paris was a large ruby, Le Havre an emerald, Rouen a sapphire, and so on. The name of each city was written in gold.

Part of the Russian national exhibit was a joint venture with the travel company Wagon-Lits Cook. This was the pavilion of Asiatic Russia. Visitors sat as passengers on the Trans-Siberian Railroad. The carriages left 'Moscow station' and rolled east as scenes of the Caucasus, the steppes, and of the wilds (and the riches, to inspire confidence) of Siberia rolled by the windows on a long canvas. There were also posed vignettes of Siberian and Chinese natives. The 'trip' ended when a Chinese boy went through the cars serving jasmine tea, shouting, 'Peking! All change here!'⁶⁴³

None of these three demographic adventurisms ameliorated the Russian empire's worsening geopolitical position. Its West Asian adventurism wasted scarce resources on Serbian irredentism and a hopelessly bottlenecked Black Sea fleet. It did not address the local

⁶⁴³ Richard D. Mandell. *Paris 1900: The Great World's Fair* (79).

anti-colonial nationalisms at the heart of the post-1878 decline of the Russian empire's influence in the Balkans,⁶⁴⁴ it convinced the Ottoman empire to ally itself with Austria and Germany, and it co-ignited the third supercycle in concert with Austria's smaller but equally catastrophic demographic adventurism.⁶⁴⁵

The Russian empire's East Asian adventurism was similarly counterproductive. Christian Wolmar has made a convincing case that the trans-Siberian railway was an economic albatross as well as a military failure, whose only real value was its capacity to generate newspaper headlines and subsidize rent-seeking dynastic elites.⁶⁴⁶ Even worse, this adventurism made a head-on collision with Japanese expansionism in East Asia inevitable.

⁶⁴⁴ "The state came out of the Russo-Turkish War and the Bulgarian complications in a much worse strategic and diplomatic position than before. After the Congress of Berlin, Russia was isolated: the Three Emperors Alliance was temporarily in disarray, Britain remained an opponent, and France was still too weak to provide alternate support. The situation deteriorated further in the 1880s. By 1890 the alliance relationship with Berlin and Vienna had been permanently broken and, despite the contribution that Russian military support had indeed given, the Russian government had no close friends among the Balkan states, with the possible exception of Montenegro. The cool relationship with Romania and Bulgaria was a strategic problem for the Black Sea power; there was now no easy land road to Constantinople should another Eastern crisis occur." Barbara Jelavich. *Russia's Balkan Entanglements 1806-1914*. Cambridge: Cambridge University Press, 1991 (196).

⁶⁴⁵ Between 1878 and 1914, Hapsburg Austria doubled down on Balkan interventionism (cf. its 1908 annexation of Bosnia), pursued a foreign policy of ever-increasing bellicosity vis-a-vis its Serbian and Russian neighbors, and exported significant numbers of impoverished farmers and landless peasants to America (3.13 million immigrants from the Austrian empire arrived in the US between 1900 and 1914).

⁶⁴⁶ "The motivations behind the railway's creation and the inadequacies in its construction would ensure that it was not, in modern parlance, 'fit for purpose'. The railway, which was single track throughout with the occasional passing loop, had, unsurprisingly, been built to a deficient standard in virtually every way. The permanent way was flimsy, with lightweight rails which broke easily, insufficient ballast and sleepers often carved from green wood that rotted in the first year of use. The small bridges were made of soft pine and rotted easily (though fortunately the large ones were well constructed and several survive in their original form today), the embankments were too shallow and narrow, often just ten feet wide instead of the sixteen feet prescribed in the design, and easily washed away. There were vicious gradients and narrow curves which wore out the flanges on the wheels of the rolling stock after as little as six weeks' use.

From an operational point of view, there were insufficient passing places and sidings, and initially the railway was expected to carry just three trains per day in each direction. Its inadequacies were highlighted in the Russo-Japanese War of 1904-1905. The Japanese, who wanted to establish power over Manchuria and Korea, had correctly calculated that the railway would not have sufficient capacity to bring large numbers of troops eastwards, and launched their war confident that they would not find themselves outnumbered by the rapid deployment of fresh troops. Despite recent improvements to the line including the completion of the route along the cliffs of Lake Baikal, the Russians were beaten both on land and at sea, and when the defeated troops used the railway to return home, delays caused by lack of capacity led to a revolt which left the railway in the hands of mutineers and rebels for several days." Christian Wolmar. *Blood, Iron and Gold: How the Railways Transformed the World*. London: Atlantic Books, 2009. Chapter 7.

While migrationism mitigated the Russian empire's chronic labor surplus over the short run, the chronic outflow of immigrants (especially members of the Jewish community, who had higher-than-average rates of literacy and education) signaled the fundamental stagnation of Russia's semi-peripheral economy vis-a-vis the core polities over the long run.

The case of post-1894 US core neocolonialism was the most complex of them all. Whereas French core neocolonialism emerged in the wake of the Franco-Russian alliance of 1894, asserted its primacy in the diplomatic resolution of the 1898 Fashoda crisis, and culminated in the British-French entente of 1904, the US version of such emerged in the wake of the Spanish-American war of 1898, asserted its primacy in the 1901 Hay-Pauncefote treaty acknowledging US control over the future Panama canal, and culminated in US President Roosevelt's mediation of the 1905 Treaty of Portsmouth which concluded the Russo-Japanese war.⁶⁴⁷

That said, two factors differentiated US core neocolonialism from its Belgian, Dutch and French counterparts. First, the US had always enjoyed an unprecedented range of economic, political and cultural links with its former British ruler. These ties included centuries of significant inflows of British migrants, technology, capital and foreign direct investment, a common language, a common history of settler colonialism, a common ideology of imperial white masculinity,⁶⁴⁸ a common experience of mass electoral participation, and extensive

⁶⁴⁷ The treaty was named after Portsmouth, the United States' oldest continuously operating shipyard, located on the Atlantic coast near Kittery, Maine.

⁶⁴⁸ Bradford Perkins delivered the classic version of this analysis: "None of these strands – declining American criticism of British imperialism, the erosion of British defensiveness, an awareness of similar interests – would have become so strong had not the two imperialisms shared a virtually identical ideology. While late-nineteenth-century imperialism was a worldwide phenomenon and many nations reacted to very much the same stimuli, the tone and style and motives of British and American imperialism were particularly close. They had far more in common with one another than with those of Germany, France, Russia, or Japan. To an unusual degree the English-speaking powers shared a feeling of uncomfortableness with the drift of contemporary life which they hoped to exorcise by vigorous action at home and abroad; neither the Japanese nor the Germans shared this feeling. The Anglo-Americans viewed in nearly identical ways the economic problem posed, as they saw it, by overproduction at home and the closing of markets abroad; the economic arguments for imperialism in less industrialized countries were rather different. All imperial powers assumed themselves to be superior to those they subdued, and all in one way or another considered themselves to be bestowing important benefits – security, prosperity, spiritual vigor – upon those they ruled. Still, the concept of 'the white man's burden,' as Westerners called it, particularly infested the United States and England. In addition, the racist sentiments underlying imperialism suggested a closer relationship between those two than between any other major powers. The British and American peoples were drawn together by their rationalizations for imperialism just as they were by the policy itself." Bradford Perkins. *The Great Rapprochement: England and the United States, 1895-1914*. New York: Atheneum, 1968 (68-69). Also see Priscilla Roberts' useful summary: "The Atlanticist perspective was underpinned by popular social Darwinist ideas of the superiority of the Anglo-Saxon or English-speaking nations current in the late nineteenth and early twentieth centuries, the belief disseminated by numerous influential historians and political theorists that the Anglo-Saxon race, in effect the British and Americans, was uniquely capable of self-government, shared a common legal, political, and institutional heritage, and had evolved the world's best and most democratic political

intermarriage between American and British elites.⁶⁴⁹

Second, the US was almost never in direct competition with the British empire for most of the 19th century due to its exclusive focus on the settler colonization of its western frontiers. After 1862, the US was a self-financing core polity whose vast population, continental size, and powerhouse economy rendered it immune to Belgian, British, French and Dutch maritime colonialism or economic neocolonialism. Nor did it share a land border vulnerable to invasion by the Austrian, German, Italian, Japanese, Ottoman, Portuguese, Russian, or Spanish empires of the semi-periphery. Last but not least, the United States enjoyed unencumbered all-weather access to both the Atlantic as well as the Pacific oceans.

Thanks to these factors, US elites launched their maritime expansionism in the 1870s and 1880s out of primarily commercial and neocolonial rather than dynastic or colonial motives. Put bluntly, where Belgian, Dutch and French core neocolonialism were primarily by military necessity and secondarily by commercial opportunity, US core neocolonialism was driven primarily by commercial opportunity and only secondarily by military necessity.

Paul Koistinen has provided one of the best accounts of how the key institutions of the US navy were created during this period, most notably the US Naval Institute in 1873, the US Office of Naval Intelligence in 1882, and the US Naval War College in 1884.⁶⁵⁰ These

institutions to date. Such views were often used to justify imperial rule, which, its supporters argued, provided good government to peoples otherwise incapable of running their own affairs in an orderly fashion. Calls for Anglo-American concord and cooperation thus rested on a sense of racial kinship, reinforced by a variety of business, political, intellectual, personal, and familial ties linking British and American elites.” Priscilla Roberts (2007). “The First World War as Catalyst and Epiphany: The Case of Henry P. Davison.” *Diplomacy and Statecraft* 18:2 (316). DOI: 10.1080/09592290701322457.

⁶⁴⁹ “A stream of marriages most visibly manifested the upper class entente. Marrying the Yankee dollar was not unknown to other nationalities nor historically unprecedented; in 1906, six of the heads of diplomatic missions in Washington had American wives, and wealthy American girls had found British husbands at least since the 1790s. This period [i.e. 1895-1914], however, marked the peak of the traffic. In 1895, a particularly popular year for benedicts [i.e. newly-weds], Consuela Vanderbilt reluctantly espoused the Duke of Marlborough, Mary Leiter bestowed a fortune gained by her father as a Chicago merchant and real-estate speculator upon George Nathaniel Curzon, Pauline Whitney entered the peerage as Lady Queenborough, and Maud Burke, a California heiress, married Sir Bache Cunard. Some seventy such marriages took place before 1903, perhaps another sixty by 1914, almost all involving financial settlements. A few marriages, like the earlier ones of Chamberlain and Harcourt, united families of similar social position, but in most cases the American girls came from the newly rich. Sometimes wealth joined to wealth, as in May Goclet's marriage to the Duke of Roxburghe in 1903 or the Burke-Cunard union, which led to creation of a famous London salon, but more often the bride's money predominated. A sober economist concluded in 1901 that dowries and settlements drained the United States of several millions of dollars a year.” Bradford Perkins, *The Great Rapprochement* (151-152).

⁶⁵⁰ “Key to this process was the creation of several institutions and the introduction of new practices. The former included the U.S. Naval Institute, founded in 1873, the Office of Naval Intelligence, created in 1882, and the Naval War College, established in 1884. Beginning in 1881 and continuing into the twentieth century, the secretaries of the navy, acting alone or at the discretion of Congress, created various boards of naval officers to advise and assist them with the composition of the fleet, ship construction, navy yard operations, differences between the line and staff, and, in conjunction with the army, coastal

institutions and their corresponding academic and political networks catalyzed the expansion of US naval power in much the same way land grant universities and the expansion of higher education catalyzed the post-Civil War economic expansion of the US.⁶⁵¹

As early as 1887, the US Naval Institute had grown to include 787 members, including officers, naval architects, mechanical engineers, steel manufacturers, and military contractors. That same year, a total of 1,350 individuals as well as numerous libraries and colleges all across the country subscribed to its quarterly publication.⁶⁵² By 1891, US Rear Admiral Stephen Luce expressed the neocolonial strategy of US core integration with perfect clarity (albeit with the metaphor of a British-dominated Mediterranean standing in for an American-dominated Caribbean):

From the ‘blue Cyclades’ [the Greek islands of Mykonos, Paros, Santorini and Thira] to the slopes of the Pacific, war has made possible the slow, but certain, development of the great law of human progress, and of the principles of democracy. The operation of this law is not to be arrested on the hither shores of the Pacific; nor is history to be turned back. The course of empire still holds its accustomed sway. With the United States, as the dominant power of the western world, lies the obligation of contributing her share to the further extension of civilization, to the spreading of the gospel, and conveying to less favored nations the most enlightened views of civil government. Peaceful commerce is one of the forces by which this end may be attained; and the Pacific and its further shores the field of its operations. This splendid work our people are now content to leave to England and those most effective missionaries, her military and mercantile marines. The time will come, however, when the [US] nation, in its manhood, will ‘put away childish things’, assume its own high responsibilities, and organize its forces for practical use.⁶⁵³

This is why the triumph of core neocolonialism in the US cannot be explained away as the accidental outcome of the explosion which destroyed the USS Maine in Havana’s harbor in

fortifications. Additionally, as international tensions mounted, existing and ad hoc agencies began to plan for war.” Paul A.C. Koistinen. *Mobilizing for Modern War: The Political Economy of American Warfare, 1865-1919*. Lawrence: University of Kansas, 1997 (22).

⁶⁵¹ “The Naval College was created as a postgraduate school to put [Stephen B.] Luce’s ideas into action. Starting with a few rundown facilities at Newport, Rhode Island, in September 1885, the NWC began with a program of lectures and independent study, advanced to war problems, games, and planning and tactical fleet exercises, and became a research center for the General Board. Together, the board, the ONI [Office of Naval Intelligence], and the NWC acted as the general staff the navy lacked. Luce served as the college’s first president, followed by Capt. Alfred Thayer Mahan, who had two tours, 1886-1889 and 1892-1893. In a sense, the presidency of Capt. Henry C. Taylor, between 1893 and 1897, was among the most important in the institution’s history. As politically astute and strategically talented as Luce, and as the moving force on behalf of a general staff for the navy, Taylor saved the NWC from its numerous enemies within the navy by reaching out to businessmen, politicians, and community leaders for protection.” Paul A.C. Koistinen, *Mobilizing for Modern War* (24).

⁶⁵² United States Naval Institute, 1873-1887. *Proceedings* 13:1 (40).

<https://www.usni.org/magazines/proceedings/1887/january/united-states-naval-institute-1873-1887>

⁶⁵³ Stephen B. Luce (1891). “The Benefits of War.” *The North American Review* 153:421 (674-675).

1898, any more than World War I is to be explained away as the accidental outcome of a single assassin's pistol. Rather, the sinking of the *Maine* was the culmination of five smaller explosions between 1894 and 1897, which collectively functioned as the tripwire of 1898.

The first of these detonations was Japan's war of colonial adventurism in 1894-1895, the second was Cuba's anti-colonial national uprising which began on February 24, 1895, the third was the Philippines' anti-colonial national uprising which began in August 1896, the fourth was the US settler-colonial annexation of Hawaii which became an official US foreign policy goal in 1897, and the fifth was Assistant Secretary of the Navy Teddy Roosevelt's vigorous 1897 lobbying campaign on behalf of a significantly expanded US navy as well as a future US-controlled Panama canal.⁶⁵⁴

The first part of this tripwire was Meiji Japan's strategy of colonial adventurism. This latter was by no means an unprovoked assault on Japan's neighbors, but rather an improvised response to the external threat of British, Dutch, French, Russian and US maritime expansionism as well as the internal demands of an emergent national electorate. Learning the lessons of the successive failures of France's Second Empire in 1866 and the United States in 1871 to open trade links with Korea, Meiji Japan employed gunboat diplomacy in 1875-1876 to compel the Joseon authorities to accept the permanent presence of Japanese traders as well as extraterritorial status for Japanese citizens.⁶⁵⁵

⁶⁵⁴ "In 'an entirely confidential' letter written from Washington [DC] in 1897, [Teddy] Roosevelt told [Alfred] Mahan that the Nicaragua canal [the predecessor of the Panama canal] should be built 'at once' and, in the same breath, that 'we should build a dozen new battleships'. By then, through the influence of Lodge, who had been primed by Mahan, Roosevelt had been made Assistant Secretary of the Navy and had entered upon his duties characteristically, as if accompanied always by a band playing Sousa's 'Stars and Stripes Forever'. He visited shipyards, poked his nose into technical matters, from ordnance to dry docks, went out on maneuvers. From a richly carved desk in the State, War, and Navy Building, with John Paul Jones looking down from a gold frame and a big, glass-cased model of Dewey's flagship, *Olympia*, standing within arm's reach, he mapped global strategy and fired off letter after letter to congressmen [sic] and newspaper editors, urging more ships, improved weapons. 'Gradually', he would recall, 'a slight change for the better occurred, the writings of Captain Mahan playing no small part therein.'" David McCullough. *The Path Between the Seas: The Creation of the Panama Canal 1870-1914*. New York: Simon & Schuster, 1977 (253).

⁶⁵⁵ "In September 1875, in a deliberate effort to confront [the Korean dynasty of] Chosŏn, the Japanese warship *Unyo Maru* sailed to Korean waters off Kanghwa-do, under the cloak of surveying Korean coastlines. The ship was promptly fired on by Chosŏn defenders at the Ch'oji-jin fort on the southeastern tip of the island. As planned, the Japanese government strongly protested that Chosŏn had made an unprovoked attack on a Japanese ship engaged in a peaceful mission, when, in fact, the true intent was to create a disturbance. In the ensuing period, the *Unyo Maru* destroyed the Ch'oji-jin fort, and a Japanese detachment occupied the nearby Yŏngjong-jin fort, killing 35 Korean defenders and taking 16 prisoner before withdrawing. In late January 1876, using the *Unyo Maru* incident as a pretext, Japan dispatched a minister plenipotentiary, Kuroda Kiyotaka, along with five warships and some 400 troops, to Chosŏn; Kuroda landed on Kanghwa-do and demanded that Chosŏn enter into treaty negotiations with Japan. Although it could have withstood this pressure (as it had previously with the the French and the Americans in 1866 and 1871, respectively), the Chosŏn government decided to negotiate a modern, Western-style treaty with Japan and sent Sin Hŏn to receive Kuroda and negotiate with him. The result

Alarmed by Japanese encroachment, Korean elites tried to implement their own version of Japan's Meiji modernization strategy by signing treaties granting trade access with the United States (1882), Britain and Germany (1883), Italy and Russia (1884), and France (1886). However, the Joseon dynasty was unable to keep pace with Japan's naval expansion. Japan began constructing a blue water navy by purchasing two ironclad corvettes and an ironclad battleship from Britain in 1877,⁶⁵⁶ and hiring French engineer Émile Bertin to oversee its shipyard expansion between 1885 to 1889.

French maritime expansionism additionally contributed to the worsening of Korea's geopolitical position, due to its colonization of northern Vietnam in 1883. This triggered the Sino-French War of 1883-1885, a sustained French maritime and land campaign against Qing Chinese forces stationed in Vietnam and Taiwan. While the Qing army fought the French to a draw in Taiwan, the Qing expeditionary army in Vietnam was defeated. France occupied the remainder of Vietnam in 1885, and later annexed Cambodia in 1887 and Laos in 1893. This spelled the end of Vietnam's role as an East Asian intermediary state, and made it increasingly difficult for the Joseon dynasty to play off the Qing and Japanese empires against each other.

At the same moment French armies were occupying Vietnam, the Meiji authorities had to contend with pressure from their own citizens in the form of the Japanese Freedom and Civil Rights Movement (自由民権運動 or "Jiyū minken undō," dubbed 自由党 or "Jiyūto" for short) of the 1880s.⁶⁵⁷ The Jiyūto movement mobilized significant numbers of disaffected farmers,

was the Treaty of Kanghwa or the Friendship Treaty of 1876, signed on 26 February 1876." Jinwung Kim. *A History of Korea: From 'Land of Morning Calm' to States in Conflict*. Bloomington: Indiana University Press, 2012 (286-287)

⁶⁵⁶ "Launched in British yards at the end of the 1870s, the armored, steel-hulled frigate *Fuso* and the armored corvettes *Kongo* and *Hiei* were the first warships built abroad specifically for the Japanese navy. Designed by the distinguished naval constructor Sir Edward Reed, these were steam-driven, barque-rigged vessels of superior quality for their day. Because Japanese navigational and technological skills were still inadequate, the three ships, upon completion, were brought to Japan by British crews, with only a few Japanese aboard (one of whom on the *Hiei*, Togo Heihachiro, was the future victor of Tsushima). Once they arrived in Japan, the vessels provided vital experience to Japanese officers and men in handling steam warships. These construction projects also gave neophyte Japanese naval architects the chance to go to Britain to learn their trade and to observe firsthand the construction methods of contemporary warships and the options available in ordnance and protection. Among those young constructors selected for this training was the future father of Japanese naval architecture, Sasō Sachū." David C. Evans and Mark R. Peattie. *Kaigun: Strategy, Tactics, and Technology in the Imperial Japanese Navy, 1887-1941*. Annapolis: Naval Institute Press, 1997 (14).

⁶⁵⁷ "In Fukushima, for example, a coalition of priests, farmers, craftsmen and teachers carried out a protest movement late in 1882 against the autocratic governor Mishima Michitsune that included rallies, tax boycotts, work stoppages, massive demonstrations, and litigation. And when Mishima had nearly two thousand of them arrested, antigovernment groups sprang up elsewhere. Some three thousand farmers attacked a moneylender's home and captured a police station in May 1884 in Gunma. Four months after that, a handful of liberal leaders attempted an unsuccessful revolution near Mt. Kaba near Utsunomiya. And in November 1884, more than six thousand peasants were brutally put down after rising in rebellion against taxes and insensitive officials in Chichibu, northwest of Tokyo. Indeed, more than eighty clashes between police and impoverished, tax-burdened peasants were recorded between 1882 and 1885. And in

merchants and teachers against arbitrary taxation, and also inaugurated Japan's democratic protest culture via the *enka* songs of Soeda Azembō.⁶⁵⁸ Meiji elites responded with a combination of ferocious short-term repression as well as long-term concessions such as the Meiji constitution of 1889, and by launching colonial adventurisms against Korea and Taiwan.

The immediate trigger of the 1894-1895 Sino-Japanese war was the eruption of the anti-dynastic Donghak uprising in Korea. Meiji elites seized this opportunity to crush the uprising and transform the Joseon dynastic order into a neocolonial comprador state (Japan's minister to Korea at the time, Inoue Kaoru, openly referred to Britain's colonization of Egypt in 1882 as a model for this predation).⁶⁵⁹ Japan's intervention triggered a naval and land war with Qing China, resulting in Meiji Japan's first colonial genocide:

Unlike the long-drawn-out bloody battle fought there ten years later, Port Arthur [i.e. Dalian] fell on 21 November 1894 in a single day after an intensive bombardment, when an assault of the forces of the Japanese Second Army, about 18,000 strong, led by General Oyama Iwao overwhelmed a feeble opposition from a Chinese force of about 12,000. Japanese casualties were slight, about 280 in total. The Japanese troops entered the city on the same day, and for four days eyewitnesses, mostly Japanese soldiers and sailors, recorded what they had seen. There is little doubt that the Japanese troops indiscriminately killed 'thousands' of Chinese soldiers and civilians. Reports of this in the New York World (12 December 1894) attracted wide attention.⁶⁶⁰

Japan subsequently annexed the Qing Chinese province of Taiwan as well as the Pescadores Islands, and planned to turn Port Arthur into a permanent maritime base. However, this short-term victory generated two disastrous long-term outcomes.

First, it inaugurated the East Asian doom loop by accelerating the Russian empire's East Asian railroad expansionism. Russian diplomats organized the Tripartite Intervention of the French, German and Russian empires in April and May 1895 to compel Japan to withdraw its army from Port Arthur and the Liaodong peninsula. Since the combined Pacific fleets of France, Germany and Russia far outclassed Japan's navy at the time, Meiji elites had no choice but to

almost every case, rebel leaders were affiliated somehow with the *jiyû minken* movement and the journalists who carried its torch." James L. Huffman. *Creating a Public: People and Press in Meiji Japan*. Honolulu: University of Hawaii Press, 1997 (121-122).

⁶⁵⁸ Soeda Azembō. *A Life Adrift: Soeda Azembō, Popular Song, and Modern Mass Culture in Japan*. Translated and edited by Michael Lewis. Oxon: Routledge, 2010.

⁶⁵⁹ "What was England's pretext for intervening in Egypt? Was it not in the fact that England had obtained a position of real interest there by supplying Egypt with capital? I firmly believe that if we wish to solidify our position in Korea and establish a pretext for intervention in its internal affairs, we must obtain real interests there, whether through railroads or through loans, and by financial means create pretexts for extending our intervention to other kinds of relationships." Mark Metzler. *Lever of Empire: The International Gold Standard and the Crisis of Liberalism in Prewar Japan*. Berkeley: University of California Press, 2006 (40-41).

⁶⁶⁰ Chushichi Tsuzuki, *The Pursuit of Power in Modern Japan 1825-1995* (128).

comply.

