The Victorian World

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CHAPTER THREE

THE SHRINKING VICTORIAN WORLD

Peter J. Hugill

It is now widely accepted in historical sociology that the concept of time–space distanciation is central to understanding ‘how social systems “bind” time and space’ (Giddens 1981: 90; Warf 2008). Victoria’s reign saw major accelerations in communications, both in a purely physical sense of movement of goods and people, and in an electronic sense in the movement of information. These accelerations produced major reconfigurations in the organization of time and space by people and societies, first identified by Hägerstrand (1975). More recently Harvey has analyzed time–space compression as central to the emergence of the modern and postmodern worlds (Harvey 1989).

Although there were pre-modern time–space compressions of great consequence, such as those surrounding the emergence of states and bureaucratic governments in the Middle East and China some 10,000 years BP, the cumulative impact of the Victorian time–space compressions was unprecedented in world history. Since then, air travel, containerization, the elaboration of stock trading via such agencies as NASDAQ, the internet, and the world wide web have made for radical changes, but they are all based on the time–space compressions of the Victorian age. The Victorian time–space compressions facilitated much more rapid movement: of highly trained and valuable business and political leaders; of un- and semi-skilled masses as cheap labour; of raw materials and manufactured goods; and, via vastly improved mail services and the telegraph, of information. These resulted in the rapid development of an elaborate, increasingly global economy. They also facilitated the rise of a greatly elaborated set of bureaucracies in the late 1800s: the private bureaucracies of the new corporations; the nation states of the ‘New Nationalism’, notably the Imperial German State created by Bismarck; and the explosion of imperialism after the Berlin Conference of 1884–85, the ‘New Imperialism’. Many of these innovations originated in Britain, many more came from Europe and America: all diffused worldwide.

When Victoria came to the throne in 1837, people and information moved reliably only along highly defined land routes and sea lanes on foot, by horse, or in sailing ships, and movement was slow. In 1837 a letter from London would have taken nine months to reach San Francisco: by Victoria’s death in 1901 mail
took nine days and telegrams nine minutes. In 1840 the British introduced the ‘penny post’ anywhere in Britain: in 1898 they extended it throughout the British Empire. The first steamship to cross the Atlantic non-stop did so in 1838, and Britain dominated steamship design for the rest of the Victorian period. Following the success of Britain’s Liverpool and Manchester Railway of 1830, railroads exploded, nowhere more so than in America, where in 1837 advanced engineering produced a locomotive design that could cross serious topographic barriers. Telegraph lines followed, ensuring safety on the normally single-tracked American railroads. Chicago grew rapidly as the railroad centre for the entire interior of North America, but the city’s greatest innovation was the remarkable use of the telegraph network to create the world’s first futures market, a financial innovation as great as the burgeoning global stock and insurance market being managed out of London. In the 1860s Britain cemented its hold on the global financial marketplace by the construction of a global network of submarine telegraph cables, completed in 1902 by the first trans-Pacific cable. At the close of the Victorian era, in 1901, the Italian-British engineer, Guglielmo Marconi, opened a new phase in telecommunications by sending the first wireless telegraph signal across the Atlantic.

The cumulative cultural impacts of all this technological change were spectacular: the markets for labour, both skilled and unskilled, capital, raw materials, manufactured goods, and services internationalized; global news networks developed to support powerful news empires and mass-market magazines; diplomats became able to communicate in near ‘real time’ across the globe; the military discovered ‘communications, command, and control’; and writers romanticized the new, globalized, world in the new entertainment media of mass-market newspapers, magazines, and novels. The political ramifications of the ‘New Nationalism’ and the ‘New Imperialism’ of the High Victorian Age were even farther reaching. Although Britain emerged from the Napoleonic Wars as an undisputed global power, after the fall of the first Empire in 1776 the British were more interested in controlling trade than controlling territory. Bismarck’s creation of the world’s first welfare system to help unify Germany in 1871 resulted in a much more powerful state designed to deliver social services, concerns about who should receive such services, and thus in many ways the ‘New Nationalism’. As the world economy started to ‘close’ it became obvious that access to resources would be increasingly constrained by politics and that political control over diverse production regions was necessary. The only way to ensure such control was via imperialism, as became obvious at the Berlin Conference of 1884–85, thus the ‘New Imperialism’.

At the start of Victoria’s reign the world was still highly compartmentalized: even news from neighbouring counties circulated slowly. At the end of it the world was almost entirely interlinked, and a London morning paper would contain futures reports from Chicago, reports of geographic expeditions to the far corners of the earth, and short stories of far away lands. It was the most remarkable time–space compression in human history.

I focus here on several key innovations:

- postal services;
- steam powered transportation;
- telegraphy;
• futures markets and stock markets;
• bureaucratic management;
• the intensification of identities.