The moment Japanese forces departed, the Russian empire promptly seized Port Arthur and built the Chinese Eastern Railway between 1897 and 1902, greatly increasing its neocolonial sway throughout Manchuria. At the same time, the German empire was also rewarded with the informal occupation of Shandong. As partial compensation, the Japanese empire was permitted to extract a greatly enlarged financial indemnity from the Qing, which was financed via loans to Qing China floated on London's capital markets. "Thus, after the fact," concluded Mark Metzler, "Japan's [1894-1895] war against China was *entirely funded by the European capital markets* [italics in original]." ⁶⁶¹

This obvious double-dealing enraged Japanese public opinion against the French, German and Russian empires, and gave the Meiji authorities the necessary popular legitimacy to launch an expensive program of naval expansion. Whereas the German empire was unable to purchase ships from the core polities of Britain or France after 1898, the British empire explicitly underwrote Japan's naval expansion between 1896 and 1904. ⁶⁶² Chushichi Tsuzuki has summarized this support:

Out of forty-four [Japanese] naval vessels of 194,473 tons in total, launched between the end of the Sino-Japanese War and 1904, as many as twenty-seven (133,367 tons in all, sixty-six per cent of the total) were built in Britain. All six battleships of 13,500 to 15,000 tons were British-made. Four out of six armored cruisers were also built in Britain. Home-made vessels, mostly small cruisers, destroyers, and communication ships, launched from the Yokosuka and Kure naval yards, formed only 8.5 per cent of the total naval strength. 'As far as major warships were concerned, the Japanese navy was a sub-species of the British navy.' British coal was used to fuel warships in the war with Russia when it came. ⁶⁶³

The second disastrous long-term outcome was that the US empire now began to regard the Japanese empire as a serious competitor and maritime adversary. The political forces of

⁶⁶¹ "The total indemnity of 230 million silver taels was equal to £38 million, or ¥356 million – entirely covering the Japanese government's war expenses of ¥233 million and yielding a profit of ¥123 million. Payment in gold compounded the profits: from October 1895 until the payment of the last installment in May 1898, the price of silver on the London market fell 20 percent. Sakatani Yoshio reckoned the added gain for Japan (and loss for China) to be ¥65 million.

The Bank of England had previously refused to open an account for the Yokohama Specie Bank. Now that the Japanese came with the Chinese money in hand, it did so. In fact, the money itself had been raised in London and other European capital markets. The final installment of the Chinese debt was by far the largest check ever drawn on the Bank of England up to that time." Mark Metzler, *Lever of Empire* (31).

⁶⁶² "Thus, 90 percent of the 234,000 tons of naval construction contracted for under the ten-year beginning 1896-97 was to be foreign built and, when completed, would comprise 70 percent of the Japanese fleet. Of this tonnage, the overwhelming portion was built in British yards." David C. Evans and Mark R. Peattie, *Kaigun* (60).

⁶⁶³ Chushichi Tsuzuki, *The Pursuit of Power in Modern Japan 1825-1995* (169).

industrial racism and Jim Crow apartheid in the US had previously singled out Chinese immigrants for discrimination in the form of the 1875 Page Act, which limited the entry of Chinese women, and the 1882 Chinese Exclusion Act, which prohibited the entry of Chinese males. However, it was not Chinese immigration to the continental United States but rather the specter of Japanese immigration to Hawaii which played a crucial role in US President McKinley's decision to annex Hawaii as a US territory in 1897 (a decision not fully carried out until 1898).⁶⁶⁴

We are now in a position to grasp how and why the Sino-Japanese war of 1894-1895, the anti-colonial national uprisings of Cuba and the Philippines, along with the construction of the Panama canal, formed the tripwire of 1898. The US had not intervened in Cuba's first anti-colonial uprising, the 1868-1878 Ten Years War, for three good reasons. First, US elites had no vital national interest at stake in the conflict. Second, the US lacked a blue water navy. Third, the US electorate was focused primarily on acquiring farmland in western territories and was uninterested in Caribbean adventurism (this disinterest was one of the main reasons President Grant failed to win Senate approval for the planned annexation of the Dominican Republic in 1869).

Two decades later, all three factors swung in favor of intervention. First, US elites now had a vital economic interest in Cuba in the form of the sugar industry. The US accounted for about one-fifth of world sugar consumption between 1894 and 1914, and almost all Cuban sugar was sent to US markets, where it satisfied about one-third of national demand.⁶⁶⁵ The US sugar refining industry proper was a rapacious monopoly controlled by plutocrat Henry Haveland, one of the largest funders of the Republican Party,⁶⁶⁶ while US sugar tariffs exerted a neocolonial

⁶⁶⁴ "Inside two weeks of taking office, [President] McKinley revealed his position: to annex Hawaii to the United States. The president and his cabinet were keenly sensitive to hugely growing numbers of Japanese agricultural immigrants working the sugar and fruit plantations. It had reached twenty five thousand people, about a quarter of the entire population and three times the number of whites. The Hawaiian government had refused to admit the latest coolie contingent, prompting an official protest from Japan. The Imperial Navy's cruiser *Naniwa* came to Honolulu in May 1897, and there was talk of further naval responses, increasing the diplomatic pressure.

In early June, McKinley sent a Hawaiian treaty of annexation to Congress, prompting a protest by the Japanese minister in Washington. The US Navy, which had just completed its first war plan envisioning conflict with Japan, dispatched reinforcements to Hawaii." Ivan Musicant. *Empire by Default: The Spanish-American War and the Dawn of the American Century*. New York: Henry Holt, 1998 (105).

⁶⁶⁵ "In the 1890s, Cuba sent more than 85 percent of its sugar exports to the United States; after 1900, about 99 percent of Cuba's sugar was destined for the United States." Douglas A. Irwin (2014). "Tariff Incidence: Evidence from US Sugar Duties, 1890-1930." Working Paper 20635 (3, 5). <http://www.nber.org/papers/w20635>.

⁶⁶⁶ "In 1887, the American Sugar Refining Company (ASRC) was formed with the consolidation of 18 firms that controlled 80 percent of the industry's capacity (Genesove and Mullin 1998). The subsequent increase in the price of refined sugar led to the entry of new producers, the first of which began production in December 1889, sparking a two-year price war. This led the ASRC to buy out its competitors, a process that was complete by April 1892, at which point it controlled 95 percent of the

stranglehold on the economies of Cuba, Hawaii, the Philippines and Puerto Rico.⁶⁶⁷

Second, the size of the US navy increased dramatically from just one modern cruiser in 1886 to seven modern cruisers by 1890, sixteen cruisers by 1894, and six battleships and sixteen cruisers by the end of 1897. This quantitative expansion was matched by a quantum leap in quality. The US navy had 38 ships in 1886, but only two were modern steel-hulled craft, 34 were iron-hulled craft and four were sailing vessels. By contrast, 49 out of the 72 ships the US Navy operated in 1897 were modern steel-hulled craft with triple-expansion steam engines, twenty-two were iron-hulled, and only one was a sailing vessel.⁶⁶⁸

Third, the Republican party wrested control of the Senate and the House of Representatives from the Democrats in 1894 and would retain control of the House until 1910 and the Senate until 1912, while the Presidency was occupied by Republicans from 1897 until 1913. The foreign policy of the Republicans was a combination of opportunistic settler colonialism and maritime neocolonialism epitomized by Teddy Roosevelt's notorious comment in a letter written to Henry Sprague on January 26, 1900: "I have always been fond of the West African proverb, 'Speak softly and carry a big stick; you will go far.'"⁶⁶⁹

There is no record of any such proverb in any West African polity, and Roosevelt's 1901 address which transformed this saying into official policy would excise any reference to Britain's colonial periphery and focus instead on the importance of upholding the political credibility of the US vis-a-vis the British hegemon.⁶⁷⁰ What the final version of the saying accurately conveyed

nation's refining capacity. Subsequent entry eroded the ASRC's market share, but the entry of two large plants in late 1898 sparked another price war that lasted until June 1900, when some of the competitors consolidated their firms. However, by the early 1900s, the ASRC's market share had fallen to about 60 percent." Douglas A. Irwin, "Tariff Incidence: Evidence from US Sugar Duties, 1890-1930" (6-7).

⁶⁶⁷ "Cuba, Puerto Rico, the Philippines, and Hawai'i were not all ruled by Spain, but they were all ruled, in different degrees, by sugar. Tariff policy was the lever that gave the United States the power to influence states and economies in the Caribbean and Pacific. Wealth from sugar funded political parties in the islands during the period of American colonial rule. Reciprocity treaties were supplementary bilateral agreements that modified the general tariff. They had little influence on the volume and direction of U.S. commerce but were matters of life and death for the small countries affected by them. U.S. tariff policy was not designed to assist the long-run development of the sugar islands, but was the capricious outcome of domestic political rivalries." A.G. Hopkins. *The American Empire: A Global History*. Princeton: Princeton University Press, 2018 (389-390).

⁶⁶⁸ Naval History and Heritage Command. "US Ship Force Levels 1886-present." United States Navy. <https://www.history.navy.mil/research/histories/ship-histories/us-ship-force-levels.html>.

⁶⁶⁹ Theodor Roosevelt (1900). Letter to Henry L. Sprague. US Library of Congress. <https://web.archive.org/web/20160908212906/http://www.loc.gov/exhibits/treasures/trm139.html>.

⁶⁷⁰ Roosevelt's 1901 speech "National Duties" deleted the reference to British colonialism and hastened to reassure: "A good many of you are probably acquainted with the old proverb: 'Speak softly and carry a big stick – you will go far.' If a man continually blusters, if he lacks civility, a big stick will not save him from trouble; and neither will speaking softly avail, if back of the softness there does not lie strength, power. In private life there are few beings more obnoxious than the man who is always loudly boasting; and if the boaster is not prepared to back up his words his position becomes absolutely contemptible. So it is with the nation. It is both foolish and undignified to indulge in undue self-glorification, and, above all, in loose-tongued denunciation of other peoples. Whenever on any point we come into contact with a

was the post-1898 restructuring of US imperial masculinity away from coercive land acquisition and towards negotiated mobility.

Instead of directly contesting the British hegemon for control of the world's oceanic trade routes, US elites chose the far safer and more lucrative path of patrolling those routes in concert with that hegemon – a mandate Roosevelt would fulfill by sending a vastly enlarged US navy on a world tour from December 16, 1907 to February 22, 1909. What US imperial elites could not have foreseen in 1898, to be sure, was that the crucial counterplayers of this negotiated mobility would be the emergent anti-colonial nationalisms of Global Steam.

Louis Pérez has described how Cuban nationalism forged the blueprint of the anti-colonial and anti-imperial revolutionary mass movements which would sweep the planet during the 20th century.⁶⁷¹ The Cuban version of this nationalism was embodied by José Martí's lyrical classic *Verse of a Sincere Man* (1891) and prose classic *Montecristi Manifesto* (1895), the Philippine version by the Spanish-language language novels of José Rizal, and the Puerto Rican version by the paintings of Francisco Oller, most famously in *The Wake* [El Velorio] (1893).

Whereas the anti-colonial Atlantic insurrections of 1775-1791 were driven by national coalitions of wealthy land speculators, partly waged and fully waged workers seeking to acquire farmland, and wageless workers seeking emancipation and subsistence plots of their own, these newer anti-colonial nationalisms took the form of international coalitions between members of the massive Cuban diaspora (e.g. Martí's sojourn in the US, Rizal in France and Belgium, and Oller in France),⁶⁷² by the progressive movements of partly and fully waged workers in colonial cities such as Manila and Havana, and by the aspiration of Cuban, Puerto Rican and Filipino subsistence farmers for additional land.

Between 1881 and 1895, Martí and other members of the Cuban diaspora convinced a plurality of the US electorate that Cuba was deserving of national independence. In addition to purchasing arms and ammunition for the 1895 uprising, the Cuban diaspora was also instrumental in convincing US newspapers to publish scathing exposes of Spain's genocidal counterinsurgency campaign, which killed hundreds of thousands of Cubans between 1895 and

foreign power, I hope that we shall always strive to speak courteously and respectfully of that foreign power." Theodore Roosevelt. "National Duties". Address delivered September 2, 1901. *The Strenuous Life: Essays and Addresses*. New York: The Century Co., 1902 (288-289).

⁶⁷¹ "But Cuban separatism was possessed of more than a desire for nationhood. It was not the last of a kind but the precursor of a genre: a guerrilla war of national liberation aspiring to the transformation of society. The Cuban insurrection had more in common with the Mexican revolution fifteen years later than it did with the South American wars for independence seventy-five years earlier. Independence served as the cutting edge of separatist politics, a purpose that found universal endorsement among the diverse social groupings that had organized around Cuba Libre. But the vision went beyond free Cuba, for independence was a means, not an end. Cuba Libre contained elements of anti-imperialism, political radicalism, agrarian reform, racial equality, and social justice." Louis A. Pérez, Jr. *Cuba Between Empires, 1878-1902*. Pittsburgh: University of Pittsburgh Press, 1983 (xix).

⁶⁷² "During the last third of the nineteenth century, some 100,000 Cubans of all occupations and professions, of all ages, from all classes and races, emigrated – to Europe, to Latin America, to the United States." Louis A. Pérez, Jr. *Cuba Under the Platt Amendment 1902-1934*. Pittsburgh: University of Pittsburgh, 1986 (11). Cuba's population just prior to 1898 was estimated at 1.8 million.

1898.⁶⁷³

The final component of the 1898 tripwire was the construction of the Panama canal. This latter would halve the distance required to sail between New York City and San Francisco, and instant create one of the world's most important trade routes and maritime chokepoints. While the idea of building such a canal was centuries old, the creation of a waterway through Central America's mountainous spine required a massive financial and technological mobilization which only the three largest of the five core polities of Global Steam – namely Britain, France and the US – could hope to achieve.

Of these three, the British empire had the necessary capital but was uninterested because it already controlled the Suez canal as well as the route around the Cape of Good Hope, and because the construction of a much cheaper Panama railway in 1855 linked the Atlantic to the Pacific in a cost-effective manner. Conversely, the French empire had long been interested but lacked the necessary capital due to its extensive colonial commitments in Africa and Asia and neocolonial investments in the Russian empire. A French consortium under the auspices of Ferdinand de Lesseps had begun construction work in Panama in 1881, but ran out of funds in 1889. Meanwhile, a second French consortium launched in 1889 achieved little beyond additional land surveys.

This left the United States. As early as 1885, a treaty granting the US the right to construct a canal through Nicaragua was proposed by Nicaragua's oligarchic elites, but rejected by US President Grover Cleveland due to a lack of commercial financing as well as US naval capacity. Subsequently, the US Army Corps of Engineers conducted a survey of a possible Nicaraguan canal in 1887, and a private Maritime Canal Company was launched in 1889 to begin construction but achieved even less than the two French attempts and was dissolved in 1893.

Nonetheless, the idea of a canal captured the imagination of US elites. By the mid-1890s, the only real debate among these latter was whether to purchase the rights to the Panamanian route, or to build an entirely new one through Nicaragua (the Panama option won out because the

⁶⁷³ “In January 1896, the government in Madrid appointed a new governor of Cuba: Valeriano Weyler. A week after his arrival, he began a ruthless campaign of counterinsurgency. His most famous policy was ‘reconcentration’ – a precursor term for much more notorious and brutal concentration camps elsewhere in the twentieth century. Weyler ordered all people living in the countryside (or small unfortified towns) to move to designated Spanish-held areas, where they would be unable to help the rebels. He then sent troops into the country to destroy remaining crops, houses, and animals – anything that might offer sustenance or shelter to the rebels. No provisions were made for feeding and housing the hundreds of thousands of Cubans thus reconcentrated. Within two months, newspapers around the world were reporting the obvious consequences – hunger, disease, and death. Historians now estimate that perhaps some 170,000 people – one-tenth of the island's population – died. People called Weyler ‘the Butcher.’ A popular poem in Havana described him as having ‘the look of a reptile, the body of a dwarf, the instinct of a jackal, a soul like mud.’ In the United States, newspapers dwelled on the suffering of the reconcentrados, publishing pictures of emaciated children and the mass graves of Cubans who had succumbed. The coverage was almost obsessive and helped launch what came to be called ‘yellow journalism’ – a new wave of sensationalized news with bold, alarmist headlines.” Ada Ferrer. *Cuba: An American History*. New York: Scribner, 2021 (147-148).

distance required for excavation was only half of the Nicaraguan alternative).

To recapitulate, all five elements of the 1898 tripwire – Japan’s war of colonial adventurism, the anti-colonial national uprisings of Cuba and the Philippines, the settler-colonial annexation of Hawaii, and the Panama canal – were required to transform the sinking of the *Maine* into the geopolitical explosion of the Spanish-American war.

What transformed this explosion into the opening act of US core neocolonialism was the paradox of catastrophic success. The crushing US military victory over Spain’s small army and negligible navy generated euphoric short-term US newspaper headlines and laudatory odes from British imperialists such as Rudyard Kipling,⁶⁷⁴ but resulted in long-term insurgencies, expensive occupations, and fierce domestic criticism. One of earliest observations of this paradox was Henry James in a February 24, 1899 letter:⁶⁷⁵

To live in England is, inevitably, to feel the ‘imperial’ question in a different way and take it at a different angle from what one might, with the same mind even, do in America. Expansion has so made the English what they are – for good or for ill, but on the whole for good – that one doesn’t quite feel one’s way to say for one’s country ‘No – I’ll have *none* of it!’ It has educated the English. Will it only demoralize us? I suppose the answer to that is that we can get at home a bigger education than they – in short as big a one as we require. Thank God, however, I’ve no *opinions* – not even on the Dreyfus case. I’m more and more only aware of things as a more or less mad panorama, phantasmagoria and dime museum.⁶⁷⁶

James’ “we” did not refer to the general electorate, but to the US newspaper barons, sugar plutocrats and telegraph monopolists⁶⁷⁷ who reconfigured late 19th century US industrial racism

⁶⁷⁴ Kipling’s most notorious work of imperial apologetics, *The White Man’s Burden*, was written in February 1899 as a celebration of the US victory over Spain and characterized the citizens of Cuba and the Philippines as “...new-caught, sullen peoples, / Half devil and half child”.

⁶⁷⁵ Credit for flagging this passage from Henry James is due to Bradford Perkins: “American entry into the elite company of empires, coinciding with renewed imperial interest in Britain, demolished many irritants between the nations. Only two weeks after the Senate approved the treaty by which the United States annexed the Philippines, Puerto Rico, and Guam, the most famous Anglo-American of his day wrote, ‘To live in England, is, inevitably, to feel the ‘imperial’ question in a different way and take it at a different angle from what one might... do in America.’ In quick time, many stay-at-homes absorbed Henry James’ angle of vision. The exhilaration of empire, when felt, was now common to both countries; the burdens of empire, when imposed, were also like British burdens.” Bradford Perkins. *The Great Rapprochement* (66).

⁶⁷⁶ Henry James. *The Letters of Henry James, Volume 1*. Edited by Percy Lubbock. New York: Charles Scribner’s Sons, 1920.

<https://www.gutenberg.org/files/38776/38776-h/38776-h.htm>

⁶⁷⁷ “In 1891 the Chicago Daily Tribune estimated that seven-eighths of U.S. congressmen used Western Union franks [free telegrams] and that they collectively sent about 150 messages a day while Congress was in session, some \$1,000 worth of free telegraphing per month. However, public statements by company officers and internal records both indicate a higher figure. President William Orton told shareholders in 1873 that government officials accounted for nearly a third of the company’s free

and imperial masculinity into US neocolonial jingoism.⁶⁷⁸ This jingoism was Roosevelt's negotiated mobility brought to shuddering ideological life.

Conversely, James' closing sentence unwittingly identified the key counterplayer of this jingoism, in the form of the constellation of the late 19th century visual panorama, the post-Wagnerian musical phantasmagoria, and the dime museum (plebian spaces which were part museum exhibits and part vaudeville stages). This is a reference to the mass audience residing primarily in the core polities, who consumed the products of the core's international culture-industries.

After 1898, US elites faced the challenge of persuading the members of this audience to enlist in the US army and spending their tax dollars on a national navy. This audience also had to be convinced of the merits of annexing five new territories in the Caribbean and Pacific Ocean comprising 431,000 square kilometers of area, roughly the size of California's 424,000 square kilometers. These were not temperate-zone territories devoid of significant populations, but were tropical regions with a population of 9.4 million residents, about one-eighth the size of the US population of 76.3 million in 1900.⁶⁷⁹

While the English-speaking settler colonists of Hawaii welcomed US annexation, the citizens of Cuba and the Philippines did not. Despite the fact that only 5% of the Cuban population (10% of the male population) was permitted to vote in its first national elections in

business, with the rest being done by railroads in exchange for exclusive rights-of-way. In 1884 Western Union's vice-president John Van Horne testified before the Senate that the company provided about \$1 million worth of free service. According to Orton's and Van Horne's figures, Western Union gave public officials about \$300,000 in free telegraph service per year in the 1870s and 1880s. This is in rough agreement with internal company statistics showing that the company provided about \$200,000 worth of 'complimentary' telegraphing at the turn of the century." David Hochfelder. *The Telegraph in America, 1832-1920*. Baltimore: Johns Hopkins University Press, 2012 (45-46).

⁶⁷⁸ "For a week, the *New York Journal* devoted an average of eight and a half pages of news, editorials and pictures to the *Maine*. The editors mobilized a crack team of reporters and artists, including Frederic Remington, and dispatched them to Havana in the paper's own press boats. William Randolph Hearst offered a fifty-thousand-dollar reward 'for the conviction of the criminals who sent 258 American sailors to their death.'

Hearst veritably wallowed in lying sensationalism. The *Journal* for February 17 had no doubt whatever: 'THE WARSHIP *Maine* WAS SPLIT IN TWO BY AN ENEMY'S SECRET INFERNAL MACHINE'; and 'Captain Sigsbee practically declares that his ship was blown up by a mine or torpedo.' An accompanying illustration, highlighted with a Maltese cross below the ship's waterline, 'shows where the mine may have been fired.' 'THE WHOLE COUNTRY THRILLS WITH WAR FEVER', screamed the headline on February 18; 'REMEMBER THE *Maine*! TO HELL WITH SPAIN!'

Joseph Pulitzer's *World*, though not adopting the lurid shrill of its New York rival, nevertheless mucked about in the same story lines: 'THE *Maine* EXPLOSION WAS CAUSED BY A BOMB – SUSPICION OF A TORPEDO.' Five days after the ship had blown up, Pulitzer informed his readers, 'World's discoveries prove the mine theory', and the following day, 'Government accepts the mine theory of the *World*.'" Ivan Musicant, *Empire by Default* (143-144).

⁶⁷⁹ In 1898, the population of the Philippines was estimated at 6.5 million, that of Cuba at 1.8 million and that of Guam at about 10,000. A US census counted 953,243 residents of Puerto Rico in 1900, while Hawaii's population reached 109,000 in 1896.

1900, Cuban nationalists won a resounding victory, frustrating US plans for annexation and opening the door to the limited independence of 1902.⁶⁸⁰

Simultaneously, the 1898 US occupation of the Philippines detonated a massive anti-colonial insurgency. This insurgency was only quelled by the deployment of 125,000 US soldiers, a grinding three-year military campaign which cost \$400 million⁶⁸¹ and the lives of 4,200 US soldiers, 16,000 insurgents and 200,000 to 500,000 civilians (3% to 8% of the Philippines' pre-war population of 6.5 million), and by the promise of the US occupation authorities to grant Filipinos a significant degree of self-rule in the future. The insurgency also compelled US colonial authorities to buy local legitimacy by financing health care, education and a limited degree of land reform, although this latter disproportionately benefited rural land-owning elites.⁶⁸²

As early as 1900, the national platform of the US Democratic party (the main opposition party to the ruling Republicans) called for independence for the Philippines.⁶⁸³ The first municipal elections in the Philippines were held in 1902, and the first national constant pressure from below gradually expanded the franchise as well as the scope of self-government over the

⁶⁸⁰ "By Root's calculations, there were 315,000 Cuban males over the age of twenty-one – 188,000 whites and 127,000 blacks – and some 50,000 Spanish males over twenty-one entitled to Cuban citizenship. Two-thirds of all adult Cuban males were excluded from the franchise. Suffrage restrictions reduced the electorate to some 105,000 males and reduced the electorate to some 5 percent of the total population. But this was still not enough. In the municipal elections of 1900, the National party, representing the revolutionary sector, prevailed. The victorious Cubans were not slow to bring the moral of the elections to the attention of U.S. authorities. 'The Cuban National Party,' an exultant General Alejandro Rodriguez taunted [US President] McKinley, 'victorious in the election, salutes the worthy representative of the North American Nation, and confidently awaits an early execution of the Joint Resolution.'" Louis A. Pérez, Jr., *Cuba Under the Platt Amendment 1902-1934* (38).

⁶⁸¹ This was the equivalent of \$117 billion in 2022 dollars.

⁶⁸² "The subsequent Public Lands Act of 1903, modeled after the government program to settle the American west, permitted any individual to acquire up to 16 hectares of public land by establishing and cultivating a homestead for five consecutive years while paying a nominal fee. It too ended up favoring large landowners. The indigenous communal tradition in the Philippines did not lend itself to striking out on one's own to establish a farm on isolated homesteads. Even when peasants did try to take advantage of the homesteading program, they were often discouraged by complicated legal requirements. Further, 'because the bureaucracy was incapable of handling the mushrooming number of applicants and because filing procedures and requirements were complex,' most applications remained hanging in bureaucratic limbo for decades. According to Kerkvliet (1977), less than a quarter of the 29,000 applications for homesteads under the 1903 law in Central Luzon and less than a quarter of the 150,000 applications in the country as a whole had been approved by 1928. Only one-tenth of all applicants ever received titles. The majority of successful applicants were probably not from the ranks of the landless, but landowners with large holdings already in their possession. Better informed about how to acquire titles and adept in circumventing legal limits, it was the landed elite who 'walked away with most of whatever untitled land remained before the Japanese occupation' in Central Luzon." Jennifer Conroy Franco, *Elections and Democratization in the Philippines*. Chapter 2.

⁶⁸³ Wong Kwok Chu (1982). "The Jones Bills 1912-16: A Reappraisal of Filipino Views on Independence." *Journal of Southeast Asian Studies* 13:2 (254).

course of the colonial era (1.15% of the population could vote in 1907, 7% to 9% in 1916 and 11% in 1935).⁶⁸⁴ Filipino elites also played a key role in sponsoring the Jones Bill, the first legislation explicitly calling for the independence of the Philippines which was introduced in the US House of Representatives on March 20, 1912 (the bill did not pass, but marked the moment Filipino decolonization became a mainstream element of US domestic politics).⁶⁸⁵

No less crucial to the triumph of US core neocolonialism was the fact that after 1898, the US was in direct competition with the British, French, Dutch and Japanese maritime empires of the Pacific as well as the British and French maritime empires of the Caribbean. In 1900, these four competitors collectively administered one third of the planet's population (a total seven times the size of the US), generated twice the GDP of the US, and operated ten times as many capital ships as the US navy.⁶⁸⁶

By 1905, the enormous cost and human toll of the Philippines insurgency, the ineradicable appeal of Filipino and Cuban anti-colonial nationalism,⁶⁸⁷ the rejection of US imperialism by a significant fraction albeit not a majority of the US electorate (e.g. Mark Twain's *To the Person Sitting in Darkness* (1901)),⁶⁸⁸ and the palpable inferiority of the US navy vis-a-vis the fleet of the British hegemon convinced US imperial elites to cashier colonial adventurism in favor of core neocolonialism. Put bluntly, the Spanish-American war would be the last in a century of US wars of settler colonization, and the first in a century of US wars of neocolonial expansion to come.⁶⁸⁹

The first concrete step towards US core neocolonialism was the settlement of its last remaining maritime and territorial disputes with the British hegemon. The maritime settlement consisted of the Hay-Pauncefote agreement of November 18, 1901, which granted the US exclusive control over the future Panama canal in exchange for a guarantee of neutrality vis-a-vis British ships traversing such. The territorial settlement consisted of the Hay-Herbert agreement

⁶⁸⁴ Jennifer Conroy Franco. *Elections and Democratization in the Philippines*. New York: Routledge, 2001. Chapter 2.

⁶⁸⁵ Wong Kwok Chu, "The Jones Bills 1912-16: A Reappraisal of Filipino Views on Independence" (254-255).

⁶⁸⁶ David C. Evans and Mark R. Peattie, *Kaigun* (147).

⁶⁸⁷ Roosevelt had promised voters in 1901 to speak softly and carry a big stick. By 1906, a massive Cuban insurgency loosely organized around Cuba's Liberal party drove Roosevelt to bluster loudly about colonial genocide and unleash a second US occupation (1906-1909), which failed just as miserably as its 1898-1902 predecessor: "At the moment I am so angry with that infernal little Cuban republic that I would like to wipe its people off the face of the earth. All we have wanted from them was that they would behave themselves and be prosperous and happy so that we would not have to interfere. And now, lo and behold, they have started an utterly unjustifiable and pointless revolution and may get things into such a snarl that we have no alternative save to intervene – which will at once convince the suspicious idiots in South America that we do wish to interfere after all, and perhaps have some land-hunger!" President Theodore Roosevelt. Letter to Henry White, US ambassador to Italy, September 13, 1906.

⁶⁸⁸ Mark Twain. *To the Person Sitting In Darkness*. February 1901.

<https://archive.org/details/jstor-25105120/page/n1/mode/2up>.

⁶⁸⁹ The US engaged in almost continuous wars of settler-colonial expansion from 1789 until 1898 (99 years), and waged dozens of wars of neocolonial expansion between 1898 and 2003 (103 years).

of March 3, 1903, which conclusively settled the line of demarcation between US-controlled Alaska and British-controlled Canada.

From the British perspective, these two agreements were part of a larger policy of naval consolidation exemplified by the Anglo-Japanese alliance of January 30, 1902. This latter was meant to offset the threat of Russia's railroad expansionism vis-a-vis Britain's Asian colonial empire, and to enable the reconcentration of the British fleet in the Atlantic and Mediterranean oceans to meet the challenge of German and Italian naval expansionism.

The next step towards US core neocolonialism was the 1903 launch of the Panama canal construction project. While this project had similarities to the Franco-British construction of the Suez canal during 1859-1869 and the subsequent British occupation of Egypt in 1882, the chastening experience of the Filipino insurgency convinced US elites to avoid sending an army of occupation. Instead, the US purchased the assets of the New Panama Canal Company in 1902 for \$40 million and abetted Panama's indigenous secession from Colombia in November 1903. In exchange for a portion of toll revenues, the new Panamanian authorities granted the US territorial control over the canal zone until 1979.⁶⁹⁰

The canal construction zone provided the basic blueprint of US neocolonialism in Central America, namely the combination of external flows of US capital and technology, local political legitimacy provided by comprador elites, and the construction of an international workforce:

As many as 200,000 West Indians arrived on the isthmus during the construction era and businesses, churches, and social institutions emerged to serve them. The heterogeneous culture that resulted discomfited many Panamanians, who felt uneasy about the African heritage of West Indians as well as the Anglo-Caribbean traditions and language possessed by so many of them.

West Indians constituted only one of many groups arriving on ships day after day. Thousands of others arrived as well, including Americans, Italians, Greeks, Spaniards, Chinese, South Asians, Britons, Germans, Canadians, Colombians, Peruvians, and Costa Ricans. Many of these sojourners were on their way to the Zone, but others were drawn by Panama's expanding economy. The presence of so many diverse groups made Panama City and Colón renowned for their sophisticated, international atmosphere. Added to the polyglot residents were crowds of tourists, especially wealthy Americans and English who put Panama on their world tour so they could witness firsthand the marvels of the canal. One such tourist explored Panama City and described the vision before him: 'A Panamanian cart, loaded with English tea biscuit, drawn by an old American army mule, driven by a Hindu wearing a turban, drove up in front of a Chinese shop. The Jamaican clerk, aided by the San Blas errand boy . . . supervise[d] the unloading.' This tourist's account continued: 'That is Panama every day. Across the street is an Italian lace shop run by a

⁶⁹⁰ "The Egyptian model of fiscal control without formal annexation suggested itself especially in Panama, where the projected canal was to be America's Suez, enabling commercial and naval expansion in the Pacific. To secure the canal site, Panama was separated from Colombia and set up as a U.S. protectorate in November 1903. Charles Conant directed a Philippine-style currency reform which provided that the new Panamanian government would set aside gold paid by the United States for the canal franchise as a currency reserve, in a New York bank. J. P. Morgan and Company subsequently served as the dependent government's Wall Street agent." Mark Metzler, *Lever of Empire* (43-44).

This neocolonial model would be adopted during the first half of the 20th century by the United Fruit Company, the US banana monopoly which imported significant numbers of workers from the British-colonized Caribbean to produce agricultural goods in Central American plantations for US markets.⁶⁹² It would also generate new forms of political dissent in the form of social movements modeled on Spanish anarchism, movements heavily mediated by the 19th century Spanish labor diaspora throughout the Atlantic neocolonial economy.⁶⁹³

The moment US core neocolonialism became irreversible was Roosevelt's diplomatic mediation of the 1905 Portsmouth Treaty which ended the Russo-Japanese war. This latter was the capstone of Roosevelt's personal evolution from a critical admirer of Meiji Japan's colonial

⁶⁹¹ Julie Greene. "Chapter 8: The Riots of Cocoa Grove." In: *The Canal Builders: Making America's Empire at the Panama Canal*.

⁶⁹² "...although eager to displace British influence, these private U.S. interests were forced to rely on the British Empire for their labor needs. Unable to secure sufficient numbers of workers among Hispanic or indigenous Central Americans, they turned to West Indians. The vast majority of these black immigrants hailed from Jamaica and other British colonies, which offered an ample supply of mobile, English-speaking labor. Between 1850 and 1914, some 300,000 West Indians traveled to the Central American rimlands, providing critical labor to foreign enterprises, above all United Fruit and the French and American canal projects. In the process, Jamaicans and other migrant workers became an integral part of U.S. expansion into Central America." Jason M. Colby. *The Business of Empire: United Fruit, Race, and U.S. Expansion in Central America*. Ithaca: Cornell University Press, 2011 (7).

⁶⁹³ "Anarchism in particular had flourished in Spain after the mid-nineteenth century, especially in Andalusia, and wherever Spanish immigrants traveled in the Americas, it tended to follow them—to Brazil, Argentina, Mexico, Uruguay, Ecuador, Cuba, Florida, and the Panama Canal Zone, among other places. Spanish immigrants moved amid an international world of radical politics, their ideology, strategy, and tactics shaped not only by their experiences constructing the canal or time spent in Spain, Cuba, and similar sites of international migration but also by the ideas of a vibrant social and political movement.

In both Spain and Cuba, anarchism became the dominant ideology among workers during the late nineteenth and early twentieth centuries. There were close ties between the anarchist movements in each country, and Spanish anarchist periodicals were distributed widely in Cuban cities. Anarchists in Cuba built effective unions, led strike movements, created schools and workers' associations, and published newspapers. They strove to build unity between workers in different industries and of different skill levels, and they were unusually supportive of women's struggles. They also made antiracism into an important part of their movement, taking an unprecedented stand for solidarity among peninsulares, Creoles, and people of color. In the Canal Zone, anarchism evolved differently in one important respect. As the example of Cuba suggests, the ideology typically emphasized building solidarity across boundaries of skill, status, race, ethnicity, and nationality. In the Panama Canal Zone during the construction era, anarchism became a movement limited to one group – unskilled European immigrants, almost all of them Spaniards – and it never developed antiracism as a part of its ideology." Julie Greene. "Chapter 4: Lay Down Your Shovels." In: *The Canal Builders: Making America's Empire at the Panama Canal*. New York: Penguin Press, 2009.

adventurism prior to 1898 to cautionary neutrality by the end of 1904.⁶⁹⁴ One of the clearest expressions of this shift was a letter Roosevelt wrote on June 13, 1904 to his close personal friend Cecil Spring Rice, a career British diplomat with experience in Japan, Persia, Russia and Sweden (Rice later became the British ambassador to the US between 1912-1918):

The other day the Japanese Minister here and Baron Kanako, a Harvard graduate, lunched with me and we had a most interesting talk. I told them that I thought their chief danger was lest Japan might get the 'big head' and enter into a general career of insolence and aggression; that such a career would be temporarily very unpleasant to the rest of the world, but that it would in the end be still more unpleasant for Japan. I added that though I felt there was a possibility of this happening, I did not think it probable, because I was a firm believer in the Japanese people, and that I most earnestly hoped as well as believed that Japan would simply take her place from now on among the great civilized nations, something to teach others as well as something to learn from them; with, of course, a paramount interest in what surrounds the Yellow Sea, just as the United States has a paramount interest in what surrounds the Caribbean; but with, I hoped, no more desire for conquest of the weak than we had shown ourselves to have in the case of Cuba, and no more desire for a truculent attitude toward the strong than we had shown with reference to the English and West Indies.

...

...Of course they earnestly assured me that all talk of Japan's even thinking of the Philippines was nonsense. I told them that I was quite sure this was true; that I should certainly do all in my power to avoid giving Japan or any other nation an excuse for aggression; that if aggression came I believe we would be quite competent to defend ourselves. I then said that as far as I was concerned I hoped to see China kept together, and would gladly welcome any part played by Japan which would tend to bring China forward along the road which Japan trod, because I thought it for the interest of all the world that each part of the world should be prosperous and well policed; I added that unless everybody was mistaken in the Chinese character I thought they would have their hands full in mastering it – at which they grinned and said that they were quite aware of the difficulty they were going to have even in Korea and were

⁶⁹⁴ "As Russian fortunes worsened, Roosevelt's – and [Secretary of State] Hay's – concern about the balance of power increased. Asking Meyer to accept the assignment in St. Petersburg, Roosevelt noted that the Far East needed watching. Tokyo would not show itself more altruistic than St. Petersburg or for that matter Berlin. While the Japanese rulers had recognized Russia as their enemy, Roosevelt was not sure the Japanese people drew any distinction between Russians and other foreigners including Americans. He wondered if the Japanese did not lump Russians, English, Americans, and Germans "as white devils inferior to themselves" and plan "to take advantage of our various national jealousies, and beat us in turn."

Thus by the end of 1904 Roosevelt had become concerned about Japanese domination of the Far East. Minister Tadasu Hayashi informed Tokyo from London that Roosevelt in an interview with a friend of the minister had spoken of his hope to see both the Russians and the Japanese exhausted by the war. The military events of 1904 succeeded only in increasing Roosevelt's fear. The Japanese victories, the possible Russian collapse, the difficulties over correspondents and the Ryeshitelui, all brought about a change in the president's attitude." Eugene P. Trani. *The Treaty of Portsmouth: An Adventure in American Diplomacy*. Lexington: University of Kentucky, 1969 (35-36).

satisfied with that job.⁶⁹⁵

While Roosevelt could not bring himself to acknowledge the military insurgency of the Philippines or the electoral insurgency of Cuba, displacing such onto the nebulous coordinates of China and Korea, his conclusion ratified the central insight of US core neocolonialism. This was the recognition that negotiated mobility vis-a-vis the British hegemon (“each part of the world should be prosperous and well policed”) was preferable to a zero-sum military conflict with such.

What still needs to be explained, on the other hand, is why the majority of the empires of the semi-periphery doubled down on colonial adventurism between 1894 and 1914 precisely where the core polities of Belgium, France, the Netherlands and the US switched to core neocolonialism.

The first and most obvious reason for this divergence was that the imperial elites of the core polities faced constant pressure from national electorates comprised of literate partly and fully waged workers. The citizens of these polities (as opposed to their colonial subjects) were almost fully literate, produced and consumed the most sophisticated consumer goods of the day, and generated the world’s most advanced scientific research and technology. These national electorates did not just win significant democratic reforms and concessions from core elites, they pushed the latter away from expensive and risky colonial adventurisms and towards more lucrative and safer forms of core neocolonialism.⁶⁹⁶

By contrast, the elites of the semi-peripheral empires faced nascent national publics of illiterate subsistence farmers and craft workers who were separated by explosive ethnic, linguistic, ethnic and confessional divides. Semi-peripheral elites thus gambled on colonial adventurism as a means of reinforcing dynastic prestige and preserving the grip of semi-feudal landed elites, precisely where partly and fully waged workers of the semi-periphery began to organize trade unions such as the German Metalworkers’ Union, political parties such as the Social Democratic parties of Austria and Germany, the Socialist party of Italy, and the Socialist Revolutionary party of Russia, and anti-colonial nationalisms such as those of colonized Korea, Poland and Ukraine.

⁶⁹⁵ Theodor Roosevelt. *Letter to Cecil Spring Rice*. June 13, 1904.

<https://www.theodorerooseveltcenter.org/Research/Digital-Library/Record?libID=o267973>.

⁶⁹⁶ “During the 1908 election year a very popular president [Roosevelt] was unable to persuade a Congress controlled by his own party to support a naval policy that he considered vital to national safety. Roosevelt was aware that much still needed to be done. His belief in the importance of naval power had grown stronger during his second term. He considered the navy the ‘one foundation of peace we have,’ and ‘an infinitely more potent factor for peace than all the peace societies . . . together.’ Roosevelt had wanted to ‘put the navy on such a basis that it cannot be shaken from it.’ At the same time, however, he was faced with growing opposition. The president’s ruminations became both bitter and gloomy. Once, he declared that America would have to withdraw from the Philippines because the ‘country’ was unconcerned with being a world power. Yet, most of his anger was directed not at the ‘country,’ but at Congress.” Phillips Payson O’Brien. *British and American Naval Power: Politics and Policy, 1900-1936*. Westport: Praeger, 1998 (65)

The second reason for this divergence was the exponential increase of the cost of maritime expansionism and imperial competition during the final two decades of Global Steam. These costs were an immense fiscal, military and logistical challenge to all fourteen of the world empires of Global Steam, including the British hegemon itself. While the four non-British core polities were all self-financing industrial economies which were not neocolonial dependencies of British markets, technology or capital, their resources were not infinite.

Since Belgium and the Netherlands were the core polities with the smallest populations, the smallest economies, and the most vulnerable land frontiers, they were the first to adopt strategies of core integration in the 1880s. France followed suit in the 1890s, due to its incapacity to match the economic dominance and naval might of the British hegemon as well as the military necessity of forging an alliance against the German empire. Last but not least, the United States had secure land borders and the most economic resources of all, but US imperial elites discovered to their dismay that the economic costs of maritime expansionism and wars of colonial occupation far outweighed the economic returns of such, and thus adopted policies of core integration in the 1900s.

By contrast, the semi-peripheral Austrian, German, Italian, Japanese, Ottoman, Portuguese, Spanish and Russian empires were dependent on access to core markets, technology and capital for the duration of Global Steam. The dominant policy response of their imperial elites to this dependency was not the internal democratization and external core neocolonialism typical of the core polities, but a combination of internal dynastic revanchism and external colonial adventurism – the underlying constellation of the 1894-1914 East Asian and West Asian doom loops.

One of the clearest expressions of this constellation was provided by Germany's Grand Admiral Tirpitz in a letter written on February 13, 1896:

To this day, our policy [Politik] has completely lacked a concept of the political significance of sea power. If we wish to venture out into the world and economically strengthen ourselves via the sea, we would construct an entirely empty building, if we did not at the same time furnish ourselves with a certain measure of maritime military strength. By heading out, we will collide everywhere with existing or future interests. That means conflicts of interest. Now that the prestige of 1870 is exhausted, how will even the cleverest policy achieve something without a real power which corresponds to the many-sidedness of interests [Vielseitigkeit der Interessen]. That is why even if it never comes to war, we will always draw the short straw.⁶⁹⁷

⁶⁹⁷ “Unserer Politik fehlt bis jetzt vollständig der Begriff der politischen Bedeutung der Seemacht. Wollen wir aber gar unternehmen, in die Welt herauszugehen und wirtschaftlich durch die See zu erstarken, so errichten wir ein gänzlich hohles Gebäude, wenn wir nicht gleichzeitig ein gewisses Maß von Seekriegsstärke uns verschaffen. Indem wir herausgehen, stoßen wir überall auf vorhandene oder in der Zukunft liegende Interessen. Damit sind Interessenkonflikte gegeben. Wie will nun die geschickteste Politik, nachdem das Prestige von 1870 verbraucht ist, etwas erreichen ohne eine reale, der Vielseitigkeit der Interessen entsprechende Macht. Politisch vielseitig ist aber nur die Seemacht. Darum werden wir, ohne daß es zum Krieg zu kommen braucht, politisch immer den Kürzeren ziehen.” Die Flotte und die deutsch-englischen Beziehungen: Brief des Kontreadmirals Tirpitz an Admiral von Stosch (13. Februar

Tirpitz's expansionism was a maritime means to dynastic ends (i.e. the preservation of the Hohenzollern social order), precisely where Roosevelt's expansionism was a maritime means to neocolonial ends (i.e. the construction of the Panama canal). Far from being the exclusive project of Germany's dynastic and military elites, this maritime expansionism became popular wisdom for a significant plurality of German citizens thanks to the efforts of the Naval League, a pro-imperialist civic organization founded in 1898 which expanded to a million members in less than a decade.⁶⁹⁸

The paradox of this expansionism was that it only exacerbated the German empire's semi-peripheral status by wasting its limited economic resources on colonial boondoggles, and by convincing the core polities who controlled one-third of the planet's economy and two-fifths of its population to counter Germany's accelerated maritime expansionism with their own buildups.

Between 1900 and 1910, the British navy retained its three-to-one advantage in capital ships over the German navy, while the combined navies of the core polities outnumbered the German navy by six to one at the turn of the 20th century and by five to one a decade later. Whereas the core polities operated 64% of all capital vessels in 1900, their share rose to 71% by 1910:

1896) [The Fleet and German-English Relations: Letters of Grand Admiral Tirpitz to Admiral von Stosch, February 13, 1896]. In: Roger Chickering, Steven Chase Gummer and Seth Rotramel, editors. *Das Wilhelminische Kaiserreich und der Erste Weltkrieg (1890-1918)* [The Wilhelmine Empire and the First World War (1890-1918)]. This is my own translation.

https://ghdi.ghi-dc.org/sub_document.cfm?document_id=791&language=german.

⁶⁹⁸ "Within German society, the Naval League occupied a prominent place. It was the most popular of all Germany's various nationalist groups, including the Pan-German League and the colonial Society, and it established branches throughout the country. Despite its later start, in 1898, within its first eighteen months, the Navy League surpassed in total membership all the other nationalist groups combined. The 1900 Second Naval Law stimulated a major increase in Navy League membership, and by 1907 it had over a million members and associates, making its membership over eight times larger than that of the Colonial Society." Robert S. Ross (2018). "Nationalism, Geopolitics, and Naval Expansionism: From the Nineteenth Century to the Rise of China." *Naval War College Review* 71:4 (21).

Figure 33. Total number of capital ships (battleships, armored cruisers and battlecruisers) 1900-1910.⁶⁹⁹

Empire or Region	Vessels in 1900	Percent Total	Vessels in 1910	Percent Total
Britain	50	34%	98	37%
France	35	24%	49	19%
United States	9	6%	41	16%
Germany	15	10%	35	13%
Japan	8	5%	26	10%
Russia	30	20%	14	5%
All core polities	94	64%	188	71%
All semi-peripheral polities	53	36%	75	29%
World total	147	—	263	—

The self-defeating logic of the West Asian doom loop was also visible in the German empire's strategy of subsidizing otherwise uneconomic German shipping routes in the 1890s and 1900s in exchange for vessels capable of being retrofitted for maritime military conflicts.⁷⁰⁰ This policy

⁶⁹⁹ David C. Evans and Mark R. Peattie, *Kaigun* (147).

⁷⁰⁰ "Further facilitating this, the relationship between the German shipping companies and the Reich government was an extremely close one. The state, as part of a consistent policy of supporting German commerce and industry, had for many years provided these lines with subsidies, both direct and indirect, in order to ensure their rapid expansion. For example, goods carried by these firms received preferential 'through rates' on the German rail network, thus allowing them to undercut their foreign competitors on the total transportation price of trade to and from inland destinations in Germany. While support such as this obviously conferred a welcome competitive advantage on the German shipping companies, the authorities naturally enough sought a quid pro quo. Beginning in 1898, this generally took the form of subvention agreements with the Reich government – sometimes as postal contracts – in which the shipping companies agreed, amongst other things, to design and build those ships that were the beneficiaries of state funds in such a manner as to make them suitable for military purposes. This included such features as being double bottomed, with twin screws, a submerged rudder and engines below the waterline. Most important, however, was the preinstallation of both the structural underpinnings and basic

generated a few newspaper headlines ballyhooing the fact that German vessels could cross the Atlantic at record speeds, but was easily countered by the 1903 British government decision to grant limited financial subsidies to the speediest vessels of the British-owned Cunard shipping line.⁷⁰¹

Conversely, one of the most striking expressions of the East Asian doom loop was the vast increase in foreign borrowing to finance military expenditures by the Japanese and Russian empires. Military expenditures rose from an annual average of 2.4% of Japan's GDP in 1886-1890 to 5.4% in 1896-1900, and reached a peak of 10.5% in 1901-1905. The figure subsequently declined to an average of 6.7% of Japanese GDP in 1905-1910 and 4.6% in 1911-1913.⁷⁰² Japan had to borrow heavily on the international debt market to finance this spending, increasing its external debt from 4.45% of GDP in 1899 to 31.73% in 1905. As late as 1913, Japan's external debt was still 28.9% of its GDP.⁷⁰³

Leo Pasvolksy and Harold G. Moulton observed that the Russian empire had accumulated 8.81 billion rubles of state debt in 1914, of which 3 billion was due to railroad construction. About half of this debt was accrued between 1894 and 1914, transforming the Russian empire into the world's single largest debtor polity. While domestic Russian debt increased only slightly from 4.04 billion rubles in 1895 to 4.58 billion in 1914, a sign of chronic underinvestment in the domestic economy, Russia's foreign debt skyrocketed from 1.73 billion rubles to 4.2 billion over the same time period. About one quarter (28%) of this debt, 2.44 billion rubles, was generated by the Russo-Japanese war.⁷⁰⁴

One of the crucial preconditions of this war was the decline of the Qing dynasty, which

deck fittings for gun mountings, a necessity if these vessels were to have the capability of being armed rapidly and at short notice. Finally, the shipping companies were required to hand over these vessels to the navy, if requested, in time of need. As a result, a simple mechanism existed whereby the state could utilize the German merchant navy, including fast liners that had already been pre-fitted for military purposes, should a suitable occasion arise. War with Britain was, of course, just such an occasion." Matthew S. Seligmann. *The Royal Navy and the German Threat, 1901-1914: Admiralty Plans to Protect British Trade in a War Against Germany*. Oxford: Oxford University, 2012 (12).

⁷⁰¹ "Thus, within the space of a month, the [British] Admiralty abandoned its former policy of using subsidies to keep twenty-one merchant vessels of moderate speed constantly available for conversion into auxiliary cruisers and introduced in its place a new strategy of focusing all of its funds on two vessels, both of which could reach the very highest speeds. As we have seen, the reason for doing this was to counter the threat from fast German liners. Even Gerald Balfour, who as President of the Board of Trade might have been expected to emphasize the economic dimension to the deal, argued that the two new fast liners 'were not to be built to create trade competition, but merely for the purposes of naval defence'. No one in the know disputed this." Matthew S. Seligmann. *The Royal Navy and the German Threat, 1901-1914* (61).

⁷⁰² Giovanni B. Pittaluga and Elena Seghezze (2016). "How Japan remained on the Gold Standard despite unsustainable external debt." *Explorations in Economic History* 59 (6).

⁷⁰³ Giovanni B. Pittaluga and Elena Seghezze, "How Japan remained on the Gold Standard despite unsustainable external debt" (8-9).

⁷⁰⁴ Leo Pasvolksy and Harold G. Moulton. *Russian Debts and Russian Reconstruction: A Study of the Relation of Russia's Foreign Debts to Her Recovery*. London: McGraw Hill, 1924 (15-17, 56).

made Korea and China alluring targets for Russian and Japanese colonial adventurism in the same way that the Ottoman decline made the Balkans a tempting target for Austrian and Russian colonial adventurism. These colonial adventurisms accelerated the Qing decline and generated tremendous human suffering in the countryside, as large swathes of the countryside became semi-autonomous economic regions.⁷⁰⁵

One of the results was intensified Qing debt dependency. “Although the data are incomplete,” noted Zhihong Shi, “by the eve of the First Sino-Japanese War in 1894 the cumulative amount of foreign debt had reached 67 million treasury taels, climbing as high as 500 million taels just before the Boxer Rebellion in 1900.”⁷⁰⁶ External debt repayments rose from an average of 5% of total Qing government spending between 1885 and 1894 to 31% by 1905.⁷⁰⁷

This slow-burning economic crisis erupted into open political crisis in the abortive Hundred Days' Reform of 1898, which was derailed by conservative elements of the dynastic regime, and in the 1898-1901 Boxer uprising, an anti-foreigner mass movement rooted primarily in the southeastern coastal provinces of Shandong and Hubei.