POSTAL SERVICES

Although some recent writers have suggested that telegraphy provided a form of Victorian ‘internet’ (Standage 1998), the vast run of common people had little or no access to such expensive means of communication until very near the end of Victoria’s long reign. What they did have was a ‘penny post’. They embraced it with enthusiasm. Literacy levels rose rapidly in the late nineteenth century with compulsory education. Pre-paid, self-adhesive postage stamps and delivery to the recipient’s door made the service user friendly. Previously, recipients of mail had to collect correspondence at a post office and pay the mail charges: ‘the number of chargeable letters in 1839 had been only about 76 million. By 1850 this had increased to almost 350 million and continued to grow dramatically’ (http://postalheritage.wordpress.com/2009/08/21/rowland-hill%E2%80%99s-postal-reforms/ accessed 7 November 2011). Given that salaries were increasing steadily in a period of price stability, this became an incredibly cheap service. Postcards, useful for short messages, were even cheaper, and mail carriers made multiple deliveries each day. The penny post was also the first major expansion of the state into social services.

STEAM POWERED TRANSPORTATION

Steam powered transportation developed in three important phases: on rivers; overland; and by sea. Steam powered river boats emerged almost contemporaneously on both sides of the Atlantic. Henry Bell’s Comet entered service on the Firth of Clyde in 1812; Robert Fulton’s North River connected New York to Albany in 1807. Wherever navigable rivers existed river boats could open up the continental interiors at little greater cost than the capital cost of the boat and the labour to run it, and as Britain’s later Victorian empire expanded they would find ready use. The pioneering boats built by Bell and Fulton could not, however, move upstream on fast flowing rivers. That took the marriage by Henry Shreve of a high-pressure steam engine to a Mississippi River keelboat in 1815. This opened almost the entire interior of North America south of the Great Lakes between the Rockies and the Appalachian Mountains for development, some 370 million acres (Hugill 1993a: 167–69). Such riverboats brought people and manufactured goods inland against the flow of the rivers. But sunken logs, ‘snags’, which riddled many rivers and could rip open the hull of a riverboat moving at speed, slowed their expansion. By 1830 there were only just over 32,000 tonnes working west of the Appalachians. In 1829 Shreve developed the double-hulled snagboat that guided the snag between its hulls and then used a steam engine to chop it into pieces. By 1850 over 300,000 tons were at work (Hugill 1993a: 169). The lessons learned in North America were not lost on the British as they sought to open up the interiors of Asia and Africa. All through Victoria’s reign ever-increasing amounts of agricultural surplus flowed back to coasts to be trans-shipped onto ocean-going ships bound for Britain.
In the Antebellum period in North America the main force for time–space compression was the steamboat. After the Civil War it rapidly became the railroad. From its peak in 1850, the tonnage of riverboats at work dropped below 170,000 by 1860, as competition from railroads increased. The advantage of the steamboat was its low cost, that of the railroad was the possibility of relative geographic ubiquity, albeit at much higher capital cost. That ubiquity first began to emerge in Britain before Victoria came to the throne, but British practice was to build lines to the minimum possible grade and use low-powered locomotives with small fireboxes. This required huge investments in infrastructure – careful ballasting under the track to ensure smooth running and avoid derailments, massive earth embankments, and numerous bridges and tunnels. Such investments were possible only in a state with a high population density and well-developed capital markets. Evocative of late Victorian British locomotive practice were powerful single driver locomotives, the most charismatic of which was Patrick Stirling’s eight footer for the Great Northern Railway, built from 1870 on (Reed 1971). The costly infrastructure investments that produced an easily-graded line were impossible in America and made no economic sense on the imperial frontier, although British engineers initially, and expensively, developed India’s railways on British lines (Headrick 1988: 75).

American locomotives needed to burn substantial amounts of fuel to generate enough power to climb substantial grades, and to be able to run on cheaply laid track. In 1837 the Philadelphia engineer, John Harrison, produced the first American class 4-4-0 locomotive ‘Hercules’ with a large firebox and three-point compensated springing that met these needs. (Hugill 1993a: 176). Between 1837 and around 1900 American class locomotives poured out of American shops to drive a vast expansion of mileage. By 1845 America already had almost twice the railroad mileage as the initial leader and nearest rival Britain. By 1900 America had more than twice the mileage of the next six largest railroading states combined, nearly 14 times that of Britain, and more than ten times that of India (Headrick 1988: 55). Between 1851 and 1852 five lines were completed connecting Eastern to Midwestern American cities, four to Chicago alone. By 1860 New York City to Chicago took about 40 hours, an average speed of around 20 miles per hour. Between 1868 and 1893 six lines crossed the Rockies (Vance 1995: 286, 201). After the Civil War the density of railroads increased spectacularly since they required only capital and relatively favourable topography, not a pre-existing river system. By 1880 few people in America east of the Mississippi were over 15 miles from a railroad (Hugill 1993a: 180). Although railroad technology spread rapidly to all the inhabited continents, railroads caused their most remarkable compression of time and space in North America.

Britain was slow to adopt American practices, but towards the close of the Victorian era British railroads began to copy American-style locomotives for their export markets, of which by far the most important was India, as well as to haul heavier trains at home. Initially British practice had sufficed for India, not only because of colonialism, but also because ‘the landscape of India presented few problems to the railroad contractors’. After 1874 the British Government, which had guaranteed profits to investors in the earlier Indian lines, revolted and demanded more fiscal responsibility. This pushed Indian railroads into adopting
American models, the most significant of which were the Indian L class locomotives of 1880 on. These were derived from engines produced for the steep gradients of the Highland Railway of Scotland (Reed 1972: 110, 98). By the end of Victoria’s reign the main British railroads had switched to American-style locomotives as trains became heavier (Reed 1971: 124).

The third huge impact of steam was on trans-oceanic movements. In 1838 the first steamship built for the purpose, Isambard Kingdom Brunel’s Great Western, crossed the Atlantic. Unlike riverboats, steamships had to carry fresh water with them. The crucial innovation that permitted the Atlantic crossing was the condenser, converting used steam back to fresh water. Such steamships pushed the limits of available technology, were expensive to build and maintain, and charged frighteningly high fares for passengers. But they were much faster than sailing ships and demonstrated safety and regularity well beyond sailing ships. In 1839 Samuel Cunard, one of the Great Western company’s competitors, acquired the first transatlantic mail contract, making his steamships profitable. Most transatlantic mail was financial information, so the safety and regularity particularly stressed by Cunard mattered. But because of the huge expense of the first generation steamships, their impact on the movement of people and goods was muted.

Other innovations followed. Better boilers were a must for the much larger, longer ships allowed by wrought iron. Mild steel construction allowed another 15 per cent reduction in weight and replaced iron in the early 1880s (Hall 1998: 365). Larger, lighter ships with finer lines were far more efficient, but the most crucial part of the innovation chain was in engines. As Hall has shown, a series of forces set off the ‘long chains of innovation’: expansive working in the 1840s and 1850s,
compound engines in the 1860s, steel hulls and triple expansion engines in the 1880s, and turbines at the end of Victoria’s reign, all of which made Glasgow pre-eminent in steamship construction by the late 1800s. Between 1879 and 1889 the tonnage launched on the Clyde increased massively, from 18,000 to 326,136, and the percentage of steel ships from 10.3 to 97.2. By the 1890s British yards were building almost 80 per cent of the entire world tonnage (Hall 1998: 363–72). It was impossible to sail through the Suez Canal, which opened in 1869, since there was no wind. A steamship passing through the Suez Canal could make Shanghai in under 50 days: the record for sailing clippers around Africa was 115 days.

The British dominated both the mass output of cargo steamships and the production of high-speed passenger liners in the late nineteenth century. Only in the latter would they be challenged before the end of Victoria’s long reign. After holding the ‘Blue Riband’ of the fastest Atlantic crossing from 1838, with a very occasional American ship intruding, the British lost it for ten years running to a series of German liners, starting with Kaiser Wilhelm der Grosse in 1898. The real import of the great liners from the 1880s on was not, however, their speed, but the exploding market in labour they served as the Americas industrialized in a period with no restrictions on migration. Ever larger liners moved millions of emigrants in steerage from Europe to the United States and Latin America.

Whereas in the early Victorian era few immigrants returned home, the greatly increased extent of reverse migration in the late Victorian era was a very real indication of how much time–space compression steamships had caused. Death rates for passengers in Atlantic sailing ships had often been appalling, up to 25 per cent in the case of starving Irish fleeing the potato famine in the 1840s (Hugill 1993b). The Irish held wakes for departing relatives since they knew they would
never see them again. As steamships proliferated in the late Victorian period such deaths dropped almost to zero. Both migration and reverse migration skyrocketed.

TELEGRAPHY

The most spectacular Victorian time–space compression was caused by the electric telegraph. There have been few studies of this, although the pioneering synthetic work of Harold Innis, initially ignored, elevated the study of communications in general to a central position in world history (Innis 1950, 1951) and created a model that has been used by others (Hugill 1999a). Electric telegraphs developed to serve railroads from 1839 onwards, the first being installed on the Great Western Railway out of London. Such telegraphs were complex and used a box full of needles, each of which moved briefly to spell out one letter of each message. They had to be carefully monitored. In 1844, based on technology first demonstrated in 1838, the world’s first easily used public telegraph opened between Baltimore, MD, and Washington, DC, using the brilliant innovation by Samuel F. B. Morse and Alfred Vail of a simple binary code of long and short pulses. Initially, these were printed on paper tape, so messages did not have to be read in real time (Burns 2004: 74–84; Hugill 1999a). Morse’s telegraph was adopted at a spectacular rate and impacted on all facets of Victorian life: transportation, commerce, news, politics, and international relations in particular.