Shandong was the site of two colonial port cities, Qingdao and Weihai, the former leased

⁷⁰⁵ Peter Perdue has argued that the final decades of Qing rule experienced a regionalization of the economy: “Economic integration was stretched like a thin net over the vast expanses of the [Qing] empire, supported by official and private movements of grain and money; but its action was sporadic, especially in peripheral regions. There was no irreversible linear trend toward increasing integration of the empire; in the nineteenth century, many of the integrative trends were reversed. R. Bin Wong and I have suggested that the ties linking the middle Yangzi to Jiangnan through the rice export trade declined in the nineteenth century. Kenneth Pomerantz has argued that in South China, regions outside the lower Yangzi became increasingly self-sufficient, as people and resources migrated there and ties to Jiangnan loosened. With the decline of the imperial infrastructure of water conservancy, many regions of North China also lost their connections to the core. By the early twentieth century, Shandong was divided into several distinct currency zones, just as Gansu was in the eighteenth. It had, in effect, reverted to frontier conditions.” Peter C. Perdue. *China Marches West: The Qing Conquest of Central Eurasia*. Cambridge, MA: Harvard University Press, 2005 (390-391).

⁷⁰⁶ Zhihong Shi. *Central Government Silver Treasury: Revenue, Expenditure and Inventory Statistics, ca. 1667–1899*. Leiden: Brill, 2014 (54).

⁷⁰⁷ “Between 1885 and 1894, annual debt service payments fluctuated between 4.3 percent and around 6.0 percent (1892) of Qing government spending as a result of its cautious policy of foreign borrowing. This shot up to around 22.8 percent for 1899, even after significant increases in government revenue, and reached around 31 percent by 1905, when state spending had reached 134.92 million taels, over 65.9 percent higher than its nominal equivalent in 1894. By 1911, when the first national budget was drawn up, around 56.41 million tals., or 16.65 percent of that year’s expenditure, was spent on servicing public debt, both foreign and provincial. Thus, for the first 10 years between 1895 and 1905, the growth of foreign and provincial debt outstripped that of government revenue, while between 1905 and 1911, public debt growth stabilized somewhat, with the single largest loan of Hubei-Canton Railway Loans in 1911 at 48.82 million taels. At the provincial level, servicing foreign debt took up on average between 13.7 percent and 24.2 percent of their annual revenues, with certain provinces reaching well over 30 percent.” Dong Yan. “Chapter 9: The Domestic Effects of Foreign Capital: Public Debt and Regional Inequalities in Late Qing China.” In: *A World of Public Debts: A Political History*. Edited by Nicolas Barreyre and Nicolas Delalande. Cham, Switzerland: Palgrave Macmillan, 2020 (210).

by the German empire in 1897 and the latter by the British empire in 1898, respectively.⁷⁰⁸ The Chinese name of the Boxer uprising, “Yihequan”, literally meant “Righteous and Harmonious Fists”. The movement had sectarian roots and engaged in ferocious anti-Christian persecution, killing an estimated 32,000 Chinese Christians – about one-third of the uprising’s eventual toll.

In June 1900, the armed forces of the Austrian, Belgian, British, French, German, Italian, Japanese, Russian and US empires collectively intervened to crush a loose coalition of the Boxer insurgents and elements of the Qing army. The intervention force razed Tianjin to the ground, killing tens of thousands of people and displacing half a million civilians. By December 1901, the imperialist coalition won a complete military victory and imposed a massive financial indemnity on the Qing dynasty, all but ensuring its complete disintegration a decade later.

In the middle of this intervention, the Russian empire seized informal control of the Chinese province of Manchuria in January 1901. This was a region with significant mineral resources, Pacific harbors, and a population of approximately 14 million. Faced with the prospect of the overt Russian colonization of China, the British empire countered by signing the Anglo-Japanese treaty of 1902 and then financing Japan’s subsequent war against Russia:

The Anglo-Japanese alliance became effective in January 1902. Its result was to ensure that Japan could fight a war with Russia without fear of another European power intervening. By October 1903 war appeared imminent, and in December the Japanese minister in London approached the British government for a war loan. On the night of February 8, 1904, Japanese naval forces launched the war with a surprise torpedo attack on the Russian warships stationed at Lüshun (Port Arthur) in southern Manchuria and landed troops at Inchon in Korea. Korea was militarily occupied and a great land campaign was begun in Southern Manchuria. The war lasted until May 1905, fifteen months. It cost the Japanese government the previously unimaginable sum of ¥1.9 billion – almost six times the central government’s total spending in 1903. Forty percent of the expenses were paid by overseas borrowing.⁷⁰⁹

Whereas the Spanish-American conflict was the last war of US settler colonialism and the first of US neocolonialism, the Russo-Japanese conflict was the last war of Russian and Japanese dynastic expansionism and the first of their respective colonial adventurisms. The main military innovation of the war was the use of machine guns, which led to unprecedented casualties on both sides (about one-fifth of the estimated 2.565 million personnel mobilized by both sides during the war became casualties).⁷¹⁰

The root cause of the Russian defeat was imperial overstretch. The Romanov dynasty lacked the industrial capacity, the logistical networks, and the financial resources to

⁷⁰⁸ German entrepreneurs invested heavily in the port facility, and the Germania Brewery founded in the city in 1903 was the predecessor of the contemporary Tsingtao Brewery, one of China’s largest brewing firms.

⁷⁰⁹ Mark Metzler, *Lever of Empire* (45).

⁷¹⁰ The Russian empire lost an estimated 71,400 killed and 146,000 wounded, whereas the Japanese empire lost 80,000-86,000 killed and 173,000-236,000 wounded. Samuel Dumas and K.O. Vedel-Petersen. *Losses of Life Caused by War*. London: Oxford University Press, 1923 (57-59)

simultaneously garrison one of the world's largest land armies, construct a modern navy, and project maritime power into the Baltic sea, the Black sea, and the Pacific ocean.⁷¹¹ The single most important short-term expression of this overstretch was a wave of protests, strikes and anti-dynastic insurrections from January to December of 1905.

This wave had no precedent in the three centuries of Romanov rule, although it had significant parallels to the 1830-1831 cycle of European uprisings and lesser parallels to the 1848-1851 cycle of uprisings. The 1905 protests were organized by a loose coalition of partly and fully waged workers, subsistence farmers, and reformist industrial elites. They were concentrated in industrial centers such as the Russian cities of Moscow and St. Petersburg, the Polish city of Łódź (a center of textile production), the Ukrainian city of Dnipro (named Ekaterinoslav until 1926), and the heavily industrialized Ukrainian Donbas.⁷¹²

These protests expressed a wide spectrum of political stances ranging from democratic reformism to dynastic revanchism, and organizational forms from peaceful assemblies to anti-Semitic pogroms which killed thousands of people between 1905 and 1906.⁷¹³ One of their

⁷¹¹ "The new [1903] programme did indeed signify a change in Russian naval strategy. A large part of the Pacific Ocean squadron was now to be incorporated into the Baltic Fleet, which would be deployed either in the Baltic or in the Mediterranean if Russia decided to break through the Straits. Therefore, on the eve of the Russo-Japanese War the Russian government was actually unable to sustain its naval build-up in the Far East and had convinced itself it had done enough. This really illustrates the basic problem of Russian naval strategists. They could not afford adequate fleets in all three theaters and opted to reinforce the Far East from the Baltic in time of war." Nicholas Papastratigakis. *Russian Imperialism and Naval Power: Military Strategy and the Build-up to the Russo-Japanese War*. New York: I.B. Tauris, 2011 (234).

⁷¹² "The revolutionary upsurge was concentrated in Ekaterinoslav [the contemporary Ukrainian city of Dniepr], where, seemingly overnight, labor made the transition from a movement characterized by spontaneous, uncoordinated, nonpolitical disturbances to a movement able to coordinate a general strike. From the first general strike in Ekaterinoslav [Dniepr] in 1903 until 1905, when general strikes recurred in January, June, October, and December, workers greeted calls for strikes with mass work stoppages and mass participation in rallies and demonstrations. Revolutionary-party commentators thought that during the 1905 revolution, 'perhaps the most important center of the Russian labor movement after St. Petersburg was Ekaterinoslav [Dniepr]. At every stage, the movement proceeded here almost as brilliantly as in the capital.'" Charters Wynn, *Workers, Strikes and Pogroms* (165).

⁷¹³ "Of the hundreds of pogroms that occurred throughout the empire between October 1905 and January 1906, forty-one occurred in Ekaterinoslav [Dnipro] province, which encompassed most of the Donbas-Dnieper Bend. This pogromist wave was among the most deadly in the empire: 285 people died, an incalculable number were injured, and the 13.2 million rubles' worth of damage exceeded the losses in any other province. In the words of a local newspaper, 'Ekaterinoslav suffered all the horrors of the Dark Ages, as people had their eyes gouged out and were cut to pieces.' Those raped included young girls and pregnant women. Children were thrown out the windows of multistory buildings. By the end of Ekaterinoslav's [Dnipro's] three-day pogrom, nothing thought to be of any value was left behind, as pogromists pillaged 311 business establishments, 40 apartment buildings, and 5 houses. Many buildings were set afire and burned to the ground. Ekaterinoslav's [Dnipro's] pogrom left 95 dead, 245 seriously wounded, and thousands homeless and destitute. In Yuzovka [Donetsk], pogromists did almost a million rubles' worth of damage as they looted and destroyed 84 stores and more than 100 residences. Yuzovka's [Donetsk's] pogromists killed 10 Jews and wounded 38, not including countless rape victims, during their

most important consequences was the plebianization of anti-colonial nationalisms heretofore restricted to cultural or political elites. This plebianization was especially noticeable in Russian-colonized Ukraine and Poland. As Serhii Plokhyy observed:

In October 1905, on the same day that Emperor Nicholas I issued his proclamation, official restrictions on Ukrainian publications were dropped as well. By December 1905, two Ukrainian-language newspapers were being printed in Lubny and Poltava. In September 1906, Ukrainian liberals began to publish the first daily newspaper in Ukrainian – Rada (Council) – in Kyiv. In 1907, they began to issue the first Ukrainian-language journal. The first academic publication in Ukrainian appeared in the following year. By that time there were nine Ukrainian-language newspapers altogether, with a total print run of 20,000 copies. That was just the beginning: the following years saw an explosion of Ukrainian-language publishing. The leading genre was the illustrated brochure with humorous content, accounting for an overall print run of close to 850,000 copies between 1908 and 1913, followed by poetry, with a total print run approaching 600,000 copies.⁷¹⁴

The 1905 uprisings were the key incubator of Mykola Mikhnovsky's *Ten Commandments*, one of the first documents of a progressive Ukrainian nationalism.⁷¹⁵ They also ushered in the permanent political mobilization of Russian-colonized Poland, resulting in mass unionization and the mass political participation of women. In the words of Wiktor Marzec:

While the events of 1904-1907 are best known as the Russian Revolution of 1905, a large part of the militant actions, strikes, street fights, and other forms of social unrest actually happened in the urban centers of Russian Poland. Over one-third of strikes in the entire empire happened there, and they were generally more massive than elsewhere, with up to 90 percent of workers striking at least once in 1905. These were not only sporadic outbursts; by 1906 one-fifth of Polish workers had joined a labor union, and a similar proportion had joined a political party. Women accounted for up to one-fifth of those involved. Though the turmoil had a different dynamic outside the cities, the skirmishes also affected the rural population, radicalizing landless peasants and farm workers.⁷¹⁶

After months of popular pressure, punctuated by the conclusive defeat of the Russian
rampage.” Charters Wynn, *Workers, Strikes and Pogroms* (214-215).

⁷¹⁴ Serhii Plokhyy. *The Gates of Europe: A History of Ukraine*. New York: Basic Books, 2021 (193-194)

⁷¹⁵ Mikhnovsky co-founded the Ukrainian National Party, which issued a ten-point manifesto containing the following points: “1. One united, undivided, independent, free, democratic Ukrainian Republic from the Carpathians to the Caucasus is the Ukrainian national ideal. Every Ukrainian child must be convinced that it was born to make this ideal a reality. 2. All people are your brothers. However, the Russians, Poles, Hungarians, Romanians and Jews remain the enemies of your people so long as they suppress and exploit them.” <https://diasporiana.org.ua/wp-content/uploads/books/22950/file.pdf>.

⁷¹⁶ Wiktor Marzec. *Rising Subjects: The 1905 Revolution and the Origins of Modern Polish Politics*. Pittsburgh: University of Pittsburgh Press, 2020. Introduction.

navy by the Japanese navy at the Battle of Tsushima on May 27 and 28, 1905, the Romanov dynasty finally defused the protest wave by transforming the empire into a constitutional monarchy on August 6, 1905. The new Russian parliament had a tiny electorate, wielded limited power, and would be frequently dissolved by the dynastic authorities over its subsequent eleven years of existence. Nonetheless, it was the first concrete step towards democracy within the Romanov empire, and the third such attempt in the West Asian region.⁷¹⁷

Small-scale insurrections continued to occur in the fall and winter of that year, the most famous of which occurred in Moscow's Presnensky district, in Ukraine's city of Sevastopol, and in the Ukrainian region of the Donbas in December 1905.⁷¹⁸ However, the dynasty's political concessions succeeded in restabilizing the imperial army, which proceeded to crush these insurrections at the cost of an estimated 15,000 lives.

The single most important long-term consequence of the Russo-Japanese war was to kick the East Asian and West Asian doom loops into high gear. In East Asia, Japan's imperial elites doubled down on colonial adventurism by expanding the Japanese navy, launching the settler colonization of China's Manchurian province, and annexing Korea as a colony in 1910. This set the stage for the Japanese empire's catastrophic 1915-1945 colonial adventurist war on China.

In West Asia, the temporary military eclipse of the Russian empire set off a similar avalanche of colonial adventurism by the Austrian and German empires. Germany's Chancellor Bernhard von Bülow utilized Germany's newly-constructed navy to instigate the 1905 Moroccan crisis on March 31, 1905, threatening to counter France's planned colonial intervention in Morocco with a German military invasion of France. While the resulting diplomatic furor resulted in the resignation of France's Foreign Minister and an international conference to settle the dispute, none of the other European empires supported the German position and the French empire eventually obtained imperial suzerainty over Morocco anyway.⁷¹⁹ Even worse, the crisis

⁷¹⁷ The first was the 1651-1653 Khmelnytsky uprising by the Ukrainian Cossacks against the Polish nobility, the second was the Polish-Lithuanian Commonwealth's 1791-1793 constitutional monarchy, while the fourth was the December 1905 protests which ushered in the 1905-1911 constitutional revolution within Iran's dynastic empire.

⁷¹⁸ Charters Wynn, *Workers, Strikes and Pogroms* (250-251).

⁷¹⁹ "Bülow demanded that the French convene a European conference to decide on the measures to be taken in Morocco, on the premise of upholding the 'open door' there. Bülow and Holstein hoped to prevent France from securing through unilateral intervention even more power than it already possessed in North Africa. When [France's Foreign Minister Théophile] Delcassé refused to accept a conference, the crisis reached its height. Under the threat of a Franco-German war breaking out over the deadlock, the cabinet in Paris decided to renounce intervention on its own and forced the foreign minister to resign on 6 June 1905. This represented a symbolic victory for Berlin. But by the time the international conference convened at Algeciras in southern Spain in January 1906, it was clear that Bülow had been quite wrong to expect the powers to oppose French intervention and grant Germany equal participation in taking over the running of Morocco's affairs. It turned out to be Germany that was isolated, with only Austria-Hungary and Morocco supporting Berlin's demands. After moments of fear that Germany would throw over the table and resort to a test of strength – perhaps even a military one – with France alone, the conference concluded by giving the French more or less what they had claimed for themselves at the outset. Bülow was left with a stinging diplomatic rebuff." David G. Herrmann. *The Arming of Europe and the Making of*

convinced Britain's imperial elites to seriously prepare for a Continental intervention to fight Germany's land army alongside France.⁷²⁰

Similarly, Austria's military elites began to intensively lobby for a preemptive war against Italy as early as 1904, as the Austrian and Italian empires moved to the brink of active hostilities.⁷²¹ While Franz Josef I rejected this war, Austria took advantage of Russia's defeat by annexing Bosnia-Herzegovina in 1908, thereby ensuring the mortal enmity of independent Serbia (about half of Bosnia's population was Serbian) as well as the Russian empire.

The Romanov response to its 1905 defeat was a combination of intensified neocolonial debt dependency vis-a-vis France to pay for a massive program of domestic rearmament, as well as intensified colonial adventurism vis-a-vis the Austrian and Ottoman empires as compensation

the First World War. Princeton: Princeton University Press, 1996 (38-39)

⁷²⁰ "The [Moroccan] crisis had the effect of stimulating Franco-British military cooperation for the future. It was not until the new Liberal government of Henry Campbell-Bannerman took office in January 1906 that long-term preparations began. The purpose of these was to redesign the British army so as to give it a permanent organization capable of sending a cohesive force to assist France rather than an ad hoc array of independent formations. The scheme was the brainchild of the new foreign secretary, Sir Edward Grey, and the secretary of state for war, Richard Burdon Haldane, two energetic members of the 'liberal imperialist' faction within the new cabinet. Grey and Haldane did not regard their party's progressive domestic policy as incompatible with an international strategy aimed at counterbalancing the power of Germany on the continent. Their plans involved a complete program of military reorganization, which did not reach Parliament until March 1906. The zealous Grierson had meanwhile been promising the French approximately 115,000 men arriving within a period varying from sixteen days to a month from mobilization. Haldane could tell that, without proper organization and transport arrangements, it would take two months to get even 80,000 men across the Channel. In November 1905 the Committee of Imperial Defence decided to start directing the newly produced quick firing field guns to the home force instead of to the Indian army, although the artillery would not be wholly reequipped until April 1906, by which time the crisis was over." David G. Herrmann, *The Arming of Europe and the Making of the First World War* (55-56).

⁷²¹ "Still, without any significant growth or diplomatic rupture, the Italian and Austro-Hungarian armies went from being allies to being enemies in all but name. German diplomats and military attaches reported with dismay on the sharpening rivalry from 1904 onward. Military competition developed in a mutual dynamic even though neither side had much to throw into the effort. The influence of Austria-Hungary's internal politics upon Conrad's personal foreign policy contributed to the antagonism, but for the most part the domestic situations of both powers constrained rather than propelled competition in armaments. Funds were limited, governments were disinclined to burden their populations with military sacrifices, and industrial capability was taxed even by the limited production that could be paid for. Nevertheless, an attitude of mutual hostility solidified, exacerbated by the need of early twentieth-century armies to make war plans and preparations for mobilization against each other in peacetime. Such measures were impossible to keep completely secret and were in the hands of professional general staffs that operated largely according to perceived technical military imperatives. Most dangerously of all, these military experts in the Austro-Hungarian case began to let technical calculations about the relative strength of armies drive them to advocate starting wars in order to adjust the balance and to solve even nonmilitary problems within the Dual Monarchy." David G. Herrmann, *The Arming of Europe and the Making of the First World War* (111).

for its East Asian losses. These destabilizing policies convinced the imperial elites of Austria and Germany to double down on their own equally destabilizing armament programs and colonial adventurisms – policies which achieved nothing but convince the core polities of the Entente to increase their own military spending.

The combined annual military expenditure of the Austrian and German empires rose from 49 million pound sterling in 1904 to 105 million pound sterling in 1913, and their land armies expanded from 969,000 soldiers to 1.2 million. Conversely, the combined annual military expenditure of the British, French and Russian empires increased from 105 million pound sterling in 1904 to 133 million pound sterling in 1913, while their land armies expanded from 1.8 million soldiers in 1906 to 2.2 million in 1913.⁷²²

The last element of the West Asian doom loop, namely the 1912-1913 implosion of Ottoman rule in southeastern Europe, was unwittingly triggered by Italy's own version of post-1878 maritime expansionism. This latter was a contradictory admixture of a partly progressive ethnic irredentism vis-a-vis the Italian-speaking regions of the Austrian empire and a wholly regressive colonial adventurism vis-a-vis Africa.

The prehistory of Italy's maritime expansionism can be traced back to 1869 when Italian merchants purchased Assab, a small coastal city in the future polity of Eritrea. The port became an official Italian colony in 1882, and Italy colonized additional Eritrean territory between 1886 and 1889. However, Italy's tiny navy and limited degree of industrialization meant that it was unable to keep pace with the post-1878 African imperial expansions of Belgium, Britain, France and Germany.

Italy's post-1894 colonial adventurism was very much an elite response to explosive internal conflicts between rural Italian landowners and industrial entrepreneurs on the one hand, and partly waged laborers, sharecroppers, subsistence farmers and fully waged workers on the other. The single most famous of these conflicts erupted in the democratic Fasci popular insurgency of Sicily in the 1890s. This insurgency involved hundreds of thousands of participants and triggered violent repression from government forces (with characteristic duplicity, Mussolini would steal the name of this insurgency for his own monstrous revanchism some thirty years later).⁷²³

The difficulty of quelling the Fasci uprising, combined with the catastrophic defeat of Italy's 1895-1896 invasion of Ethiopia by Menelik II's modernized army, convinced Italian elites to refrain from launching further colonial adventurisms for a decade thereafter. This policy of caution changed thanks to the combination of the internal push of Italy's post-1904 military

⁷²² David G. Herrmann, *The Arming of Europe and the Making of the First World War* (234, 237).

⁷²³ "Numbering 300,000 sharecroppers, agricultural laborers and small farmers, they named themselves Fasci, 'bundles', because while anyone can break a single stick nobody can snap a whole bundle. They mingled socialist ideas with religious millenarianism, wore red rosettes, and carried religious symbols and portraits of the king as well as pictures of Garibaldi. The targets of their protest meetings and processions were rising rents and food prices, high taxes, and discriminatory sharecropping contracts. Peasants began to seize land and occupy tax offices, burning mills and government buildings. The Italian government responded in 1894 by declaring a state of emergency and drafting in 40,000 troops. Hundreds of insurgents were shot or subjected to summary execution, a thousand were sent to a penal colony without trial, and many others were arrested." Richard J. Evans, *The Pursuit of Power* (111-112).

rivalry with the Austrian empire and the external pull of the French intervention in Morocco in 1906.

As early as 1902, Italy had signed a secret accord with France in 1902 allowing both polities to colonize either Morocco or Ottoman Libya whenever they wished. However, the Italian government took no concrete steps to do so until the French intervention in Morocco in 1906 (Morocco would be formally annexed by France in 1912). Italian elites subsequently launched the construction of Italy's first three naval dreadnoughts in 1910 and invaded Ottoman-controlled Libya in 1911.

While Italian forces quickly overwhelmed the tiny Ottoman garrison, the invasion was a wholly unproductive use of Italy's limited economic resources. The conquest required the expenditure of 1.3 billion Italian lire and the deployment of 100,000 Italian soldiers.⁷²⁴ It generated negative economic returns due to the fact that Libya had little arable farmland, a small population of only half a million people (the first Italian census in 1931 counted 704,000 residents), and almost no mineral resources to plunder (Libya's vast oil reserves would not be discovered until 1959).

The political justification for this invasion came from a well-organized media campaign by the pro-imperialist Italian Nationalist Association.⁷²⁵ The leading figure of this latter was Enrico Corradini, a novelist, essayist and rabid imperialist who later invented the central ideological tenet of Mussolini's Fascism, namely the rebranding of Italian national imperialism as "proletarian nationalism."⁷²⁶

⁷²⁴ Mark I. Choate. *Emigrant Nation: The Making of Italy Abroad*. Cambridge: Harvard University Press, 2008 (175).

⁷²⁵ "No one group in Italy reaped as many spectacular rewards [from the Libyan war] as did the Nationalists. Nationalism was able to use the war to substantiate major aspects of its doctrine and program. Friend and foe linked it with the colonial struggle. The association managed to preserve its existence and retain its individuality at a time when several influential Nationalists thought it faced the peril of being swallowed up in the fervor and excitement engendered by the war. Libya offered the Nationalists the opportunity to assume in national affairs a position out of proportion to their numbers and experience. Nationalism continued its inroads among various patriotic organizations, the civil service, leading professions, youthful intellectuals, heavy industry, and the armed forces, several influential officers of which were now on familiar terms with Corradini and the more important personalities of the Nationalist Association. By the conclusion of the war, the Nationalist movement had burrowed its way into Turinese, Milanese, Venetian, Roman, and Neapolitan centers of journalism. Agricultural, commercial, and industrial groups, Liberals and Conservatives, became more aware of the value and worth of this institutional force." Ronald S. Cunsolo (1965). "Libya, Italian Nationalism, and the Revolt against Giolitti." *The Journal of Modern History* 37:2 (197).

⁷²⁶ "Corradini characterized the [Libyan] war as a multi-faceted 'proletariat' revolution, which would reform the nation internally and alter the international balance of imperial power. Corradini and the imperialists unabashedly spoke of Libya as a cultivable land of 'Eden' that would launch Italy's colonial empire and stem the tide of emigration. Libya was also an opportunity to carve into what Corradini characterized as the Franco-British plutocratic hegemony, which was linked to the Ottoman Empire. Much like the far left, he characterized the 'plutocracies' as hypocritical capitalist exploiters who only spread liberal ideals, such as pacifism and humanitarianism, to maintain their hegemonic control.