In Britain and America the initial adoption of the telegraph was left to private enterprise, which saw its particular values for business communication and for railroad signalling. London rapidly became the hub of a telegraph network that served both needs by connecting British cities with lines laid along the rights of way of the country’s burgeoning rail network. The advantage of telegraphic links to other stock markets was also quickly clear. In 1851 Julius Reuter moved to London from Germany to exploit that year’s pioneering submarine cable across the Channel to serve the stock exchanges of London and Paris. Reuter’s also quickly found that carrying news could make substantial profits. Although New York played some of the role of London in the American case, railroad signalling and news services were initially more important than business. The huge costs and distances involved in American railroading precluded double-tracking lines for safety in the British fashion: head-on collisions were frequent. Telegraphic signalling radically improved safety, and was quickly adopted. The next major users to emerge were news reporting services. In 1846 what would become the Associated Press formed in New York to share the costs of reporting the course of America’s war with Mexico (1846–48), in part via the pony express and in part by telegraph. Its subscribers quickly realized that its long run advantage was that it allowed them to share the high costs of telegraphy to deliver news quickly to their papers (www.ap.org/pages/about/history/history_first.html, accessed 29 November 2010). In America business use focused on Chicago. Telegraph companies quickly discovered the substantial profits from carrying information about crop prices. This drove the emergence of the Chicago futures market for agricultural produce. By 1861 Western Union, formed in 1855, had connected America’s vital Pacific port of San Francisco to New York, and in 1865 it began a valiant attempt to link America to Europe via Alaska and Siberia (Hugill 1999a).
In Europe the telegraph, though adopted enthusiastically, developed differently from Britain and America, as a series of nationalized systems that were not really designed to interconnect and began to do so efficiently only with the formation of the International Telegraph Union in 1865 and the revisions to that organization made in 1875 (Woolf 1916: 205–7). The British telegraphs were nationalized in 1868 because of arguments by the General Post Office that it should enjoy a monopoly on all forms of communication within the British Isles, not just letters (http://distantwriting.co.uk/default.aspx accessed 7 November 2011). The shareholders of the old private companies, bought out at generous rates, mostly invested their windfalls in shares of the new international submarine cable companies being formed in Britain in the latter 1860s.

These British submarine cable companies, especially the Eastern and Eastern Extension group run by John Pender – now folded into the modern company, Cable and Wireless – rapidly connected almost the entire planet and ensured that London had the telecommunications needed to control the first integrated world economy (Hugill 1999a; Winseck and Pike 2007: 4, 43). The first submarine telegraph link from Britain to America was laid by the joint Anglo-American efforts of 1857 and 1858 using British and American naval ships. The 1857 cable was never completed and, although that of 1858 was, a lack of understanding of how electromagnetic waves were propagated caused it to quickly fail (Dibner 1959). The appalling expense of these failures persuaded Western Union that the best way was overland. The only submarine cable needed would be across the Bering Straits, and the English Channel was successfully cabled in 1851. After the end of the Civil War, Western Union employed military telegraphers to lay its overland cable. British engineers responded to the failure of the 1858 cable with a workable theory of propagation, a much better cable design, better laying practices, and a ship large enough to lay the cable at one shot, the Great Eastern, bought cheaply when it failed as a passenger liner. After a third failure to lay the cable in 1865, when it broke in mid Atlantic, Great Eastern successfully joined Britain to America by cable in 1866, then grappled up the broken 1865 cable and repaired it (Coates and Finn 1979). With the new technologies proven and profitable, British investors then proceeded to cable the world, with the last major line, that across the Pacific connecting the Americas to Australasia and Asia, completed in 1902 (Hugill 1999a).

Submarine cables also radically altered international diplomacy through intense time-space compression: international crises now had to be responded to in real time, without much time for reflection (Nickles 2003). As America and Germany sought to challenge British hegemony there was increasing realization that Britain’s stranglehold on global telecommunications through its network of submarine cables was geopolitically problematic (Hugill 2009a). At the very end of the Victorian period both countries embarked on a search for an alternative the British could not control (Hugill 1999a; Winkler 2008).

**FUTURES MARKETS AND STOCK MARKETS**

The cumulative changes in telecommunications contributed to the rapid development of international markets for stocks, commodities, finished goods and services,
most particularly financial services. The latter preceded the Victorian era with the development by Lloyd’s of London in the 1700s of the world’s first effective market for insurance, initially of ships at sea. Access to information was a powerful driver here. Efficient mail service, packet boats, telegraphy, and wireless all improved information flow for insurers. At the end of the Victorian era Lloyd’s would only give its highest insurance rating to ships that carried Marconi wireless equipment. Such improved information flow also helped London control the global market for capital throughout the Victorian era. Parkin described submarine telegraphs as the ‘nerves’ of Empire (Parkin 1894: 238).

The most radical innovation of the Victorian financial system was the development of futures trading. In 1877 the formation of the London Metal Exchange saw futures trading in metals begin in London: futures trading in grain followed in the 1880s. But the pioneering developments were in Chicago from 1848 on, when the Chicago Board of Trade was formed, and 1865, when the first standardized futures contracts were issued. By then the city had emerged as the great centre for railroads, water transport via the rivers and the Great Lakes, and telegraphs for almost all North America. Farmers received a higher price for their output in Chicago, of which the telegraph made them quickly aware. Before futures trading, grain was packaged, shipped, and sold in sacks, and moved by riverboats. Riverboats leaked, foundered, and burned, and farmers and shippers bore all risks of loss and paid high rates of insurance. Railroads revolutionized shipping by switching the unit of shipment to the carload and by moving grain far more quickly and safely. Cars could be loaded much faster using grain elevators, although to do so the grain had to be graded into a small number of standardized categories. But grain could now be treated as a liquid that moved in streams, not a solid in discrete sacks, which ‘made it possible for people to buy and sell grain not as the physical product of human labour on a particular tract of prairie earth but as an abstract claim on the golden stream flowing through the city’s elevators’ (Cronon 1991: 104–32, quote from 120). The creation of the ‘futures’ market in order to make this abstract claim radically improved the ease of financing grain output, handling, shipping, and marketing, making it much easier for farmers to make rational planting decisions based on market demand, rather than relying on instinct and guesswork. Loans to farmers could then also be based on predicted demand for given crops. This had knock-on effects to providers of seed, fertilizer, shipping facilities and the like. The consequences were the much easier and far more reliable provisioning of rapidly growing Victorian cities.

BUREAUCRATIC MANAGEMENT

From the 1870s on there are three less commented upon impacts of Victorian time-space compression. The Second Industrial Revolution brought the development of much larger, bureaucratically controlled corporations. The rise of the ‘New Nationalism’ and the ‘New Imperialism’ demanded substantially increased, centralized, and bureaucratized state control. In many ways these developed outside a Britain that remained committed to relatively small-scale governance and small, mostly family-held companies, although they would impact it massively in the Edwardian period.
In such liberal states as Britain and America individual liberties began to shrink as the provision of more and more late Victorian services fell into the hands of corporations. Although the political rights of citizens increased almost everywhere, so too did their responsibilities to the nation-states and empires within which their lives were increasingly embedded. As Max Weber classically put it in the first work of sociology to examine the rise of bureaucracies, ‘bureaucracy . . . is fully developed in political and ecclesiastical communities only in the modern state, and in the private economy only in the most advanced institutions of capitalism’ (Weber 1978: 956). Railroads and telegraphs were the key to the bureaucracies needed to manage these institutions, although they would be complemented by the telephone toward the end of the Victorian period, but ‘cities were the nerve centers of the system’ (Balogh 2009: 305–06). This was far more noticeable in America, and has been interpreted by business historians as the triumph of organizational management (Chandler 1977). As American firms strove for scale advantages and to serve their rapidly increasing national market, the expansion of managerial functions clearly drove the expansion of private bureaucracy. But in America the emergence of a national market following the Civil War was by no means a given, despite the interventionist nature of the Republican administration during that war and, crucially, the passing of the National Banking Act making the dollar the sole legal currency after 1863. It was much more a consequence of what Brian Balogh has called A Government Out of Sight (2009), a particular feature of which was intervention by the Supreme Court to guarantee the rights of corporations to resist constant attempts by state government to invoke the doctrine of ‘states’ rights’ and restrain the behaviour of such corporations within their political boundaries. The late Victorian corporation was thus a predominantly American development predicated on the Supreme Court’s 1886 decision in Santa Clara County versus Southern Pacific Railroad. This gave American corporations the same protection offered to individuals under the Fourteenth Amendment to the Constitution of 1868, which prevented Southern States from imposing ‘Black Codes’ to avoid giving their freed slaves equality under the law. As this subtle, Americanized ‘New Nationalism’ developed, a whole slew of other Supreme Court decisions naturalized the large national corporation in late Victorian America (Balogh 2009: 329–50).