What Italy's imperial apologists could not have foreseen, to be sure, was that their Libyan intervention would trigger the Balkan Wars of 1912 and 1913 and thereby usher in the apocalypse of 1914. Simply, Italy's 1911 invasion of Libya diminished the power of the Ottoman empire and gave the members of the Balkan League – a loose coalition of the semi-peripheral polities of Bulgaria, Greece, Montenegro and Serbia – the perfect opportunity to realize their long-standing irredentist claims on the Bulgarian, Greek, Montenegrin and Serbian populations of Ottoman-controlled southeastern Europe.

The result was the First Balkans War of 1912-1913. While the population of the Ottoman empire as a whole was more than twice the size of the League, the anti-Ottoman coalition had the advantage of superior short-term mobilization capacity. It eventually raised an army of 800,000 soldiers, whereas the Ottomans could only raise a land army of 315,000 and faced insuperable logistical difficulties thanks to the capacity of the Greek navy to constrain its Ottoman counterpart.⁷²⁷

No less important was the fact that the members of the Balkans League were motivated by a range of anti-colonial nationalisms rather than by dynastic allegiances. These nationalisms meant that the League's armies were irresistible on the territories where their respective ethnicities predominated, but ineffective as armies of imperial expansion outside of those territories.

One of the consequences of the First Balkan War was a continental war scare generated by the Serbian occupation of Albania in November and December of 1912, the first moment that

Corradini even claimed that the Italian conquest of Libya represented the regenerative march of civilization and morality against inert and unproductive plutocratic Europe." Mauro Marsella (2004). "Enrico Corradini's Italian nationalism: the 'right wing' of the fascist synthesis." *Journal of Political Ideologies* 9:2 (211).

⁷²⁷ "Demographically, the Balkan coalition was dwarfed by the Ottoman Empire's overall population of 24 million, with the populations of Bulgaria (4.3 million), Serbia (3 million), Greece (2.67 million), and Montenegro (250,000) together amounting to only 10 million...

...While the Ottoman army was indeed larger overall and could potentially put an army of nearly 600,000 in the field in Thrace and Macedonia, the Tripolitanian diversion curtailed available Turkish strength considerably. Bulgaria's peacetime army had only some 62,000 men, but these were buttressed by over 300,000 trained reservists. When fully mobilized, Bulgaria could field an army of over 350,000 men, enough alone to outnumber scattered Ottoman forces in Europe (let alone just in Thrace, where the main Bulgarian thrust would be directed). Serbia's peacetime army boasted 168,000 actives and almost as many reserves. Fully mobilized, she could put about 230,000 men into the field. Greece could contribute another 200,000 troops to the coalition. More important, with the underequipped, half-modernized Ottoman navy in flux (the office of naval minister changed hands nine times between 1908 and 1911), the substantial Greek fleet, boasting sixteen destroyers, nineteen torpedo boats, a submarine, and a fast armored cruiser, the *Georgios Averof*, ensured that the Balkan coalition could prevent the Ottomans from routing significant reinforcements across the Aegean from Anatolia. Even tiny Montenegro could put 44,500 men into the field, giving the Balkan League a striking force of some 800,000, while the Ottomans would be able to muster only about 315,000 effectives (200,000 in Macedonia, and 115,000 in Thrace)." Sean McMeekin. *The Ottoman Endgame: War, Revolution, and the Making of the Modern Middle East, 1908-1923*. New York: Penguin Press, 2015. Chapter 3: The Jackals Pounce.

the fault-lines of the 1914 showdown between the Entente and Central powers became clearly visible.⁷²⁸ While intensive European diplomacy managed to avoid a larger conflict,⁷²⁹ the dynastic authorities of Bulgaria, Greece and Serbia could not agree over control of the region of Macedonia (the contemporary territory of Northern Macedonia, western Albania, southern Kosovo, southern Serbia, southeastern Bulgaria and northern Greece). The result was the Second Balkan War of the summer of 1913, wherein the armies of Montenegro, Romania, Serbia and the Ottoman empire combined to defeat Bulgaria.⁷³⁰

In addition to a toll of 174,000 deaths and 400,000 wounded among the combatants (16%

⁷²⁸ “All the same, there was a serious European war scare in November-December 1912, not over the prospect of an Ottoman collapse, but of Serbian absorption of Albania. On November 17, Serbia’s Third Army reached the Adriatic coast at Alessio, about fifty miles north of Durazzo. While resistance continued among Muslim Albanian irregulars to the north and Ottoman troops to the south, it appeared that Serbia was about to win its coveted port on the Adriatic, crossing the one (though rather blurry) ‘red line’ Berchtold had laid down in Vienna. In response, Austria-Hungary took a serious step on November 21, mobilizing the IV, VII, and VIII Army Corps facing Serbia in Bosnia-Herzegovina and Dalmatia and, as insurance against possible Russian intervention, the I, X, and XI Army Corps in Galicia. In response the next day, Russia’s war minister, V. A. Sukhomlinov, wrote up orders for a ‘partial’ mobilization of Russia’s military districts of Warsaw (roughly, Russian Poland) and Kiev (Ukraine), facing Austria-Hungary, and Odessa (from which an amphibious operation in Constantinople might be launched). Tsar Nicholas II convened the Council of Ministers on November 23. The conservative chairman, V. N. Kokovtsov, argued that mobilizing the Warsaw district would force the Germans to mobilize too (likely true – the kaiser himself had promised Emperor Franz Josef I the day before that Germany would not leave her ally in the lurch if Russia mobilized), plunging Europe into war. Sazonov, who did not himself believe it was in Russia’s interest for Serbia to indulge Great Power pretensions by expanding to the Adriatic, went along with Kokovtsov, thus narrowly averting what might well have been the Great War – of 1912.” Sean McMeekin. *The Ottoman Endgame*. Chapter 3: The Jackals Pounce.

⁷²⁹ “The Balkan Wars commanded the attentions and energies of the Great Powers of Europe. Although the powers failed to prevent the outbreak of war in October 1912 and again in June 1913, they managed to cooperate diplomatically at the Ambassadors Conferences of London and St Petersburg and militarily at Constantinople in November 1912 and again at Scutari in April 1913. In their efforts to limit the outcome of the Balkan Wars, the Great Powers enacted the final efforts of a Concert of Europe, which had functioned more or less to maintain the balance on the continent since 1648.” Richard C. Hall, *The Balkan Wars 1912-1913* (142).

⁷³⁰ “The Bulgarian attack on Serbian positions on the night of 29-30 June unleashed the hostilities which had been escalating since the previous autumn. The Bulgarians, Greeks, and Serbs all perceived war as the means to resolve their disputes. Essentially, all three were fighting for Macedonia. The war presented the Bulgarians with an opportunity to reverse the Serbian alliance of 1912 and acquire all Macedonia. A greater Bulgaria could dominate the Balkans. The Greeks and Serbs not only faced the prospect of dividing the rich region between themselves, but also of preventing Bulgarian hegemony. Their alliance agreements in the spring of 1913 provided for northern Macedonia, including Skoplje, to remain with Serbia and southern Macedonia, including Salonika, to stay with Greece. After the fighting began, the Romanians seized the opportunity to resolve their dispute with Bulgaria over Dobrudzha, and the Ottomans used the occasion to take back Adrianople.” Richard C. Hall. *The Balkan Wars 1912-1913: Prelude to the First World War*. London: Routledge, 2000 (107).

to 20% of the 2.9 to 3.5 million soldiers mobilized), these two wars generated massive ethnic and confessional displacement. An estimated 400,000 Muslims fled or were driven to the east, while 200,000 Orthodox Christians fled or were driven to the west – a grim harbinger of the even more colossal ethnic displacements and colonial genocides of the third supercycle.⁷³¹

Just as importantly, the strengthening of Balkans irredentism and the diminution of Ottoman power only encouraged the Austrian, German, Italian and Russian empires to expand their respective armament programs and colonial adventurisms.⁷³² This raises the question of why the third Balkan war in as many years, namely the crisis of 1914, detonated the third supercycle precisely where the first two did not. To answer this question, we must analyze the final decade of Global Steam, namely the period 1904-1914, from the perspective of the British hegemon.

⁷³¹ “The Balkan Wars had cost the Ottoman Empire 340,000 casualties (50,000 killed, 100,000 wounded, 75,000 from disease, and 115,000 prisoners), Macedonia, four Aegean islands, and control of Albania (although negotiations still continued on its future status). Another 400,000 Balkan Muslims had been expelled or fled east to Türkiye, with the influx of these bitter refugees exacerbating ethnic tensions in the empire: some 200,000 Orthodox Christians, mostly Greeks from Thrace, Smyrna (Izmir), and the Aegean region, were expelled westward in turn.” Sean McMeekin. *The Ottoman Endgame*. Chapter 3: The Jackals Pounce.

⁷³² “The competition in armaments had begun as a result of a conscious effort by Germany to redress what appeared to be a growing preponderance on the side of the Entente in the wake of the [1911] Agadir crisis by means of the 1912 army law. The Balkan Wars tilted the likely balance of forces for a future war more heavily against Germany and Austria-Hungary by virtually eliminating their Ottoman ally from the European scene and replacing it with a strengthened array of Balkan states threatening the Dual Monarchy. This prompted Berlin and Vienna to accelerate the pace of their armaments irrespective of the strategic dangers and the domestic financial and political sacrifices that the increases entailed. The Entente powers' reaction to the military increases of their rivals included a series of army increases and increasingly ostentatious joint war planning. These activities constituted a reciprocal dynamic of military competition that was unlike anything that had occurred before 1911.” David G. Herrmann, *The Arming of Europe and the Making of the First World War* (197-198).

Chapter 12

Britain's Hegemonic Twilight 1904-1914

The final decade of Global Steam was marked by a phenomenon with no precedent in the Hapsburg long peace of 1492-1618 or the Dutch-French long peace of 1648-1775, although it did anticipate the final decade of the 1945-2008 US long peace. This phenomenon was Britain's hegemonic twilight. Whereas the contradictions of the Hapsburg hegemony did not become fatal until 1636, more than halfway through the first supercycle, and where the contradictions of the Dutch-French co-hegemony did not become terminal until 1789, one-third of the way through the second supercycle, the key economic, political and cultural pinions of the British hegemony began to disintegrate ten years prior to the third supercycle.⁷³³

This is not to argue that Britain's hegemony vanished completely or at a linear pace over the course of this decade. Rather, this hegemony counted down in the realms of economics, politics and culture at three different clock speeds. The fastest was the clock of economics, which counted down until 1917, namely the moment the United States supplanted Britain as the world's largest creditor polity. The second-fastest clock was that of culture, which counted down to 1923 – the moment when the industrial modernisms of Global Steam fully acceded to the international modernisms of the third supercycle. The slowest clock was that of politics, which counted down to 1933. This was the moment when Fascism seized power in Germany, the Soviet empire unleashed colonial famine-genocides on Qazaqstan and Ukraine, and Roosevelt's government launched the New Deal in the US.

The central paradox of these three clocks was that none of them coincided with the three corresponding inaugurations of US economic, political and cultural hegemony after 1945.⁷³⁴ The hallmark of the British hegemonic twilight was not endemic British weakness in the face of a rising United States, but the juxtaposition of enduring British strength vis-a-vis the comparative weakness of the four non-British core polities.

This weakness is most obvious in the paradoxical reality that the United States was an industrial titan with sharply limited geopolitical reach. It is true that US domestic investment averaged 20%-22% of its GDP between 1890 and 1914, significantly higher than the comparable British figure of 12%-15%. This enabled the US to catch up with the per capita GDP of the

⁷³³ The Hapsburgs retained the strategic upper hand in the Thirty Years War until the turning-point of 1636, when the kingdom of France tipped the balance by joining the Dutch-financed anti-Hapsburg coalition via the Treaty of Wismar. In 1789, the French empire was still basking in the glow of its successful naval intervention on behalf of the American revolutionaries, which had avenged the loss of France's North American colonies during the 1749-1754 Six Years War and handed Britain a shattering defeat. On the continent of Europe, the kingdom of France retained a vast demographic and military advantage vis-a-vis its dynastic rivals, while its Caribbean sugar colonies generated fantastic wealth for its merchant elites.

⁷³⁴ We will argue in volume 7 of this excursus that the economic hegemony of the US began in 1945, its political hegemony in 1950, and its cultural hegemony in 1954.

British isle by 1900 and to surpass the latter by 10% by 1914. It also caused the reduction of US agricultural employment from 52.9% of its total workforce in 1860 to 31.4% by 1910, while boosting US urbanization from 19.8% of its population in 1860 to 45.6% by 1910.⁷³⁵

One of the keynotes of this expansion was the boom in US automobile production, which skyrocketed from 3,219 units in 1901 to 129,823 in 1910, and to 477,137 by 1914.⁷³⁶ The key driver of this boom was the Ford company, which introduced its signature Model T in 1908. Thanks to the organizational innovations of the Taylorist assembly line – the combination of comparatively high wages, a five-day, eight-hour workweek, mind-numbingly routinized work-flows, and grueling line speed-up which the industrial sociologists later christened Fordism – the time required to produce the Model T dropped from 12 hours and 30 minutes down to 1 hour and 33 minutes. This enabled Ford to reduce its price from \$850 per auto to \$550, boosting production from 10,000 units in 1909 to 170,211 in 1912 and 308,162 by 1914 (by comparison, Britain produced only 16,000 autos in 1913).⁷³⁷

This automotive boom went hand in hand with a vast increase in hydrocarbon extraction. US coal consumption rose from 0.637 tons per capita in 1860 to 5.303 tons per capita in 1910, close to its historical peak.⁷³⁸ Meanwhile, US oil production skyrocketed due in large part to wells sunk in California. The state produced 470,000 barrels of oil in 1892, 24 million by 1903, and 73 billion in 1910, generating slightly more than one fifth of world oil production.⁷³⁹

Production in other US states increased as well, driven primarily by domestic demand. Whereas 152.2 million gallons or 62.5% of US oil production had been exported to foreign markets in 1871, most American oil was consumed domestically by the 1890s.⁷⁴⁰ All told, the US accounted for two-thirds to three-quarters of world oil production and a similar share of world oil consumption between 1900 and 1914.⁷⁴¹

The United States also led the world in the production of electricity and electrical appliances. Electricity production in the US rose from 5.969 megawatt-hours in 1902 to 24.752 megawatt-hours in 1912,⁷⁴² while the production of electric lamps soared from 7.5 million in

⁷³⁵ Stanley Lebergott. “Labor Force and Employment, 1800-1960.” Table 2. In: *Output, Employment, and Productivity in the United States after 1800*. Edited by Dorothy S. Brady. Washington: NBER, 1966. <https://www.nber.org/system/files/chapters/c1567/c1567.pdf>.

⁷³⁶ G.N. Georgano, *Cars 1886-1930* (127).

⁷³⁷ Conversely, US auto registrations rose from 8,000 in 1900 to 902,000 in 1912, the equivalent of 1.5% of the total US population aged 18 and older. Daniel Yergin, *The Prize: The Epic Quest for Oil, Money and Power*. New York: Simon & Schuster, 1991 (80). Population data from US Census. <https://www2.census.gov/prod2/decennial/documents/36894832v1ch05.pdf>

⁷³⁸ Coal consumption would peak at 5.583 tons per capita in 1920, and then gradually decrease to 3.395 tons per capita by 2010. Peter A. O’Connor and Cutler J. Cleveland (2014). “U.S. Energy Transitions 1780–2010.” *Energies* 2014:7 (7969).

⁷³⁹ Daniel Yergin, *The Prize* (82).

⁷⁴⁰ Ida M. Tarbell. *The History of the Standard Oil Company*. New York: McClure, Phillips & Co., 1905 (21).

⁷⁴¹ Data from BP Statistical Review of World Energy, collated by Our World in Data. <https://ourworldindata.org/grapher/oil-production-by-country>.

⁷⁴² US Census. *Historical Statistics of the United States, Colonial Times to 1957*.

1885 to 88.5 million in 1914.⁷⁴³

Yet this mammoth expansion did not translate into the economic heft, the political acumen, or the cultural legitimacy necessary to replace the British hegemon. In 1914, the British empire dominated the world's oceans with the world's largest navy and merchant fleet, administered one quarter of the planet's population and a similar share of the planet's surface area, and generated one-fifth of world GDP. The pound sterling reigned supreme as world reserve currency, while London financial markets remained the world's primary source of global liquidity and foreign direct investment.

By contrast, the US blue water navy in 1910 was only two-fifths the size of the British fleet and comprised only one-sixth of the world's capital naval vessels. While the US generated a respectable one-sixth of world GDP that same year, it administered only 6% of the world population and controlled only 6.3% of the earth's surface. The US dollar remained a local rather than a global currency, and the US was never a provider of liquidity to world markets during Global Steam (the US did not have a national central bank until 1913, when the US Congress passed the Federal Reserve Act).

US elites were also significantly constrained by the mass electoral politics specific to the industrialized regions of the core polities of Global Steam (i.e. the European territories of Belgium, Britain, France and the Netherlands, and the continental territory of the United States). This politics took the form of the rule of elected party duopolies or the opposing wings of a single centrist party, one mildly progressive and the other mildly revanchist. Between 1894 and 1914, these parties included the ruling Catholic and opposition Liberal parties in Belgium, the ruling Conservative and opposition Liberal parties in Britain, the progressive and conservative wings of the ruling Republican party in France, the ruling Liberal and the opposition Anti-revolutionary parties of the Netherlands, and the ruling Republican and opposition Democratic parties of the United States.

The rule of these duopolies was never absolute, but was contested by progressive alliances of fully and partly waged workers from below, and by revanchist alliances of plutocrats and authoritarian demagogues from above. On the progressive side of the ledger, a combination of social democratic and socialist political parties, independent journalists, anti-monopoly reform movements, anti-colonial campaigns, and trade union mobilizations (most notably the 1893 general strike in Belgium, the 1895 creation of the General Confederation of Workers in France, the 1902 United Mine Workers' strike in the US, the 1903 railroad strike in the Netherlands, and the 1909 strike of the Ladies Garment Workers in the US, the so-called "Uprising of the 20,000") won significant albeit modest economic and political reforms.

These progressive institutions and campaigns played a key role in the peaceful switch in the ruling national party or peaceful changes of national political coalitions in their respective polities.⁷⁴⁴ However, their political influence was mostly limited to the borders of their respective

https://www2.census.gov/library/publications/1960/compendia/hist_stats_colonial-1957/hist_stats_colonial-1957-chS.pdf.

⁷⁴³ Raymond Kane and Heinz Sell, editors. *Revolution in Lamps: A Chronicle of 50 Years of Progress. Second Edition*. Lilburn, GA: Fairmont Press, 2001 (37).

⁷⁴⁴ In Belgium, the Belgian Labor party won 16% of the parliamentary vote in 1894, 22% in 1900, 7% in 1910 and 30% in May 1914. In Britain, the Labor party won 1% of the parliamentary vote in 1896 and in

national empires, or to the fully industrialized regions of the other core polities. For example, 84% of the delegates to the 1896 congress of the Second International in London (i.e. 643 out of 768) were from the five core polities, 6% came from the German empire, while the remaining 10% were from ten European semi-peripheral dynastic empires and oligarchic republics (including one delegate from semi-peripheral British Australia).⁷⁴⁵

Conversely, the revanchisms of the core were by no means semi-feudal anachronisms or relics of the dynastic past. They were wholly modern formations halfway between the mid-19th century industrial revanchisms exemplified by Napoleon III and the US Confederacy, and the early 20th century international revanchisms typified by Italian, German and Japanese fascism.⁷⁴⁶

The contestation between these progressive and revanchist forces was especially sharp in the United States. Its progressive movements were energized by the fact that the United States had the largest single industrial economy in the world, by the openness of the US to millions of migrants from the Austrian, German and Russian empires, many of whom brought various traditions of progressive politics and dissident thinking with them, and by the fact that the US had one of the most developed traditions of free speech, free assembly and mass electoral participation among the core polities. Conversely, its revanchist movements were supercharged by the fact that the US had some of the wealthiest plutocrats, the most explosive regional inequalities, and the most entrenched neocolonial despotisms of these same polities.

The main features of US core revanchism included the national immiseration of fully waged workers through union-busting (most notoriously, the crushing of the 1892 Homestead strike by Carnegie's private army), as well as the consumer fraud perpetrated by J.D. Rockefeller's oil monopoly, J.P. Morgan's steel monopoly, and the railroad monopolies of Jay Gould and Cornelius Vanderbilt.

Yet no less important were the regional immiseration of partly waged laborers via sharecropping and debt peonage, and the local immiseration of wageless laborers by means of carceral gulags. W.E.B. Du Bois famously captured the regional and local nuances of US core revanchism in the phrase, "The country is rich, yet the people are poor."⁷⁴⁷ Eric Foner has

1900, 5% in 1906, and 7% in 1910. In France, the Socialist Party won 10% of the parliamentary vote in 1898 and 7% in 1902, forcing the Republicans to form centrist coalitions between 1902 and 1914. In the Netherlands, the Social Democratic party won 3% of the parliamentary vote of 1897, 10% in 1901, 14% in 1909 and 19% in 1913. In the United States, the Populist party flourished from 1892 and 1896 and ushered in the era of Progressive anti-monopoly legislation.

⁷⁴⁵ Of this ten percent, about 6% were from the German empire and another 3% from the Russian empire. International Workers Congress 1896.

https://archive.org/details/Proceedings_Of_The_International_Workers_Congress_London_July_and_August_1896.

⁷⁴⁶ W.E.B. Du Bois was one of the first to grasp this historical trajectory: "It [Northern industry] began in 1876 an exploitation which was built on much the same sort of slavery which it helped to overthrow in 1863. It murdered democracy in the United States so completely that the world does not recognize its corpse." W.E.B. Du Bois. *Black Reconstruction in America: Toward a History of the Part of which Black Folk Played in the Attempt to Reconstruct Democracy in America, 1860-1880*. New York: Harcourt Brace, 1935. Chapter 7.

⁷⁴⁷ "Here [in rural Georgia] in 1890 lived ten thousand Negroes and two thousand whites. The country is

seconded this insight by arguing that the southern elites of the United States reinvented themselves after 1865 as neocolonial oligarchies.⁷⁴⁸

In a related vein, Roger Ransom and Richard Sutch have shown how southern merchants became local financial monopolists, charging interest rates of between fifty and seventy percent during 1881-1889 and immiserating farmers.⁷⁴⁹ In the five southern states which specialized in cotton production, the per capita production of food crops dropped by half between 1860 and 1870 and stagnated at this level until 1890. Similarly, swine production per capita fell from 1.64 in 1860 to 0.73 in 1870, and remained at this level until 1890.⁷⁵⁰ Ransom and Sutch's stinging conclusion:

The rural merchant of the Cotton South was a monopolist who held a local, territorial monopoly over credit. As a monopolist he [sic] exploited his customers by charging exorbitant prices. In the traditional economic analysis, a monopolist is condemned not merely for overcharging but also for underselling, since the quantity of the good demanded is typically lower as a consequence of its higher price. In this particular instance, however, the furnishing merchant was able to prevent the farmers'

rich, yet the people are poor. The keynote of the Black Belt is debt; not commercial credit, but debt in the sense of continued inability on the part of the mass of the population to make income cover expense. This is the direct heritage of the South from the wasteful economies of the slave regime; but it was emphasized and brought to a crisis by the Emancipation of the slaves. In 1860, Dougherty County had six thousand slaves, worth at least two and a half millions of dollars; its farms were estimated at three millions – making five and a half millions of property, the value of which depended largely on the slave system, and on the speculative demand for land once marvelously rich but already partially devitalized by careless and exhaustive culture. The war then meant a financial crash; in place of the five and a half millions of 1860, there remained in 1870 only farms valued at less than two millions. With this came increased competition in cotton culture from the rich lands of Texas; a steady fall in the normal price of cotton followed, from about fourteen cents a pound in 1860 until it reached four cents in 1898. Such a financial revolution was it that involved the owners of the cotton-belt in debt. And if things went ill with the master, how fared it with the man?" W.E.B. Du Bois, *The Souls of Black Folk*. Chapter 8.

⁷⁴⁸ "New laws also redefined in the interest of the planter the terms of credit and the right to property—the essence of economic power in the rural South. Lien laws now gave a landlord's claim to his share of the crop precedence over a laborer's for wages or a merchant's for supplies, thus shifting much of the risk of farming from employer to employee. North Carolina's notorious Landlord and Tenant Act of 1877 placed the entire crop in the planter's hands until rent had been paid and allowed him full power to decide when a tenant's obligation had been fulfilled – thus making the landlord 'the court, sheriff, and jury,' complained one former slave. Beginning in 1872 with *Appling v. Odum* in Georgia, moreover, a series of court decisions defined the sharecropper not as a 'partner' in agriculture or a renter with a property right in the growing crop, but as a wage laborer possessing 'only a right to go on the land to plant, work, and gather the crop.' At the same time, the process of enclosing the open range (thus preventing those without land from owning livestock) and restricting trespassing and hunting, suspended during Republican rule, now resumed." Eric Foner, *Reconstruction*. Chapter 12.

⁷⁴⁹ Roger L. Ransom and Richard Sutch. *One Kind of Freedom: The Economic Consequences of Emancipation*. Cambridge: Cambridge University Press, 2001 (130).

⁷⁵⁰ Roger L. Ransom and Richard Sutch, *One Kind of Freedom* (153).

demand for credit from contracting in response to the exorbitant interest rates charged. The merchant compelled the farmer to plant and cultivate more cotton and less foodstuffs than he [sic] would have freely chosen to do given the high price of credit. Apparently the merchant used his control over the farmers' crop decisions not merely to maintain the balance between cotton and corn production that had existed before the appearance of the credit monopoly, but to push significantly beyond that point toward specialization in cotton. As we have seen, there was an otherwise inexplicable shift away from grain crops and animal husbandry and toward cotton in the Cotton States following the Civil War. The monopolist in this case both overcharged and oversold his product.