As much larger scale markets emerged, much enlarged bureaucracies were needed to manage increasingly complicated production processes. The first industrial revolution had seen in Britain the development of a ‘heterogeneous employment situation: factories, artisan trades, street work, and domestic outwork, all inter-penetrating one another . . . fusing employment, family, and local community against exploitation from outside’. The Second Industrial Revolution ‘brought concentrated capital, the large factory, and employers’ offensive de-skilling artisans while upgrading casual labourers to formal employment and semiskills . . . in response, workers developed extensive and political class organization evincing socialist tendencies’ (Mann 1993: 681). Outside Britain, where industrialization had been largely completed early in Victoria’s reign, the rapidity of the second industrialization caused massive disruption of agricultural populations as people were forced off the land and into the cities as cheap labour. In an America where, in Turner’s famous thesis, the frontier available for agricultural settlement did not
‘close’ until the 1890s (Turner 1893), the new industrialization could only be kept up by the massive immigration made possible by the late Victorian steamship.

Outside the liberal states the rise of the ‘New Nationalism’ was more important in the emergence of bureaucracies. To ensure acceptance of German unification under Prussian leadership, Chancellor Otto von Bismarck created the world’s first system of comprehensive social services – disability insurance in the work place, pensions, health insurance, and the like. Such ‘social imperialism’ spread rapidly since it allowed the new nation-states to use the provision of social services as an income transfer mechanism to reduce the tensions building in capitalist societies as a result of the growing economic inequalities of the late Victorian Gilded Age (Taylor and Flint 2006: 104–05). Social imperialism also pushed states into consideration of who was and was not entitled to state services, solidifying the concept of citizenship. Finally, it allowed the nation-state to identify who was and was not fit for military service, the creation of much more professional militaries under the bureaucratic control of General Staffs, and the ability to generate large conscript militaries when the need arose.

The increasingly bureaucratic nation-states could not have been administered without improvements in transportation and telecommunication facilitating central management of social resources. Increasingly elaborate local, regional, and central government bureaucracies developed to keep track of citizens, their responsibilities to their homeland in such areas as compulsory education and military service, and the benefits to which they were entitled. Although in general such forces operated less in the liberal states, they were far from absent and grew massively in the Victorian era. In the British night watchman state of 1840, local, regional, and central government civilian spending was 31 per cent of government expenditure: military spending accounted for only 26 per cent of central government spending. In 1840 the range of central government expenditures on the military in the core states of Austria, Prussia-Germany, France, Great Britain, and America was from 26 to 65 per cent. By 1900, however, expenditures by all governmental units (local, regional, and central) on social services in these core states were from 47 to 74 per cent, and by 1911, with civil debt included, ‘the true range for total civilian expenditures among all the states is about 70 to 85 percent’ of central government spending (Mann 1993: 373–75).

Expanded bureaucracies were also necessary to the successful operation of the ‘New Imperialism’ that developed after the Berlin Conference of 1884–85. Beginning in America with the Morrill Tariff of 1861, individual states began to abandon free trade, arguing a need for protection so that they could industrialize (Hugill 2009b). In 1879 Imperial Germany moved to protection. Two of the three largest economies on the planet were now protectionist. This meant that the competition for resources and markets was no longer merely economic: protectionist policies pushed such competition into the realm of politics. In the largely organic economies of the period the need for resources and foodstuffs that could only be grown in tropical (sugar, tea, coffee, opium etc.) or sub-tropical climates (cotton, etc.) meant that political control of the appropriate territories was vital. Without colonies, Germany was more susceptible to this problem than any other state, hence the Berlin Conference. The southern states of America were sub-tropical, and by far the world’s greatest source of the cotton needed for the textile-led
industrialization that characterized the Victorian period. Britain already had both its empire for tropical goods and reliable access to American cotton, but by the late Victorian period it was becoming obvious that more efficient American textile mills could pay more for American cotton than British mills, and Britain began to seek remedies within territories it controlled politically (Hugill forthcoming). By the end of the Victorian period most of the world was organized politically into a series of imperial structures. Only the slow but successful development of organic chemistry would end a world economy in which imperial possession of a variety of climatically different territories was vitally necessary (Hugill 1993a; Hugill and Bachman 2005).

Inevitably these competing nation-state and imperial structures clashed. It seemed to many military minds from the mid-Victorian period onward that advances in first wired, then wireless telegraphy could be used to radically increase centralized command and control of militaries. This would thin the ‘fog of war’ somewhat and allow assets to be moved around quickly and efficiently both strategically during preparation for war, and tactically, on the battlefield itself. Wired telegraphy proved its worth in the American Civil War, but it was the emergence of wireless technologies that held real promise. The British Army experimented unsuccessfully with a primitive wireless system at the end of Victoria’s reign, during the Boer War, but it was in the navies of the world that wireless technology found its first natural home. Before, wireless ships that had left port were ‘lost’: with wireless they could be given constantly upgraded orders from naval headquarters.

THE INTENSIFICATION OF IDENTITIES

The second half of the Victorian era saw a remarkable intensification of identities, especially group identities, that arose out of the combination of increasing nationalism, improved literacy, better communications, and new forms of entertainment, especially group entertainment. Governments everywhere began to worry about how they could develop or strengthen a sense among their citizens of national identity. Businesses saw group entertainment as something that could generate profits. Both governments and businesses also began to see the need for more education, both of the workforce and to improve military performance as warfare intensified and became more technological. This greatly increased the demand for written material for education and entertainment, and wholly new forms of education emerged to increase solidarity. Team sports such as soccer, rugby, football, and baseball became increasingly popular, especially among the working classes. Better railroads and telecommunications meant a relatively limited number of entertainers in music halls and burlesque shows could move from city to city to provide the variety of shows needed to ensure repeat custom.

The intensity of this late Victorian time-space compression and its consequences for at least the British Empire were caught by Parkin at the end of the Victorian era:

> the transactions of finance and commerce, the regulation of demand and supply, the direction of our commercial fleets and of the armed navy which defends them, all depend now in great measure on the far-reaching influence of electric

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force... It is no flight of imagination, but a simple fact, to say that by the agency of the telegraph, backed up by the diffusive power of the press, in a few short hours the heart of our nation through all its worldwide extent may be made to beat with one emotion.

(Parkin 1894: 236–37)

Newspapers had always been important in the Western world, but after 1870 a slew of daily newspapers emerged to cater to an increasing literacy fuelled by educational systems that taught the ideals of the ‘New Nationalism’ and emphasized patriotism. Such papers depended very heavily on telegraphed reports. This plus the ‘New Imperialism’ led most nation-states into what eventually became known as ‘jingoism’. Famously, such forces are held to have allowed William Randolph Hearst to use his New York Journal to push America into the Spanish–American War of 1898. Magazines were often just as jingoistic, though less dependent on the immediate reporting of news from far places around the globe. The most circulated and influential magazine in Imperial Germany, the sophisticated illustrated weekly, Simplicissimus, spent a vast amount of time arguing for Germany’s right to a ‘place in the sun’ while simultaneously recognizing the likely costs of such a policy of imperial expansion vis-à-vis needed reforms at home. It was aggressively anti-British, depicting the British as decadent, unwilling to fight, and preferring to use mercenaries (Hugill 2008).

Although popular novels came into existence before the Victorian era a new form of novel emerged in the middle Victorian era, one global in character and informed by the technological changes of the period. The novels of Jules Verne are now thought of as science fiction, but such works as Around the World in Eighty Days (1873) were really technological romances set in a newly globalized context, rendered accessible to the average person by rapidly increasing literacy and the development of the mass media market. As the ‘New Imperialism’ emerged following the Berlin Conference of 1884–85 contemporaneously with rising literacy, a sub-genre of novel also emerged designed to produce strong group identification among teenage boys. Pioneered by British author G. A. Henty, this new style of novel was intensely patriotic and glamorized life on the imperial frontiers. Henty’s books, 122 in all, also sold in vast numbers in America, pirated by over 30 different American publishers (Arnold 1980). Henty wrote in the same style for the new weekly magazines, such as Boys’ Own Paper, and was widely imitated. Important American writers such as Edward Stratemeyer, who would eventually be responsible for over 3,000 children’s titles, adapted Henty’s sub-genre for America starting with his Old Glory Series, which focused on the first American venture into the ‘New Imperialism’, the Spanish–American War (Hugill 1999b).

New forms of entertainment, consumed weekly, also fostered group identity. Although large cities such as London had long enjoyed good access to a reasonable number of theatres, such entertainment catered largely to elites. The first true music hall appeared in London in 1852, and by 1878 London had 78 large music halls and some 300 smaller ones (http://en.wikipedia.org/wiki/Music_hall, accessed 29 November 2010). Such a widely popular new style of entertainment spread rapidly, and most provincial British cities quickly developed music halls. British acts also carried the new-style theatre to America where it evolved into the more sexually
suggestive burlesque theatre (http://en.wikipedia.org/wiki/Burlesque, accessed 29 November 2010). The British dancer, Lydia Thompson, introduced burlesque into America together with her British Blondes dance troupe in 1868. Much of the reason for the success of burlesque was simply that American cities were home to large numbers of single male immigrants in the late Victorian era.