Every farmer in the Cotton South was harmed as a consequence of the merchants' coercion. Those who entirely avoided the need for credit by achieving self-sufficiency in grain and pork were making crop decisions that were less than optimal. In a free market they might well have chosen a crop mix that required the purchase of some corn. Their self-sufficiency in foodstuffs would represent, therefore, a self-imposed reduction in economic efficiency designed solely to evade exploitation by a monopolist. The farmers who avoided the credit system by accumulating sufficient cash to finance all their grain purchases without asking for credit were forgoing the interest such cash assets might have earned had they been productively invested.⁷⁵¹

This system of neocolonial despotism was most prominent in twelve of the sixteen US states and federal districts where systems of wageless labor had once generated a significant degree of economic activity between 1783 and 1865.⁷⁵² These twelve states comprised one quarter of the US population during Global Steam, and accounted for a similar share of all seats in the US House and Senate.⁷⁵³

Between 1878 and 1965, white oligarchies controlled these twelve states as well as their corresponding Congressional seats through Jim Crow, the system of racial terror and legal apartheid which deprived African Americans and poor whites in most of the former Confederate states of the right to vote as well as almost all other democratic rights between 1878 and 1965. Jim Crow was enforced by covert despoticisms between 1878 and 1900, and by open despotism after 1900.⁷⁵⁴

⁷⁵¹ Roger L. Ransom and Richard Sutch, *One Kind of Freedom* (168).

⁷⁵² These states and districts were Alabama, Arkansas, Delaware, the Federal District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas and Virginia.

⁷⁵³ According to the US Census, the combined population of Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia remained at 24% of the national total between 1870 and 1910 (i.e. 9,487,386 out of 38,925,598 in 1870 and 22,392,414 out of 92,228,496 in 1910).

⁷⁵⁴ "Not until after the economic system began to lose its power to ensure that the racial 'inferiority' of blacks would remain well established did southern states begin to pass Jim Crow laws. The first laws of this type adopted in the South were those applying to railroad passengers, and they did not come to South Carolina until 1898, to North Carolina until 1899, and to Virginia until 1900. Separation of the races in railroad stations, on street cars, and on steamboats was a twentieth-century innovation. Separate entrances to theaters, separate toilet facilities and drinking fountains, ticket windows for 'whites only' and 'colored' were likewise products of the period between 1900 and 1918. It was in 1915 that South Carolina passed a

The event which exemplified the transition from covert to open despotism was the Wilmington massacre of November 1898, wherein a white mob overthrew the elected government of Wilmington in a violent coup. Somewhere between 15 to 300 African American citizens were murdered while at least 1,500 others were exiled, including a number of white residents.⁷⁵⁵

Instead of being punished, three of the coup's perpetrators became governors of North Carolina, four became members of the US House of Representatives, and three others became US Senators.⁷⁵⁶ David Zucchino has described how the same Republican elites who launched the Spanish-American war abetted this domestic coup:

After escaping Wilmington, [Alex] Manly first went to Washington, DC. He spoke to federal officials – he never said who – and pleaded with them to prosecute the white supremacists responsible for the killings of November 10. According to his son, Milo Manly, Alex managed to secure an interview with McKinley, who assumed from Manly's light complexion that he was a white man. After Manly asked the president for federal intervention, it dawned on McKinley that he was speaking to the black editor who had caused all the trouble in Wilmington.

'When he realized that Manly was a Negro – and worse, the alleged instigator of the riot – the President ordered him out of the White House,' Milo Manly told a historian in 1977.

Alex Manly never mentioned a meeting with McKinley, but for the rest of his life he spoke

law prohibiting black and white workers from sharing the same room, entrance, exit, doorway, stairway, or window at the same time and from using the same 'lavatories, toilets, drinking water buckets, pails, cups, dippers or glasses' at any time. Southern states established separate hospitals, separate prisons, separate mental institutions, and separate orphanages. State parks and state colleges denied blacks admission to facilities established for whites." Roger L. Ransom and Richard Sutch, *One Kind of Freedom* (197).

⁷⁵⁵ "Before the 1898 coup, Wilmington was 56 percent black. That percentage dropped precipitously in the years after 1898. The 1900 federal census listed Wilmington as 49 percent black." David Zucchino, *Wilmington's Lie*. Epilogue. Since the 1900 US census listed the population of Wilmington as 20,976, a minimum of 1,500 African American residents were either murdered or exiled by the coup.

⁷⁵⁶ Specifically, Charles Aycock became the 50th governor of North Carolina, John Bellamy became a North Carolina State Senator and a US Congressman, Josephus Daniels became Secretary of the Navy under President Wilson and US Ambassador to Mexico between 1933-1941, Rebecca Felton was given an honorary one-day appointment in the US Senate, Robert Broadnax Glenn became a North Carolina state senator and later state governor, Tom Jarvis founded East Carolina University, Norman Jennett went on to work at the *New York Herald* and *The Evening Telegram*, Claude Kitchin was elected to US Congress and eventually became House Majority Leader, W.W. Kitchin served in the US Congress and became governor of North Carolina, Cameron Morrison became a governor of North Carolina, a US senator and a member of the US Congress, George Rountree became a North Carolina Assemblyman and co-founded the North Carolina Bar Association, Furnifold Simmons became a US senator and chaired the Finance Committee, Ben Tillman became a US senator, Alfred Waddell became Mayor of Wilmington, Francis Winston was appointed Judge of the Superior Court for the Second Judicial District, was elected lieutenant governor of North Carolina, and served as US Attorney for the Eastern District of North Carolina. https://en.wikipedia.org/wiki/Wilmington_insurrection_of_1898.

bitterly of his interactions with white Republican officials in Washington. In January 1899, at the same time that Bernard's investigation was floundering, Manly abandoned all hope of federal assistance. In a speech to a black audience organized by a black minister in Providence, Rhode Island, he spoke caustically of the McKinley administration and told black men that they were now on their own.

'I bought a ticket and went to Washington, there putting my case before the administration. I was told that the country was powerless,' Manly told the gathering. 'Besides, it was too busy settling questions in the Philippines, and could not stop such pastimes as shooting down 'niggers,' or words to that effect. I said I was sorry that the nation had such a wide spirit of humanity that it could fight for the Cubans, but let the negroes be massacred at home.'⁷⁵⁷

Manley's reference to the occupation of the Philippines highlights the savage irony that US core revanchism had the same baleful effect on its domestic economy as the Spanish-American war had on the imperial aspirations of US elites. Far from catapulting the US to the status of imperial frontrunner, this war generated expensive occupations, enduring anti-colonial insurgencies and fierce domestic opposition which only reconfirmed the status of the US as a first-rank economy with a second-rank navy and a third-rank colonial empire.

In a similar fashion, the partial success of US core revanchism in enabling plutocratic looting and instituting Jim Crow only exacerbated the single most glaring weakness of the post-1865 US economy. This was its chronic lack of internal demand, something apparent everywhere from the chronic regional underdevelopment of the southern states vis-a-vis the rest of the US to punishing depressions which ravaged the national economy as a whole. In 1860, the twelve southern states which comprised the US neocolonial zone had an urbanization rate of 9.6% versus the national average of 19.8%, whereas in 1910 this zone had an urbanization rate of only 25.5% as compared to the national average of 45.6%. On the national level, the US economy spent 25 of the 54 years between 1860 and 1914 in a technical state of recession.⁷⁵⁸

One of the single most astute diagnoses of the second-rank status of the United States vis-a-vis the British hegemon was provided by Joseph Conrad's *Nostromo* (1904) in the form of Holroyd, the US plutocrat who bankrolled British expatriate and comprador capitalist Charles Gould in the fictional South American polity of Costaguana:

He [Holroyd] was a big-limbed, deliberate man, whose quiet burliness lent to an ample silk-faced frock-coat a superfine dignity. His hair was iron grey, his eyebrows were still black, and his massive profile was the profile of a Caesar's head on an old Roman coin. But his parentage was German and Scotch and English, with remote strains of Danish and French blood, giving him the temperament of a Puritan and an insatiable imagination of conquest. He was completely unbending to his visitor, because of the warm introduction the visitor had brought from Europe, and because of an irrational liking for earnestness and determination wherever met, to whatever end directed.

⁷⁵⁷ David Zucchino, *Wilmington's Lie*. Chapter 35.

⁷⁵⁸ These recessions included the downturns of 1860-1861, 1865-1867, 1869-1870, 1873-1879, 1882-1885, 1887-1888, 1890-1891, 1893-1894, 1895-1897, 1899-1900, 1902-1904, 1907-1908, 1910-1912, and 1913-1914.

“The Costaguana Government [said Holroyd] shall play its hand for all it’s worth – and don’t you forget it, Mr. Gould. Now, what is Costaguana? It is the bottomless pit of 10 per cent. loans and other fool investments. European capital has been flung into it with both hands for years. Not ours, though. We in this country know just about enough to keep indoors when it rains. We can sit and watch. Of course, some day we shall step in. We are bound to. But there’s no hurry. Time itself has got to wait on the greatest country in the whole of God’s Universe. We shall be giving the word for everything: industry, trade, law, journalism, art, politics, and religion, from Cape Horn clear over to Smith’s Sound, and beyond, too, if anything worth taking hold of turns up at the North Pole. And then we shall have the leisure to take in hand the outlying islands and continents of the earth. We shall run the world’s business whether the world likes it or not. The world can’t help it – and neither can we, I guess.”⁷⁵⁹

What was most striking about this passage was not so much its invocation of a US hegemony yet to come, i.e. the notion that the US would dominate the world’s markets where Britain had dominated the world’s oceans. It was the conspicuous absence of the two regions of the world-system where the British hegemony was about to unravel, namely West Asia and East Asia. Put more precisely, the absence of West Asia was racialized in the form of Holroyd’s imperial white masculinity, whereas the absence of East Asia was spatialized in the form of imperial maritime geography.

Conrad defined this imperial white masculinity as an admixture of Danish, English, French, German and Scottish ancestry, thereby excluding African Americans, Asian Americans and indigenous Americans, as well as the peoples of the Austrian, Italian and Russian empires who constituted the demographic majority of the immigrants who journeyed to the United States between 1894 and 1914. Conversely, the fact that Holroyd mentioned Cape Horn, located at the southern tip of South America, as well as Smith’s Sound, one of the straits of the Canadian Arctic, conveniently elided US ownership of the Panama Canal as well as the US territories and colonies of the Pacific – an omission all the more glaring given that Holroyd’s headquarters are located in San Francisco, the ninth largest US city by population in 1900 and one of its busiest ports.

This is the place to mention one of the most counterintuitive and paradoxical features of Britain’s hegemonic twilight, namely the slow but inexorable reconvergence of the economic, political and cultural contradictions of the polities of the core and the semi-periphery. The external signs of this reconvergence were apparent everywhere from the international dissemination of automobiles, light bulbs and household appliances to the wave of international labor struggles which erupted in the railroad and communications industries of the day.⁷⁶⁰ In the

⁷⁵⁹ Joseph Conrad. *Nostromo: A Tale of the Seaboard*. 1904. Chapter 6.

⁷⁶⁰ “Strikes of transport workers began in force in the 1880s in the United States, and in Europe, Asia, Africa, and the Middle East. In the United States, there was the Burlington Railroad Strike in 1888 and, in 1894, the Pullman Strike, which involved 125,000 workers on twenty-nine railroads, and which left 34 strikers dead and more than 50 wounded in clashes between strikers and some 12,000 federal troops and 5,000 federal marshals over the course of a week. In Britain, there were dockers’ strikes in 1898 and 1899; and, in 1911, a general strike involving 80,000 port workers took place in Southampton, Liverpool, Hull, Newport, Northeast coast, Humber, Leith, Manchester, Cardiff, and London, and was joined by

field of aesthetics, the two main features of this reconvergence were the accelerated diffusion of core aesthetics throughout the most heavily capitalized regions of the semi-periphery, and the concomitant deprovincialization of the national imperial audiences of the semi-periphery.

One of the paradigmatic examples of this dynamic of core diffusion and semi-peripheral deprovincialization occurred in the field of visual aesthetics. Whereas the most realized paintings of core artists such as Paul Cézanne, Henri Matisse and Claude Monet anticipated the phenomenon of post-1914 blockbuster cinema (i.e. the cycle from pre-production to casting, shooting, editing, post-production and distribution), the most realized paintings of the semi-periphery – those of Marc Chagall’s Belarusian Surrealism, Wassily Kandinsky’s Russian Expressionism, Pablo Picasso’s Spanish Cubism and Ilya Repin’s Russian late Naturalism – anticipated specific aspects of the cinematic work such as scriptwriting, stage performances, set and costume designs, special effects and so forth.

The key intermediation between the former and the latter was the French culture-industry, which generated consumer demand for the innovative works of core artists while sustaining the careers of obscure but potentially best-selling semi-peripheral artists. The classic example of this was French art dealer Ambroise Vollard, who exhibited the works of Cézanne at his Parisian gallery in early 1895, the works of Manet, Gauguin and van Gogh in June 1895, the works of Picasso in 1901, and the works of Matisse in 1905.

Nor was it an accident that many semi-peripheral artists either moved to Paris or were significantly influenced by French artists. Picasso settled permanently in Paris in 1901, while Chagall followed suit in 1910. Kandinsky became an artist in 1896 and moved to the more industrialized semi-periphery of Germany after the life-changing epiphany of viewing one of Monet’s *Haystacks*:

striking railway workers, coal porters, lightermen and carters. The Great Anatolian Railway strike took place in September 1908 in the Ottoman Empire, and there were 104 strikes there in the last half of that year. In 1900, tram workers in Alexandria went on strike, and riots and revolutionary turmoil in Cairo and upper Egypt were violently repressed. Cairo tram workers went on strike in October 1908, and there was an almost simultaneous strike of tramworkers in Alexandria and Cairo in July and August 1911. In October 1910, railway workers throughout Egypt went on strike and cut the rail lines to Upper Egypt. A high level of labor violence also began in the plantation belt of the Dutch Indies in 1900. In addition, there was a series of massive general strikes in Argentina between 1902 and 1910, leading to violent confrontations between workers and the police and the imposition, by the national government, of a state of siege.

Trade-union activity increased around the world with the upsurge of strikes. Between 1889 and 1900, the trade-union movement in Britain ‘leaped to something like one and a half million members’, and by 1914 it had grown to about four million. European workers promoted trade unionism around the world. They formed unions in South Africa beginning in the 1880s and, by 1900, they were organized in Rhodesia, Mozambique, Algeria, and Egypt. In the early years of the twentieth century, European railway workers formed trade unions in Rhodesia, Dahomey, the Ivory Coast, the Sudan, and Ethiopia; and European plantation employees formed a union in the Dutch Indies.” Sandra Halperin. “Chapter 6: War and Social Revolution: World War I and the ‘Great Transformation’.” In: *Cataclysm 1914: The First World War and the Making of Modern World Politics*. Edited by Alexander Anievas. Leiden: Brill, 2015 (182-183).

At the same time I experienced two events that stamped my whole life and momentarily shook me to the core. This was the exhibition of French impressionists in Moscow – above all Claude Monet’s *Haystacks* – and a production of Wagner in the Court Theater – *Lohengrin*.

Before then I had only known realistic art, actually only that of the Russians, I had stood around gawking at Repin’s portrait of Franz Liszt, etc. And suddenly for the first time I saw a picture. From the catalog I learned that *that* was a haystack. I couldn’t recognize it. I found this non-recognition embarrassing. I felt the painter had no right to paint so indistinctly. I had a vague feeling that the object was missing from this image. And noticed with astonishment and confusion that the picture isn’t just compelling, but is indelibly imprinted in the memory and quite unexpectedly hovers before the eyes down to the last detail. All this was unclear to me and I could not draw the simplest conclusion from this experience. But what was completely clear to me – that was the unimaginable power of palette, heretofore hidden from me, which went far beyond my dreams. The painting acquired the power and splendor of a fairytale. Unconsciously, however, the notion of the object as an indispensable element of the picture was discredited. In summary, I had the impression that a small piece of my fairytale Moscow already existed on the canvas.⁷⁶¹

Ilya Repin spent two life-altering years in Paris from 1873-1875, visited again in 1883 and in 1900, and eventually settled in 1907 in the Finnish village of Kuokkala just north of St. Petersburg, i.e. the most industrialized semi-periphery within the Romanov empire.⁷⁶²

This reconvergence was responsible for a number of painterly innovations which were the key building-blocks of post-1914 cinema, albeit with the proviso that the artists of the core anticipated cinematic space whereas the artists from the semi-periphery anticipated cinematic

⁷⁶¹ “Zu derselben Zeit erlebte ich zwei Ereignisse, die einen Stempel auf mein ganzes Leben drückten und mich damals bis in den Grund erschütterten. Das war die französische impressionistische Ausstellung in Moskau – in erster Linie ‘der Heuhaufen’ von Claude Monet – und eine Wagneraufführung im Hoftheater – Lohengrin.

Vorher kannte ich nur die realistische Kunst, eigentlich ausschließlich die Russen, blieb oft lange vor der Hand des Franz Liszt auf dem Porträt von Repin stehen u. dgl. Und plötzlich zum erstenmal sah ich ein Bild. Daß das ein Heuhaufen war, belehrte mich der Katalog. Erkennen konnte ich ihn nicht. Dieses Nichterkennen war mir peinlich. Ich fand auch, daß der Maler kein Recht hat, so undeutlich zu malen. Ich empfand dumpf, daß der Gegenstand in diesem Bild fehlt. Und merkte mit Erstaunen und Verwirrung, daß das Bild nicht nur packt, sondern sich unverwischbar in das Gedächtnis einprägt und immer ganz unerwartet bis zur letzten Einzelheit vor den Augen schwebt. Das alles war mir unklar, und ich konnte die einfachen Konsequenzen dieses Erlebnisses nicht ziehen. Was mir aber vollkommen klar war – das war die ungeahnte, früher mir verborgene Kraft der Palette, die über alle meine Träume hinausging. Die Malerei bekam eine märchenhafte Kraft und Pracht. Unbewußt war aber auch der Gegenstand als unvermeidliches Element des Bildes diskreditiert. Im ganzen hatte ich den Eindruck, daß ein kleines Teilchen meines Märchen-Moskau doch auf der Leinwand schon existierte.” Wassily Kandinsky. *Reminiscences*. [Rückblick]. Stuttgart: Woldemar Klein Verlag, 1955. This is my translation.

⁷⁶² Kuokkala was part of the Finnish territory annexed by the Soviet empire in 1940 and was renamed Repino in 1948.

temporality. For example, Cézanne delivered the first blueprint of cinematic editing in *Still Life With Apples, A Bottle, and a Milk Pot* (1904), *Still Life with Flower Holder* (1905), *Jourdan's Cottage* (1906), *Mont Sainte-Victoire Seen from Les Lauves* (1906), and *River at the Bridge of Three Sources* (1906), Matisse forged the first cinematic storyboard in *Dance II* (1910) and *Vase of Irises* (1912), while Monet established the cinematic panorama in the two hundred and twenty-one iterations of the *Water Lilies* series he produced from 1904 until 1926.

By contrast, Chagall's *The Sabbath* (1910) drenched the whitewashed interior of a Belarusian Jewish family home with a proto-surrealist color scheme and thereby registered the explosive contradiction between two contradictory experiences of time. These latter were the industrial temporality hinted at by the pendulum clock on the wall, and the lived temporality of the shtetl, the Jewish ghetto of Vitebsk, Chagall's home town. In a related vein, Chagall's *Dedicated to my Fiancée* (1911) fused the theme of the animal and the human in the form of a lascivious minotaur sprawling in a surrealist dreamscape of entwined limbs and sensual red tone, while *To Russia, Donkeys and Others* (1911) showcased a female figure halfway between the Belarusian village doll and the Parisian shop window mannequin.

Chagall's other significant works during this period included *I and the Village* (1912-1913), *The Fiddler* (1913), *Paris Through the Window* (1913), *Pregnant Woman (Maternity)* (1913), and finally the magisterial *Self-Portrait With Seven Fingers* (1913-1914). These four works were proto-surrealist depictions of a Belarusian farmer or craftsman, a wandering Jewish musician, the urban landscape of Paris, Chagall's own village boyhood, and Chagall at work in his studio, respectively. The *Self-Portrait* was especially interesting thanks to Chagall's ingenious self-quotation of *To Russia, Donkeys and Others* as a miniature canvas located on the far right of the painting.

This canvas formed an inverted triangle whose upper vertices consisted of the night time Eiffel Tower depicted in the top left corner, and the daylight snapshot of Vitebsk shown in the top right corner. The visual direction of this triangle was matched by the angular shapes of the lower half of the painting, all of which point towards the canvas. In the lower left corner of the painting, Chagall's right hand held an oil palette which reproduced all of the colors depicted by the painting as a whole, while the seven fingers of his left hand appeared to graze the lower part of the canvas.

There was a comparable evolution of proto-cinematic temporality in the most successful works of Kandinsky and Picasso. Kandinsky's first classic, *Angel of the Last Judgment* (1911), featured a vivid color scheme reminiscent of Chagall with masses of yellow, green, blue and red paint which were halfway between late Impressionism and early Cubism. Two human figures were discernible in the center of the painting, one in male and the other in female garb, a stylized horse was visible to the center left, while fragmented snapshots of passersby and the angular shapes of buildings were depicted above and below these figures. Kandinsky's extraordinary *Composition IV* (1911) refined this formula by employing a color scheme dominated by blue and yellow (i.e. the colors of Ukraine's national flag, first created in 1848) and employing stylized black hash marks to suggest the presence of urban crowds, horse-drawn carriages and motor vehicles. Kandinsky's *Composition VI* (1913) and *Painting With White Border* (1913) took the next logical step by balancing these hash-marks with an autumn-based and winter-based palette of colors, respectively (the former suggested falling leaves, the latter hoarfrost and snow).

Kandinsky's single greatest pre-1914 achievement was undoubtedly *Composition VII* (1913), which situated its hash-marks in the center and center-left of the painting and employed the widest possible variation of color throughout the rest of the canvas, the painterly version of a forwards or backwards camera pan.

Picasso's first classic work of this period, *The Clarinetist* (1911), employed the classic Cubist strategy of depicting the fragments of a single photographic subject, albeit with a color scheme which suggested the surface of a violin or other wood-based musical instrument rather than the metal surface of the clarinet. Picasso's subsequent *Man With a Pipe* (1911), *Man With a Guitar* (1911) and *Man With a Mandolin* (1911) took the next logical steps of dispersing the fragmented photographic subject around the edges of each painting. But where Kandinsky employed hash-marks and color variations to suggest zones of visual density and empty space, Picasso utilized curlicues and the edges of objects which were halfway between artisanal goods and industrial commodities as a means of evoking performative subjects. Picasso's supreme work of this period, *The Aficionado (The Bullfighter)* (1912), portrayed the national imperial audience of the day as a fragmented subject stamped with typographical sign-posts (e.g. the word "Le Torero", which means bullfighter, is depicted in the lower left corner of the painting).

Last but not least, Repin's three leading works of this period, *Demonstration on October 17, 1905* (1907), *Cossacks on the Black Sea* (1908) and *The Self-immolation of Gogol* (1909), anticipated the cinematic medium-distance shot, the scenic panorama, and the close-up in the form of the urban crowds of the anti-dynastic uprising of 1905 and the anti-colonial tropes of Ukraine's Cossack mariners and Gogol's Ukrainian identity, respectively.

In the literary field, the reconvergence of the core and semi-periphery took the form of what can be termed the cinematization of space for core literary artists and the cinematization of temporality for the artists of the semi-periphery. This cinematization of space was visible everywhere from the history-drenched panoramas, the cinematic dissolves and close-ups, and the interior monologues of Marcel Proust's *Swann's Way* (1913) to the African American musical and literary industrial modernisms portrayed by James Weldon Johnson's *The Autobiography of an Ex-Colored Man* (1912), all the way to the comedy of linguistic plebianization depicted by George Bernard Shaw's *Pygmalion* (1912).

Conversely, the cinematization of temporality was the red thread binding semi-peripheral literary classics as diverse as Rabindranath's *The Boat-wreck* (1906), *Gitanjali* (1910) and *The Post Office* (1912), Leopoldo Lugones' *Strange Forces* (1906), Strindberg's *Ghost Sonata* (1907), Natsume Sōseki's *And Then* (1909), *The Gate* (1910), *To the Spring Equinox* (1912) and *The Heart* [Kokoro] (1914), Ivan Bunin's *The Village* (1911), Thomas Mann's *Death in Venice* (1912), Maxim Gorky's *My Childhood* (1913), and Osip Mandelstam's *The Morning of Acmeism* (1913) and *The Admiralty* (1913).

To see how this cinematization worked, consider the following passage in Rabindranath's *The Boat-wreck* (the noun used in the title is "nauka", a small watercraft employed in riverine colonial Bengal):

It was a miracle that existed in the form of a woman within this nondescript home in this densely populated city. There were countless students, countless lawyers, countless residents and visitors in this

capital city – of all of these people it was an ordinary person like Ramesh who had stood next to a young woman by a window in the yellow autumn sunshine and seen life and the world bathed in an infinite, joyous mystery. What a miracle this was! Such enchantment within the heart and such magic outside it.

Ramesh paced across the rooftop late into the night. Gradually the crescent moon sank behind the building in front him. The darkness of the night deepened on the surface of the earth, but still the sky glowed faintly in the embrace of the departing light.

An exhausted Ramesh shivered in the chill. A sudden anxiety took hold of his heart. He remembered that he would have to resume his fight on the battlefield of life tomorrow. Although there was not a crease of worry in the sky, no upheaval of tortuous effort in the moonlight, although the night was calm and silent, there was no respite from conflicts between individuals, for all of human society was in turmoil from its joys and sorrows, its obstacles and hindrances. Even in his disquiet, Ramesh wondered how the tranquility of eternity and earthly struggles could coexist. A short while ago he had seen everlasting love, serene and self-contained, at the heart of the universe, but the very next moment it appeared to be turning sullen, thwarted at every step by the bruising onslaught of existence, by the complexity of life. Which of these was the truth, and which, an illusion?⁷⁶³

This scene triangulated between Mandelstam's critique of Romanov maritime expansionism in *The Admiralty*⁷⁶⁴ and Proust's retrospective cinematography. But where Rabindranath set the fading but still-powerful illusions of British hegemonic capital in motion towards the harsh truth of semi-peripheral Bengal, Proust set the international tourism industry of France's core polity (cf. the panoramic shot of the French countryside villa and the gustatory invocation of French cuisine) in motion towards the semi-peripheral aesthetics of japonisme:

And as soon as I had recognized the taste of the chunk of madeleine dipped in the lime tea which my aunt gave me (although I did not yet know and would only discover much later why this memory made me so happy), the old gray house just on the street, where her room was, appeared like a theatrical display next to the little pavilion adjoining the garden, which had been constructed for my parents behind it (until then I had only seen the truncated side); and with the house, the city, the square where they had sent me prior to lunch, the streets where I went shopping from morning until evening and in all sorts of weather, the roads taken when the weather was fine. And just like that game where the Japanese amuse themselves by dipping tiny indistinct pieces of paper into a porcelain bowl full of water wherein, as soon as they are immersed, they expand, unwrap, take on color, differentiate, become flowers, houses of consistent and recognizable character, likewise now all the flowers in our garden and those in Mr. Swann's park, and the water lilies of Vivonne, and the good people of the village and their little lodgings and the church and all of Combray and its environs, all that takes form and solidity, issued [est sorti: came from], city and gardens, from my cup of tea.⁷⁶⁵

⁷⁶³ Rabindranath Tagore. *The Boat-wreck* [নৌকাডুবি]. Translated by Aruna Sinha. New York: HarperCollins, 2017. Chapter 16.

⁷⁶⁴ "Angry and whimsical, the jelly fish cling on; / anchors lie rusting like discarded plows – / the bonds of three dimensions burst / and the world's seas open before us". Osip Mandelstam. *The Admiralty*. 1913. Translated by Robert Chandler and Boris Dralyuk. <https://www.thewhitereview.org/poetry/poems/>.

⁷⁶⁵ "Et dès que j'eus reconnu le goût du morceau de madeleine trempé dans le tilleul que me

Writing from the actual as opposed to the imaginary space of Japan, Sōseki artfully illuminated the semi-peripheral lockdown of the Japanese empire in a sequence where the narrator commemorates the death of Emperor Meiji in 1912:

I went into the town to buy some black mourning cloth. We wrapped it around the shiny metal ball on the tip of our flagpole, hung a long three-inch-wide strip from the top of the pole, and propped it at our front gate, pointing at an angle into the street. The flag and the black mourning strip hung listlessly in the windless air. The little roof over our old gate was thatch; long exposure to rain and wind had discolored it to a pale gray, and the surface was visibly pitted. I stepped out into the street to examine the effect, taking in the combination of black strip and cloth and white muslin flag with its red rising sun symbol dyed in the center, and the look of this flag against the dingy thatch of the roof. Sensei [sensei: master, teacher] had once asked me what sort of street front our house had. “I imagine it looks very different from the gate at the house where I grew up,” he’d said. I would have liked to show Sensei this old house I was born in, but the idea also made me embarrassed.

Back inside, I sat alone at my desk, reading the newspaper and imagining the scenes in distant Tokyo. The images in my mind coalesced into a scene of the vast city stirring everywhere with movement in the midst of a great darkness; I saw Sensei’s house, a single point of light in the seething, anxious throng that struggled blindly through the darkness.

I could not know that even then the little light was being drawn irresistibly into the great soundless whirl of darkness, and that I was watching a light that was destined soon to blink out and disappear.⁷⁶⁶

In a comparable vein, Ivan Bunin’s *The Scream* depicted the semi-peripheral lockdown of the Romanov empire in the distorted mirror of the capital city of the Ottoman empire. The scandalous collectivity of this latter – Bunin ingeniously refunctioned the Orientalist trope of the

donnait ma tante (quoique je ne susse pas encore et dusse remettre à bien plus tard de découvrir pourquoi ce souvenir me rendait si heureux), aussitôt la vieille maison grise sur la rue, où était sa chambre, vint comme un décor de théâtre s’appliquer au petit pavillon donnant sur le jardin, qu’on avait construit pour mes parents sur ses derrières (ce pan tronqué que seul j’avais revu jusque-là); et avec la maison, la ville, la Place où on m’envoyait avant déjeuner, les rues où j’allais faire des courses depuis le matin jusqu’au soir et par tous les temps, les chemins qu’on prenait si le temps était beau. Et comme dans ce jeu où les Japonais s’amuse à tremper dans un bol de porcelaine rempli d’eau de petits morceaux de papier jusque-là indistincts qui, à peine y sont-ils plongés s’étirent, se contournent, se colorent, se différencient, deviennent des fleurs, des maisons des personnages consistants et reconnaissables, de même maintenant toutes les fleurs de notre jardin et celles du parc de M. Swann, et les nymphéas de la Vivonne, et les bonnes gens du village et leurs petits logis et l’église et tout Combray et ses environs, tout cela qui prend forme et solidité, est sorti, ville et jardins, de ma tasse de thé.” Marcel Proust. *In Search of Lost Time* [À la recherche du temps perdu]. Volume 1. 1913. This is my translation.

⁷⁶⁶ Natsume Sōseki. *The Heart* [Kokoro]. Translated by Meredith McKinney. Chapter 41. New York: Penguin Books, 2010 (88).

yashmak, the Ottoman-era female veil, into the cinematic-style panorama of Istanbul by night – was conjured up by means of the plebian name:

But everything in the distance – not only the hilly shores, but the Golden Horn slowly opening before us, and the wan specters of Scutari [Uskudar], Stamboul [Istanbul], Galata [Beyoğlu], Pera – everything is misted over with an opalescent whitish yashmak [veil], as soft, as diaphanous, as precious gossamers of Brusa [Bursa]. And behind this yashmak, like countless eyes, mysterious and splendidly beautiful, opalescently and unmovingly shine countless lights, far and near: of gold, and small, thickly strewn among the dark gardens of the Scutari shore; clustered, like swarms of bees from the top to the bottom on the hill of Galata; emerald and ruby, and large, upon the masts in the Golden Horn, and upon the buoys, and upon the guard-boats, reflected full-length in the mirror-like water; rare and somnolent in Stamboul, which is sleeping with open, glittering eyes on its knolls against the moon. I distinguished the stone and wooden houses of its suburbs, the ethereal, infinitely high minarets around the chalice-like cupolas of the white Ahmedia [Ahmadiyya], the ancient cupola, so dear to me, of Sophia, the gardens of the Serail [Seraglio], and the grey wall of the Palace of Constantine [Great Palace of Constantinople]. Once more I was inhaling that peculiar aroma, sweet and dry, of the shores of Türkiye.

Suddenly, somewhere from afar, there floated through the silence someone's faint, sobbing call: "Yu-ussouf!"⁷⁶⁷

It should be emphasized here that the reconvergence of the industrial modernisms of the core and semi-periphery was not yet characterized by one of the defining features of the international modernisms of the third supercycle, namely the open antagonism between progressive and revanchist works of art.⁷⁶⁸ Put bluntly, the leading aesthetic works of Britain's hegemonic twilight expressed the logic of deep-seated ambivalences which had not yet become terminal contradictions.

These ambivalences were especially prominent in the field of musical production, due to the fact that the commodification of sound during the late 19th and early 20th centuries lagged behind the analogous commodification of photographic and moving images by approximately three decades.⁷⁶⁹ This delay meant that the relative cultural distance between the greatest musical works of the core and those of the semi-periphery produced during the British hegemonic twilight was significantly less than the comparable distances between the core and semi-periphery in the more heavily capitalized fields of visual and literary aesthetic production,

⁷⁶⁷ Ivan Bunin. "The Scream." *The Elaghin Affair and Other Stories*. Translated by Bernard Guilbert Guerney. New York: Alfred & Knopf, 1935 (94-95).

⁷⁶⁸ We will see in volume 6 of this excursus how these cultural antagonisms were closely connected to the catastrophic economic crises of the third supercycle, as well as to the open political clash between international alliances of progressive democracies and anti-imperial and anti-colonial uprisings on the one hand, and the genocidal wars of international revanchism on the other.

⁷⁶⁹ The mass market of photography emerged in the 1850s, while that of phonograph records emerged in the 1880s. Similarly, the first commercial showing of cinema by the Lumière brothers occurred in Paris in 1895, whereas the first film with pre-recorded sound was the Hollywood film *The Jazz Singer* (1927).

i.e. the pre-1914 Debussy and Ives still existed in the same tonal universe as the pre-1914 Schönberg and Strauss.

One of the signature expressions of this cultural proximity was the musical Futurism of Igor Stravinsky's *Rite of Spring* (1913). Futurism was a semi-peripheral aesthetic movement which crested between 1909 and 1913 in the form of Marinetti's politically ambivalent manifesto, which oscillated between progressive and revanchist aesthetic impulses in the same way that Italy's constitutional monarchy hovered between progressive democratization and regressive colonial adventurism. Similarly, Stravinsky's balletic score temporarily bridged the divide between the nascent musical Expressionism of Schönberg and the nascent musical neoclassicism of Strauss, at the price of intensifying rather than resolving the underlying antagonisms between these respective aesthetic formations.

That said, the single most powerful and influential expression of this proximity consisted of Mahler's three final masterpieces, *Symphony 6* (1904), *Song of the Earth* (1909) and *Symphony 9* (1909). Whereas Mahler's earlier works were heavily informed by the innovations of Bruckner's ghost symphonies and Brahms' ghost sonatas, these late classics transformed the preindustrial folk tunes, rural dances, court music and choral music of the Austrian empire into templates of the music and sound recording culture-industries of the 20th century.

Before analyzing these works in greater detail, however, it is important to pause for a moment and reflect on the structural transformation of the field of musical production between 1904 and 1914 which made Mahler's achievement possible in the first place. Put more concretely, the greatest works of the core composers of this period, namely Debussy's *The Sea* (1905) and Charles Ives' *Central Park in the Dark* (1906), *The Unanswered Question* (1908), and *A Symphony: New England Holidays* (1913), functioned like cinematic franchises precisely where the greatest musical works of the semi-periphery, namely Alban Berg's *Altenberg Songs* (1912), Arnold Schönberg's *Five Orchestra Pieces* (1908), *Expectation* [Erwartung] (1909), *Pierrot Lunaire* (1912) and *The Fortunate Hand* (1913), Richard Strauss' *Salome* (1905) and *Elektra* (1909), Igor Stravinsky's *Firebird* (1910) and *Rite of Spring* (1912), and Anton Webern's *Five Movements for String Quartet* (1909), *Six Pieces for Large Orchestra* (1909-1910), and *Five Pieces for Orchestra* (1911-1913), functioned like hit films.

This logic of franchising was especially prominent in the case of *The Sea*, a work often misconstrued as the embodiment of the musical Impressionism Debussy had already departed from in *Nocturnes* (1899). *The Sea* replaced Wagner's subjective leitmotifs and objective phantasmagoria with micrological tone-cells and macrological orchestration. Simon Trezise has provided this insightful description of how these tone-cells integrated the previously disparate functions of melodic and harmonic development into a single entity:

Example 33 [measures 32-34] demonstrates how the intervallic material of much of the introduction and first principal section of [the first movement] 'De l'aube a midi sur la mer' [From dawn until noon on the sea] is based on the intervals of a pair of major seconds separated by a minor third, or three-note subsets of that (e.g. E flat-D flat-B flat); this operates as an unordered set in that its ordering may vary and the pairs of seconds rotate to produce a perfect fourth's separation between them. This makes it cellular along the lines described by Schönberg in his brief analytical sketches of works such as Beethoven's *String*

Quartet in F minor, Opus 95 and Brahms' *Fourth Symphony*. The cell inhabits melodic and harmonic domains at the opening, the overlapping entries of the basses and harps producing the sonority B-F sharp-G sharp, to which C sharp is finally added in bar 3. It rubs off on the first cyclic motif, but it is not until the beginning of the first principal section that the rich use to which such an idea can be put is revealed. In Example 33 the four-note figure invades accompaniment and harmony. It is in every sense pervasive, contributing to the blurred tonal definition of the section by burying the D flat major triad. The cell's influence extends to the second principal section as well, though its three-note subset is most in evidence, as the opening B flat-C-G figure makes plain.⁷⁷⁰

These tone-cells functioned as ultra-condensed, miniaturized musical events which anticipated the themed title tracks, auditory cues and on-air advertisements characteristic of radio broadcasting and much later of the cinema soundtrack. But whereas the auditory content of any given radio broadcast or cinema newsreel was contingent and aleatory, Debussy organized these musical events into spatialized soundscapes of orchestration. These soundscapes were not predicated on a single national imperial audience, but on the internationalized conjunction of multiple national imperial audiences. They signified the transformation of British musical time into post-hegemonic space.

This internationalization was apparent everywhere from the score's copious utilization of the English horn (Debussy was a lifelong Anglophile), to the spatial allegory relayed by its three movements. These movements did not depict three different oceanic scenes, so much as three different modes of maritime transport. The first movement ("From Dawn to Noon on the Sea") evoked the churning passage of an estuary steamboat,⁷⁷¹ the second movement ("Play of the waves") recalled the capricious squalls of a wind-powered sailing vessel, while the third movement ("Dialogue of the Wind and Sea") portrayed the herculean engines and bacchanalian superabundance of the luxury transatlantic ocean liner.

One of the most remarkable achievements of this third movement was the sweeping finale of measures 258 until 292, which created the template of a century of action-adventure and suspense thriller film soundtracks to come. The first half of this passage crested in measure 276, only to temporarily downshift and then accelerate towards the true ending of measures 290-291. Most striking of all was the abrupt conclusion of the movement on measure 292, which froze time much like the electronic sound recording technologies of the early 1920s.

Debussy's achievement was paralleled by the work of the other leading core composer of 1904-1914, namely Charles Ives. Ives' first classic work, *Central Park in the Dark*, delivered a night-time tour of New York City's Manhattan neighborhoods animated by the rag-time piano rhythms blaring from bars, the clang of trolleys, and the rumble of horse-drawn carriages (New York City would motorize only in 1911). The piece culminated in the spatialized cacophony depicted between measures 64 and 118, one of the first musical anticipations of the automotive

⁷⁷⁰ Simon Trezise. *Debussy: La Mer [The Sea]*. Cambridge: Cambridge University Press, 1994 (84).

⁷⁷¹ Debussy's original title for the first movement was "Beautiful Sea of the Sanguinary Islands", a reference to four islands located near the Gulf of Ajaccio on the French island of Corsica. Peter Cogman (2005). "Claude Debussy, Pierre Louÿs and the Îles Sanguinaires [Sanguinary Islands]." *French Studies Bulletin* 26:97 (7-9).

traffic jam.⁷⁷²

Ives' next classic, *The Unanswered Question*, began with a horn motif devoid of explicit tonal implications, set against an unremarkable mass of tonal strings.⁷⁷³ This horn motif was then repeated six more times, steadily gaining in strength and audacity. While its very first version was calm and deliberate, its second and third iterations provoked increasingly agitated replies. The fourth iteration elicited a storm of revulsion from the strings, while the fifth evoked a burst of musical hysteria.

The sixth iteration did not elicit rejection but a complex counterpoint of flutes, as if the question had triggered an avalanche of secondary questions. Most striking of all, the seventh and final repetition was a simple reprise of the first motif, and elicited no response at all. After cycling through the full range of possible responses, from initial indifference to shock, disbelief, outrage, hysteria and then finally a barrage of counter-questions, the question had finally become its own answer.

Ives' first large-scale masterpiece was *A Symphony: New England Holidays*. While the fourth movement of this work was completed in 1904 and remained within the bounds of Brucknerian tonality, the first, second and third movements were composed between 1908 and 1913 and achieved a true breakthrough in musical form.

Measures 54 to 59 of the second movement of *New England Holidays* ("Decoration Day") employed the same strategy of orchestration as Debussy's *The Sea*. The third movement, "Fourth of July," went even further by reappropriating an astonishing variety of popular hymns, folk tunes, African American songs and military marches into one of the earliest soundscapes of motorization.

This motorization was most apparent in the conclusion of the third movement, which borrowed Debussy's strategy of depicting a false ending followed by an even more impressive true ending. But whereas "Dialogue of the Wind and Sea" moved at the pace of an ocean liner, "Fourth of July" moved at the pace of an automobile race. Ives' version of the false ending

⁷⁷² Writing in 1914, Ives described his own composition as follows: "This piece purports to be a picture-in-sounds of the sounds of nature and of happenings that men would hear some thirty or so years ago (before the combustion engine and radio monopolized the earth and air), when sitting on a bench in Central Park on a hot summer night. The strings represent the night sounds and silent darkness – interrupted by sounds [the rest of the orchestra] from the Casino over the pond – of street singers coming up from the Circle singing, in spots, the tunes of those days – of some 'night owls' from Healy's whistling the latest or the Freshman March – the 'occasional elevated,' a street parade or a 'breakdown' in the distance – of newsboys crying 'uxtries' [sic: 'extra'] – of pianolas having a ragtime war in the apartment house 'over the garden wall,' a street car and a street band join in the chorus – a fire engine, a cab horse runs away, lands 'over the fence and out,' the wayfarers shout – again the darkness is heard – an echo over the pond – and we walk home." Leon Botstein. "Innovation and Nostalgia: Ives, Mahler, and the Origins of Twentieth-Century Modernism." In: *Charles Ives and His World*. Edited by J. Peter Burkholder. Princeton: Princeton University Press, 1996 (43-44).

⁷⁷³ In his personal correspondence, Ives described attending a performance of Wagner's *Twilight of the Gods* on March 31, 1894 in New York City, when he was nineteen years old. Stephen Budiansky. *Mad Music: Charles Ives, The Nostalgic Rebel*. Lebanon, New Hampshire: University Press of New England, 2014 (59-60).

occurred on measure 115, but after the merest pause (a tap on the musical brakes, as it were) the piece concluded in the blazing finale of measures 116-121. Ives thereby bridged the divide between the live-action and tonal musical continuum of Global Steam and the technologically mediated musical universe of the third supercycle, wherein jazz, blues, twelve-tone music and other popular music genres flourished on the international marketplace of recorded music.

We are now in a position to analyze Mahler's three final classics. These works succeeded not by duplicating the core strategies of Debussy's orchestration or Ives' motorization, but by semi-peripheral strategy of cinematizing musical time. Whereas Bruckner's ghost symphonies were constructed out of musical blocks and Brahms' ghost sonatas were built on motivic passages, Mahler's final works were a series of rifts in the heavily chromatic tonality of the post-1894 period.⁷⁷⁴

One of the most striking examples of the Mahlerian rift was the Alma theme introduced in measure 76 of the first movement of Mahler's *Symphony 6*. The first half of this theme consisted of four rising whole notes, symbolizing the banal tonal resolution of the music-hall song. However, the second half fell down to the root chord in a lower register, like the fading memory of a ballroom dance.

The unexpected juxtaposition of these two musical clichés, the first drawn from a plebian and the second from an elite musical vocabulary, was then repeated a number of times across a wide variety of acoustic registers and harmonic contexts. This repetition no longer signified the labor of musical time, but rather the belaboring of musical space: sorry, Mario, but the princess is in another castle.⁷⁷⁵

This logic of spatialization was also apparent in the cowbells Mahler employed as a coloristic element in measures 198-216 and 234-238 of the first movement. Whereas Bruckner's vignettes of peasant dances, church bells, dynastic celebrations and confessional hymns tugged at the heart-strings of its Austrian audience with the urgency of biographical memory, Mahler's cowbells conjured up the commodified spectacle of the tourist trek.

The true musical breakthrough of *Symphony 6* occurred in the fourth movement, via Mahler's reinvention of the musical reprise. This latter no longer followed temporal coordinates,

⁷⁷⁴ Adorno was one of the first to describe the mechanics of this rift: "His symphonies and marches are by no means those of disciplined denizens [Wesens: everyday existence or being] who triumphantly subjugate everything particular and individual, but rather gathers them into a parade of that which is emancipated, which in the midst of unfreedom can only resonate as a ghost-parade. All of Mahler's music is, as folk etymology calls one of his song-titles, the one who is waking up, a reveille [Rewelge]." ["Seine Symphonien und Märsche sind keine des disziplinierenden Wesens, das triumphal alles Einzelne und alle Einzelnen sich unterjocht, sondern sammeln sie ein in einem Zug der Befreiten, der inmitten von Unfreiheit anders nicht zu tönen vermag denn als Geisterzug. Alle Musik Mahlers ist, wie die Volksetymologie eines seiner Liedertitel das Erweckende nennt, eine Rewelge."] Theodor W. Adorno. "Mahler: A Physiognomy." In: *Collected Works 13: The Musical Monographs*. Frankfurt: Frankfurt Verlag, 1973. This is my translation.

⁷⁷⁵ This is a late 20th century and early 21st century meme invented by Shigeru Miyamoto's platformer classic *Super Mario Brothers* (1985), whose basic plotline is that plucky plumber Mario must rescue the Princess from Bowser. At the end of every boss battle except the last, the player is greeted by a screen which states, "Thank you, Mario! But our Princess is in another castle."

but rather spatial ones: the metronome was replaced with the mileage marker. Adorno illuminated this transformation with the poetic metaphor of the ghost train:

Mahler preferred to disregard topographic clarity and to plane originally sharp contours, rather than contravene the stringency of form-sensitivity. He ingeniously removes the reprise which he needs from the surface level [Oberfläche: surface] of perception. This endows it in the finale of *Symphony 6* with the aspect of a shadowy ghost train similar to the *Rewelge* [orchestral song written by Mahler in 1899, whose title is the Austrian German version of the French word *reveille*, “wake-up call”]. The reprise becomes a revenant [revenant: French for “returned ghost”]; the character legitimates the remainder as symmetry. It is not just here in Mahler that passages of the most emphatic corporeal presence of music switch places with disembodied [geisterhaften: ghostly, spectral] ones. Many movements develop themselves in order to win or lose their own reality; music is to be wholly present solely as the result of its completion.⁷⁷⁶

What was true for the fourth movement as a whole was also true of its constituent elements. For example, the first movement utilized cowbells to convey the unearthly beauty of the Austrian countryside, while the third movement employed the same effect to create the comforting backdrop of the pastorate in measures 86-94 and 156-159. By contrast, these same cowbells generated a profound sense of musical estrangement during measures 239-249 of the fourth movement. By adding the acoustic elements of the harp and celesta, Mahler transformed the moonlit walk in the mountains into the journey in outer space.

This estrangement culminated in the two legendary hammer-blows of the fourth movement, the first of which was delivered in measure 336. Significantly, Mahler’s score likened this latter to an ax chopping organic material, rather than the metallic clang of industrial machinery.⁷⁷⁷ This hammer-blow proclaimed the dissolution of the boundary between the individual or psychological shock and the collective experience of contingency or randomized necessity. It was followed by a brass-heavy section of extraordinarily rich counterpoint, which stumbled about like one of Bruckner’s musical blocks knocked from its tonal underpinnings, only to find its feet again by measure 368.

⁷⁷⁶ “Lieber mißachtet Mahler die topographische Übersichtlichkeit und verschleift ursprünglich scharfe Konturen, als daß er der Stringenz des inneren Formgefühls zuwiderhandelte. Listig zieht er die Reprise, deren er bedarf, von der Oberfläche der Wahrnehmung ab. Das verleiht ihr im Finale der Sechsten den Ausdruck des schemenhaften Geisterzugs wie in der *Rewelge*. Die Reprise wird zum revenant; der Charakter legitimiert den Rest an Symmetrie. Nicht hier allein wechseln bei Mahler Partien der nachdrücklichsten, leibhaften Gegenwart der Musik mit derart geisterhaften. Manche Sätze entwickeln sich, um ihre eigene Wirklichkeit zu erringen oder zu verlieren; Musik soll erst als Resultat ihres Vollzuges ganz präsent sein.” Theodor Adorno, *Mahler: A Musical Physiognomy*. Chapter 5: Form-variant. This is my translation.

⁷⁷⁷ The hammer was described in the original score as follows: “Short, powerful, but dull-sounding blow of a non-metallic character (like an ax blow).” [“Kurzer, mächtig, aber dumpf hallender Schlag von nicht metallischer Charakter (wie ein Axthieb).”] Gustav Mahler. *Symphony 6*. In: *Collected Works, Volume 6*. Leipzig: C.F. Kahnt, 1998 (194). This is my translation.

This restabilization soon acceded to a renewed sense of crisis during measure 385, as a series of increasingly frantic marches culminated in the percussive outbreak of measure 394 – the symbolic after-shock of the first hammer-blow, replicated in the musical material like the retrospective account of a traumatic experience. By measure 397, the march rhythm no longer evoked the folkloric celebration or the dynastic commemoration, but hurtled instead towards some nameless, inexorable doom. This march of doom was subsequently taken up by the violins, as if news of the trauma were spreading among the populace at large, and continued as an ominous rhythmic undercurrent beneath the superficial domestic tranquility depicted between measures 415-429.

Between measures 430-458, the march of doom came to the forefront once more, only to seemingly recede between measures 459-478, before exploding into the second hammer-blow of measure 479. Whereas the first hammer-blow was followed by disconnected brass-centered and string-centered sequences, the second reunited the brass and strings into a spatialized realm of musical plebianization.

The clearest example of this plebianization was the wide variety of fanfares and popular march forms utilized by measures 480-519, keynoted by the score's terse injunction above measure 516, "Forwards!" ["Vorwärts!"].⁷⁷⁸ Measures 520-535 extended this strategy still further by mobilizing drum flourishes, massed violins, and harp arpeggios as spatialized elements of musical color.

One of the most subtle expressions of this musical plebianization occurred during the orchestration of measures 550-574. This sequence began by utilizing deep bells during measures 550-555, and switched to cowbells during measures 555-560. Mahler ingeniously bridged the acoustic divide between these two sound effects by adding a celesta during measures 555-558, this latter functioning like the dissolve between two shots in cinema. The celesta performed a similar musical dissolve during measures 566-571, by serving as advance notice of the cowbells deployed in measures 568-574.