Finally, team sports emerged to cater to more spatially constructed identities. Football was initially a public school game with highly variable rules that appealed mostly to its players, but British cities began to develop football for paying spectators in the 1850s. The rules were first standardized in 1863 with the formation of the Football Association (FA); by 1871, 50 clubs belonged to the FA. The first international was played between England and Scotland in 1872, and in 1888 the world's first football league was formed in Birmingham, led by Aston Villa. In America the first spectator sport at the city level was baseball, initially called ‘townball’ and played by amateurs from the 1840s on. The game grew explosively after the Civil War, when the National Association of Base Ball Players (NABBP) was formed.

Cricket, significant as a game of imperial and English-speaking as well as local identities, followed a similar trajectory. County clubs began forming in 1839, although the first formal county championship was not held until 1890. The first recorded international match was played in 1844 between British North America and the United States. In 1859 a British professional team toured North America. International test cricket began between Britain and Australia in 1877, with South Africa joining in 1884 (http://en.wikipedia.org/wiki/History_of_cricket, accessed 29 November 2010). Routine games at the global level were made possible only because of the regularization of travel by the steamship, just as national championships relied on the well-developed late Victorian rail network.

CONCLUSION

Thus far I have concentrated generally on the positive features of the Victorian time–space compression. People became more mobile and better connected, and many gained access to more and better food, goods, information, education, and social services. But there were also at least three darksides. The first came from the renewed, intensified ‘New Imperialism’ of the 1880s on. The world population was increasing rapidly, the period of free trade was over and, as long as resources still came largely from the organic world, the competition for territory was bound to intensify as a result of time–space compression. By 1901 the shape of the struggles for territory and resources that would engulf the post-Victorian world were becoming clear. Imperial Germany had announced a clear naval challenge to Britain, and Britain had begun to restructure its global security arrangements by abandoning its long policy of ‘splendid isolation’ and, in particular through the Hay-Pauncefote Treaty of 1901, firming up an early version of the Anglo-American alliance that dominates global geopolitics to this day. The darkside here was the hundreds of millions of deaths that accompanied three global struggles involving the Anglo-American alliance: with Imperial Germany in the First World War; Nazi Germany and Imperial Japan in the Second World War; and the Communist powers
in a Cold War that had fewer battle deaths but an appalling number of civilian deaths. The great architect of Anglo-American geopolitical thinking, Halford Mackinder, saw this dark future with some clarity in 1904 (Mackinder 1904; Hugill 2009c; Kearns 2009).

A second darkside of time–space compression was the expansion of the Eurasian disease pool into the last region of the world it had not reached, Australasia and the Pacific Islands. The ships of the early 1800s were slow enough that the most virulent Eurasian diseases died out before European ships reached the area. By the mid-1800s that was no longer true. When smallpox reached the Hawaiian Islands in the 1850s, it killed over 50 per cent of the indigenous population in the first two weeks. At almost the same time, improved transport allowed leprosy, Hansen’s Disease, to also reach the islands – the Hawaiians called it ‘the Chinese disease’ (Tayman 2006). By the late 1800s the populations of Australasia and the Pacific Islands were in demographic free-fall, seemingly headed for extinction by Eurasian diseases.

The third darkside was the renewal of the trade in humans. Victoria came to the throne after slavery had ended in her empire and after the global trade in humans had been largely suppressed for some 30 years. But steamships could move large numbers of contract labourers, usually from India and China, quickly and cheaply, and they became the norm in plantation agriculture by the end of the 1800s. This later Victorian trade in contract labour was little more than a reborn slave trade (Hoerder 2002). This reborn trade was part of the intensifying pressure for agricultural resources, a pressure that pushed some imperial powers into brutal repression of any indigenous groups who resisted integration into the intensifying imperial structure caused by time–space compression. The use of concentration camps by the British to control the rural Boers of South Africa during the Boer War, though not a deliberate policy of extermination, set a dismal precedent for a not too distant future. German troops would massacre some 75,000 Herero and Nama peoples in German Southwest Africa in 1907–08, in the twentieth century’s first attested incident of genocide, when they resisted planting cotton needed by German textile mills (Hugill 2008: 12–13).

For all the problems it created, the accelerating time–space compression of the Victorian era powerfully and positively changed the human condition. Both the quantity and quality of the food supply improved vastly, in part through the opening up of new lands, in part because of better transport, in part because of better information flows about markets. Raw materials for industry could now be moved around the planet with ease, as could the goods industry could now turn out. Labour, too, could move rapidly from regions of surplus to places their labour was needed, and people who migrated no longer lost contact with friends and relations. More efficient bureaucracies ensured more efficient industries, and the emergence of states with increasingly strong abilities to provide for the well-being of their citizens. Although much of this hinged on better transportation overland by railroad and over the seas of the world by steamship, what bound the whole system together in the most startling acceleration of all was sui generis: the ability to move information at the speed of light through the global network of telegraphs installed by largely British capital and engineers.
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