The terminus of this plebianization was the astonishing finale of *Symphony 6*. In measures 765-772, Mahler summoned up the whole note scale played across three different sets of instruments at the conclusion of *Parsifal*. But where Wagner's opera rescued late 19th century tonality from mass-cultural banality by means of full-blown chromaticism, Mahler's finale plunged headlong into the abyss of post-chromatic music.

This latter was signaled not by a musical presence, but by the conspicuous absence of the long-awaited third and presumably final hammer-blow on measure 773. Instead, measures 773-781 looped back to reiterate the first nine measures of the fourth movement like a musical Mobius strip: temporal duration had become spatial delineation. This spatialization was sealed by the celesta of measure 782, the final fanfare of measure 820, and by muted strings and solitary horn of measure 822 – the musical equivalents of the close-up shot of the pennant of a sinking ship seconds before disappearing beneath the waves, the medium shot of a henceforth empty sea, and the long-distance shot of the horizon where the ocean meets the sky, respectively.

However, it was not until a series of unforeseeable personal setbacks in the summer of 1907 and an equally unpredictable series of personal successes in 1908 that Mahler returned to

⁷⁷⁸ Gustav Mahler, *Collected Works, Volume 6* (221). This is my translation.

the post-chromatic abyss opened up by the fourth movement of *Symphony 6*.⁷⁷⁹ The result was *The Song of the Earth*, a cycle of six songs featuring alternating tenor and alto voices backed by a full symphony orchestra.

The lyrics of these songs were German translations of classic Chinese poems from the Tang dynastic era (618-907 CE). To be sure, these translations were uneven in quality and disclosed little of the lyricism or the historical content of the original texts. However, just as the mass-cultural phenomenon of japonisme inspired many of the visual artists of the core polities during Global Steam, the comparable phenomenon of chinoiserie spurred Mahler to rethink the legacy of Wagnerian chromaticism from a new perspective.

Simply, *The Song of the Earth* sublated Brahms' motivic chromaticism, Bruckner's chromatic augmentation, and Tchaikovsky's rhythmic chromaticism into a strategy of chromatic conjunction. This latter corresponded to what Julian Johnson called Mahler's verticality, namely passages of extreme dissonance which marked the moment British hegemonic time imploded into post-hegemonic space:

In both the Ninth and Tenth symphonies, the first movement alternates between the affirmation of a nostalgically lyrical voice and a denial of its own subjective expression. Both establish a cyclical form in which every return of lyrical assertion is paired with its own negative demise. But each successive attempt to assert a lyrical voice becomes more strained, so that a potentially endless cycle is broken by climax construed as catastrophe. The negative climax of the both movements arises when the linearity of the lyrical voice is blocked by vertical dissonance; in the Tenth, this is the famous nine-note chord, composed of stacked thirds, which acts as a musical brick wall to the expressive subject, heard in the first movement (mm. 203–208) and again in the Finale (mm. 275–83)). The entire symphony is shaped around this central blockage, or repression, of its lyrical voice. All the chromatic frustrations and avoidance of linear resolution are here concentrated in a single verticality.⁷⁸⁰

The first working model of this verticality was deployed in measures 328-365 of *The Song of the Earth*'s first song, "The Drinking Song of the Earth's Misery". The libretto anticipated Kafka's satirical short story *Report to An Academy* (1917), wherein an imaginary simian learned human speech:

Look over there! In the moonlit graves
Squats a spooky wild shape –
It's an ape! Hear how its cry

⁷⁷⁹ In the summer of 1907, Mahler was dismissed as conductor of the Vienna Court Opera due to the rising tide of anti-Semitism in Vienna, his eldest daughter passed away from an illness, and he was diagnosed with the fatal heart condition which would eventually result in his demise in 1911.

⁷⁸⁰ Julian Johnson. *Mahler's Voices: Expression and Irony in the Songs and Symphonies*. Oxford: Oxford University Press, 2009 (87).

Yowls into the sweet scent of life!⁷⁸¹

The unresolved dissonances of this scene were followed by a toast which employed the provocatively Social Democratic term “Genossen” (comrade) rather than the standard “Herren” (gentlemen) (“Now take the wine! Now it’s time, comrades!”).⁷⁸²

While the second, third, fourth and fifth songs had flashes of brilliance (e.g. the fourth song, “On Beauty”, quoted the penultimate march rhythm of Tchaikovsky’s *1812 Overture* during measures 49-51), the next instance of this verticality came in the sixth song, “The Farewell.” This was the final song of the cycle and constituted 572 measures, approximately half of the entire work.

The opening of the song began with a bare minimum of musical means, highlighting the lyricism of the alto voice against a backdrop of the skeletal remains of Wagnerian chromaticism. This contrast was accentuated by the bell-like tolling of the harp in the lowest possible register of the bass line, a sound effect closer to the motorized movement through space than to the metronomic passage of time. Similarly, the brass section of the orchestra which came to life during measures 87-92 culminated in the unresolved dissonances of measures 93-96, contrasting extreme acoustic beauty with extreme ugliness.

The final transition to musical spatialization did not occur until measures 300-322, wherein Mahler employed some of his finest orchestration. The tolling of the harp in the bass register was now accompanied by bite-sized melodic fragments which fell downwards at the same time that the brass section pushed intermittently upwards. This was followed by the mournful instrumental interlude during measures 323-360 which featured a melodic line which wandered aimlessly across multiple keys, like a waltz in permanent musical exile from itself. Even the putative return to a root chord in measure 361 ended up unleashing another set of spatialized dissonances in measures 362-374, or what amounted to the expanded version *Symphony 6*’s march of doom.

Measure 398 set the stage for the conclusion of the song with the melodramatic farewell to the world of Wagnerian chromaticism (“Ah, my friend / I was not granted good fortune in this world!”)⁷⁸³ and an equally melodramatic greeting to a new world of fully-spatialized musical production (“Where am I going? I’m going to wander in the mountains. / I seek peace for my lonely heart”).⁷⁸⁴

Far from wandering aimlessly in the Alps, Mahler exhibited single-minded purpose by

⁷⁸¹ “Seht dort hinab! Im Mondschein auf den Gräbern / Hockt eine wild-gespenstische Gestalt – / Ein Aff’ ist’s! Hört ihr, wie sein Heulen / Hinausgellt in den süßen Duft des Lebens!”. Gustav Mahler, *The Song of the Earth*. 1909. ““The Drinking Song of the Earth’s Misery”, measures 328-365. This is my translation.

⁷⁸² “Jetzt nehmt den Wein! Jetzt ist es Zeit, Genossen!”. Gustav Mahler, *The Song of the Earth*. “The Drinking Song of the Earth’s Misery”, measures 367-374. This is my translation.

⁷⁸³ “Du, mein Freund, / Mir war auf dieser Welt das Glück nicht hold!” Gustav Mahler, *The Song of the Earth*. “The Drinking Song of the Earth’s Misery”, measures 398-405. This is my translation.

⁷⁸⁴ “Wohin ich geh’? Ich geh’, ich wand’re in die Berge. / Ich suche Ruhe für mein einsam Herz.” Gustav Mahler, *The Song of the Earth*. “The Drinking Song of the Earth’s Misery”, measures 410-419. This is my translation.

resuscitating his career in one of the leading cultural centers of the core polities, namely New York City. This latter was more than just the domicile of Tin Pan Alley, the main residence of Scott Joplin after 1907, and the main place of work of Charles Ives. It was also the city with the most developed infrastructure of philharmonics, concert halls, music schools and opera houses in the United States.

In January of 1908, Mahler made his US musical debut by conducting a performance of *Tristan and Isolde* at the New York City Metropolitan Opera. The opera and all of Mahler's subsequent performances were a sensational success, catapulting Mahler to the status of an international musical superstar. Fresh from this triumph, Mahler returned to the Austrian empire in the summer of 1908 to compose *The Song of the Earth*.

Perhaps the clearest example of New York's catalytic influence on Mahler was the conclusion of "The Farewell" in measures 477-572, wherein an endless wave of glittering harp arpeggios and massed horns washed over the score in the same way the endless commercial displays of Manhattan's Fifth Avenue dazzled passersby.

During measures 486-566 of this conclusion, the song's libretto reiterated the word "ewig" ("forever"), a repetition which evoked the cinematic shot of a distant horizon ("...all over-everywhere and forever blue the horizon is lit! / Forever... forever... the horizon is lit blue / Forever... forever... forever... forever... forever... forever... forever... forever").⁷⁸⁵ Mahler's most ingenious innovation was to deploy the acoustic pyrotechnics of the celesta at various points in the finale from measure 489 until measure 570 – the cosmopolitan update of the henceforth provincial cowbell.⁷⁸⁶

This pattern of commercial success in the culture-industries of the core, followed by aesthetic innovations rooted in the reconvergence of the semi-periphery with the core, would be repeated the following year. Mahler undertook a demanding schedule of performances in New York during the autumn of 1908 and the first few months of 1909, and returned to the Austrian empire in the summer of 1909 to compose *Symphony 9*.

This latter marked the prodigious expansion of the musical rifts Mahler created in *Symphony 6* and *The Song of the Earth* into an explicit strategy of post-chromatic musical spatialization.⁷⁸⁷ Measures 80-107 showcased this collapse in the form of compact, repetitive

⁷⁸⁵ "...allüberall und ewig blauen licht die Fernen! Ewig... ewig... blauen licht die Fernen, ewig... ewig... ewig... ewig... ewig... ewig... ewig... ewig... ewig... ewig." Gustav Mahler, *The Song of the Earth*. "The Farewell", measures 477-566. This is my translation.

⁷⁸⁶ "Yet the heavenly sounds of the celesta might also be heard as a substitute for the more terrestrial sounds of the cowbells. In many respects, the music here does not evoke the hereafter but rather the everyday. In what follows, the seven-fold repetition of the German word 'ewig' [in English: eternal] gives rise to an increasingly static texture that resists conventional resolution. While the first two phrases resolve downward from D to C, the final three remain suspended on the supertonic. This sets up the arrival of the work's much-discussed final sonority that features an 'added' submediant in the flutes and oboes. Whereas many have questioned the extent to which this unusual sonority offers any clear sense of closure or resolution, another way of hearing this moment is as a threshold." Thomas Peattie. *Gustav Mahler's Symphonic Landscapes*. Cambridge: Cambridge University Press, 2015 (187).

⁷⁸⁷ "The slippage [from D major] is first into B flat (the key of the flatted sixth degree), then ever so gently into G flat (the flatted sixth of the flatted sixth). This style of movement – down by a major third –

musical phrases which were the abstracted fragments of melodies, and plebian marches which no longer reaffirmed dynastic or semi-feudal consonances. These melodic fragments and marches acceded to the ominous fanfares and drums of measures 108-129, and thence to the even more compressed musical phrases and harp ostinato of measures 130-147 – the musical analogue of viewing a city through the window of a moving trolley or horse-drawn carriage.

Between measures 148-200, a series of melodic fragments were juxtaposed against surging dissonances, triggering the wholesale breakdown of Wagnerian chromaticism during measures 201-204. This latter sequence was the first instance of Peattie's musical verticality or fully cinematized temporality, and the approximately five minutes required to play measures 205-326 could be considered Mahler's first working prototype of a film score (individual film reels prior to 1913 ran for 15 minutes or less). This prototype culminated in the funeral march invoked by measure 327,⁷⁸⁸ accompanied by the sound effect of deep bells during measures 337-346, which eventually culminated in measures 363-375 – the second instance of Peattie's verticality.

This latter sequence consisted of harp glissandos retrofitted with massed horns, which gradually diminished in volume. This was the musical equivalent of the cinematic cut between a ground-level shot of rush hour traffic in New York and a medium-distance shot of a specific Manhattan office building. During measures 376-390, the glissandos and horns were replaced by a series of ethereal bird-calls utilizing the piccolo, flute and oboe, suggesting one final cut to a long-distance shot of the New York skyline viewed from the rooftop of an office building.

While the remainder of the first movement returned to the fold of Wagnerian chromaticism, the second movement took the next logical step of *Symphony 9*'s allegory of musical Americanization, by exhibiting the Austrian empire's plebian folk dances and cosmopolitan waltzes before US audiences. Both dances began as reasonably accurate facsimiles of their respective genres, but quickly dissociated from their tonal roots and acquired the relentless energy and mechanical rhythms of industrial production in a manner strikingly similar to how Joplin and Ives recuperated the melodies of late 19th century American popular music and the rhythms of post-Civil War US military marching bands as templates of musical industrial modernism.⁷⁸⁹

will be the primary symbol of alienation, of loss of center, in most of the piece. Soon the music will pull out of this problem zone by another willful, slightly desperate gesture, reasserting rather than modulating back to D (cf. mm. 63-64, pp. 10-11 of the score – more a sudden leap than a modulation). The pattern of the piece has been set: the quiet subversion of the diatonic purity of D major by chromatic notes outside the scale – especially by introducing notes from keys a major third below, which rapidly takes one into the flat keys, traditionally regarded as 'dark.'

Each of the ensuing slippages will cause a crisis, a confrontation, and, most characteristically, a collapse – a way of ending a section that, as Adorno has reminded us, is typically Mahlerian." Anthony Newcomb. "Chapter 7. Narrative archetypes and Mahler's *Ninth Symphony*." In: *Music and Text: Critical Inquiries*. Edited by Steven Paul Scher. Cambridge: Cambridge University Press, 1992 (122).

⁷⁸⁸ "Like a solemn funeral process" [Wie ein schwerer Kondukt]. Gustav Mahler, *Symphony 9*. 1909. Measure 327.

⁷⁸⁹ "Later in the movement, the opening rustic Ländler [Austrian rural dance] tries to reassert itself, but it, too, cannot put itself together and is soon infected by phrases of the waltz (mm. 368ff., pp. 87-89). The

Anthony Newcomb has argued that the third movement was the narrative hinge of *Symphony 9*, a vast engine of counterpoint which sublated the melodic fragments and plebian marches of the first movement as well as the rural dance and waltz forms of the second into the ghost rondo – the distant but recognizable successor of Brahms’ ghost sonata and Bruckner’s ghost symphony.⁷⁹⁰ Yet what differentiated this ghost rondo from its precursors was Mahler’s decisive abrogation of Wagnerian chromaticism.

This latter had temporarily reconciled the antagonistic temporalities of feudal agrarianism and commercial industrialism by recourse to Bayreuth’s national imperial commemoration. By contrast, Mahler’s ghost rondo did not commemorate a dynastic imperial time, but embodied a space which had partially converged with (but did not fully overlap) the culture-industry of the core polities. This space was that of the numerically small but culturally influential subset of semi-peripheral artists who became celebrities among the national imperial audiences of the core.

Put bluntly, where Debussy’s “Dialogue of the Wind and the Sea” and Ives’ “Fourth of July” channeled the core innovations of the transatlantic ocean liner and the motor-car, respectively, the third movement of Mahler’s *Symphony 9* captured the semi-peripheral innovation of the zeppelin (hydrogen dirigible).⁷⁹¹ One of the most striking expressions of this

Ländler appears in faded timbres of solo violin instead of its original ‘bold’ orchestration (mm. 389ff., p. 88), and is rapidly subverted by the waltz, which now takes on some shriekingly banal merry-go-round, fairground music.” Anthony Newcomb, “Chapter 7. Narrative archetypes and Mahler’s *Ninth Symphony*” (126). Newcomb’s footnote located at the end of this quotation furnished these concrete examples: “See mm. 444ff., p. 92, for high woodwinds, including piccolo and E flat clarinet. The material is developed from an accompanimental voice at a structurally analogous earlier spot – trumpet, mm. 187-90.”

⁷⁹⁰ “The musical paradigm (Rondo) entails a return of the principal musical element, a return of the refrain after this ‘episode.’ And in fact one gets this return, in what is musically one of the most difficult and wondrous passages of the symphony. For a narrative analysis, the essential matter is how this return happens. The revelation of the ‘episode’ (according to the formal scheme) can come as a thunderstroke, by interruption. But how does one assimilate it, recover from it, move away from it? Here, it is gradually subverted in a violent (though texturally spare), Jekyll-and-Hyde-like, almost cinematic intercutting between the two guises of the same material – between the two personalities, or the two possibilities revealed in the same personality (mm. 440-521, pp. 140-46).

In the Rondo, the revelation finally yields to a restatement of the main thematic material of the movement, picking up the fast, increasingly headlong elements that had run through the second dance of movement 2 and all of movement 3 up to the interruption. But whereas movement 2 had ended in exhaustion after repeated confrontations, movement 3 now rushes unrestrained to the ultimate tempo extreme and ends in explosion – what we might now call burn-out.” Anthony Newcomb, “Chapter 7. Narrative archetypes and Mahler’s *Ninth Symphony*” (128-129).

⁷⁹¹ The dirigible had become a technological sensation in Germany in 1908: “Patented in 1895, the first model of [Count Ferdinand von] Zeppelin’s conception flew three times in summer 1900 before being taken apart. The press covered it, and people took an interest in the attempt, but only as a form of entertainment in the hot summer months. It would take Zeppelin another eight years before achieving consecration with his fourth machine, which flew a long-distance record in August 1908 before crashing. The accident, which caused no injuries, was perceived as an injustice by the German public, and millions of marks poured in within days to help the Count rebuild his machine. The event itself symbolizes many

musical zeppelinism was the sequence from measures 444-457 which set the stage for the third movement's finale. Mahler refunctioned the clarinets from coloristic elements of the second movement into the jeering catcalls of measures 444-445 and 454-455. These clarinets elicited the scandalized response of the flutes in the highest registers (measures 446-447 as well as 456-457), followed by a harp arpeggio (measures 447-448 as well as 457-458, and once more in measures 479-480) and an increasingly harried brass section.

There was no longer any chromatic or temporal framework to connect these sound effects. They coalesced and flew apart like the visual abstractions of the Cubist painters. The bravura finale of the third movement was the counterpoint of airships, broadcast from an orchestra 200 meters above ground (the standard cruising altitude of the hydrogen-era zeppelins). This literal rootlessness had its figurative counterpart in *Symphony 9*'s fourth movement, a somber adagio which traced a vast arc from the earthbound sureties of D major to the uncharted vistas of D minor. In Newcomb's words:

This particular four-movement cycle had seemed to predict that outcome insistently, with the repeated returns to the key of D major as a source of solace and stability in the first movement and with the reiteration of that meaning in the 'revelation' episode of the third movement, which was also in D major. Although the fourth movement begins in D flat, repeatedly and at crucial moments it looks longingly toward D major (for example in three of the five phrases of its main theme, and in the ecstatic cadence to this theme and the transition to the B material that follows it – mm. 9, 19, 23-24, 27, pp. 166-167). Particularly striking instances of the yearning toward D (in addition to the already mentioned transformation of the B material, formerly in D flat [C sharp] minor, in D major and A major in mm. 88ff., p. 173) are the two climactic moments in the second and third statements of the main thematic material, when the D-F sharp-A-B pitches fundamental to the first movement's diatonic-pentatonic D major hang for long periods suspended in acute tension high in the texture (mm. 62-63, p. 170 and mm. 122-125, p. 177). But these pitches always sink back into the key of D flat. The final cadence and epilogue of the movement definitively incorporate A and D as the flatted second and sixth degrees of the D flat scale, and the movement fades out in D flat.⁷⁹²

Mahler's three final classics had one other significant achievement to their credit which is worth mentioning here. This was their capacity to narrate the key geopolitical features of Britain's hegemonic twilight – the post-1878 explosion of maritime expansionism across the world, the transformation of the core polity of the United States into an industrial behemoth, and the lockdown of the oligarchic republics and dynastic empires of the semi-periphery – by composing the first classic soundtracks of the West Asian doom loop. Mahler's *Symphony 6* depicted the dynastic colonial adventurisms and plebian national imperialisms exemplified by

facets of the public fascination with aviation, in Germany and throughout Europe. As they became fascinated with dirigibles, Europeans (not just Germans) projected a future where airships would act as trains or buses do, while airplanes would be like private cars." Guillaume de Syon. *Science and Technology in Modern European Life*. London: Greenwood Press, 2008 (81).

⁷⁹² Anthony Newcomb, "Narrative archetypes and Mahler's *Ninth Symphony*" (131).

the Russo-Japanese war, *The Song of the Earth* utilized the form of imported chinoiserie to evoke the early 20th century international anti-colonial movements of eastern Europe and west Asia, while *Symphony 9* depicted the industrial energies of Americanization as well as the slow-motion explosion of the first and second Balkan wars.

With characteristic perspicacity, Adorno identified the taproot of this extraordinary geopolitical productivity as the biographical component of Mahler's songs. These latter channeled Mahler's experience of being a German-speaking Jewish resident of Czechia who benefited greatly from the cultural opportunities granted to talented commoners by the Hapsburg dynasty, but who also felt the sting of the Austrian empire's increasingly unhinged anti-Semitism:

The long gaze fastens on the condemned. Since the ungainly youthful composition with piano accompaniment of the folk song *At Strasbourg on the Battlement*, Mahler's music has sympathized with the asocial, who stretch their hands in vain towards the collective. 'I'll have to beg for pardon, / Yet I shall get my due reward, / That much I know.' Mahler's music is subjective not in its expression, but by being put into the mouth of the deserter. All are last words. The one to be executed belts out what he still has to say, without a single person hearing it. Only so that it is said. Music confesses that the destiny of the world no longer depends on the individuated [Individuum], but it also knows that the individuated [Individuum] has no power of content which is not its own, however split off and powerless this would be. That is why its fractures are the script of truth. Social movement appears in them as negatively as its victims. Even the marches in these symphonies are perceived and reflected on by those carried off. Solely those who fell out of line, the downtrodden, the lost scout buried by the beautiful trumpets [reference to Mahler's 1898 song *Where the Beautiful Trumpets Blow*], the poor drummer boy [reference to Mahler's 1901 song *Little Drummer Boy*], those who are completely unfree embody freedom for Mahler. His symphonies are ballads of the defeated without promises, for *Soon Comes the Night* [reference to the German folk song *Abend ward, bald kommt die Nacht*, 'Evening has fallen, soon comes the night'].⁷⁹³

⁷⁹³ "Ans Verurteilte heftet sich der lange Blick. Seit der unbeholfenen, vom Klavier begleiteten Jugendkomposition des Volkslieds 'Zu Straßburg auf der Schanz' sympathisiert Mahlers Musik mit den Asozialen, die umsonst nach dem Kollektiv die Hände ausstrecken. »Ich soll dich bitten um Pardon, und ich bekomme doch meinen Lohn! Das weiß ich schon.« Subjektiv ist Mahlers Musik nicht als sein Ausdruck, sondern indem er sie dem Deserteur in den Mund legt. Alles sind letzte Worte. Der gehenkt werden soll, schmettert heraus, was er noch zu sagen hätte, ohne daß einer es hört. Nur daß es gesagt wird. Musik gesteht ein, daß das Schicksal der Welt nicht länger vom Individuum abhängt, aber sie weiß auch, daß dies Individuum keines Inhaltes mächtig ist, der nicht sein eigener, wie immer auch abgespaltener und ohnmächtiger wäre. Darum sind seine Brüche die Schrift von Wahrheit. In ihnen erscheint die gesellschaftliche Bewegung negativ wie an ihren Opfern. Noch die Märsche werden in diesen Symphonien von dem vernommen und reflektiert, den sie verschleppen. Die aus der Reihe Gefallenen, Niedergetretenen allein, die verlorene Feldwacht, der bei den schönen Trompeten Begrabene, der arme Tambour'sell, die ganz Unfreien verkörpern für Mahler die Freiheit. Ohne Verheißung sind seine Symphonien Balladen des Unterliegens, denn 'Nacht ist jetzt schon bald'." Theodor Adorno, *Mahler: A Musical Physiognomy*. Chapter 8. This is my translation.

Mahler's final three classics thus expressed the moment that the personal became the geopolitical in music – or put more concretely, the moment that the industrial musical modernisms of the semi-periphery and the core finally reconverged into their unified successor, the international modernisms of 1914-1945.

Nor was it an accident that this reconvergence ran concurrently with the major scientific and conceptual revolutions of the British hegemonic twilight. In the field of sociology, these revolutions included Max Weber's notion of rationalization in *The Protestant Ethic and the Spirit of Capitalism* (1905), the foundation-stone of György Lukács' concept of reification as the structural logic of capitalism as well as the Frankfurt School's notion of the authoritarian personality.

In the realm of psychology and the critique of the mass media, they included Sigmund Freud's theories of sexual drives, psychological attachments and hysterical crises outlined in *The Psychopathology of Everyday Life* (1904), *Three Essays on the Theory of Sexuality* (1905), and *Jokes and Their Relation to the Unconscious* (1905). They also included Freud's invention of the first modern psychobiography, *Leonardo da Vinci, A Memory of His Childhood* (1910), and the first modern theory of anthropology, namely *Totem and Taboo* (1913).

In the field of physics, they included Albert Einstein's theories of Brownian motion, of the photoelectric effect, of the equivalence of mass and energy, and of special relativity, all of which were formulated in 1905. They also include the theory of the atomic nucleus suggested in 1913 by British scientist Ernest Rutherford and Danish scientist Niels Bohr.

What all of these revolutions had in common was a trajectory away from Britain's hegemonic twilight and towards the post-1945 American hegemony. Mahler's soundtracks anticipated the post-1945 cultural hegemony of Hollywood films and American popular music precisely where Weber's concept of rationalization anticipated the sociological reality of US-led industrialization, where Freud's concept of the psyche anticipated the spread of US-centered mass consumerism, and where the Rutherford-Bohr model anticipated the construction of humanity's first atomic bombs by the United States in 1945.

It is to the specific trajectory of the American hegemony – how, when and where it emerged from the planetary wars of 1914-1945 as it did, and how its workers and citizens mobilized for democracy in conjunction with the anti-imperial and anti-colonial struggles of the workers and citizens of the semi-periphery and colonial periphery – that will be the subject of the next volume.