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Simone M. Müller. *Wiring the World: The Social and Cultural Creation of Global Telegraph Networks.* Columbia Studies in International and Global History Series. New York: Columbia University Press, 2016. 386 pp. $60.00 (cloth), ISBN 978-0-231-17432-9.

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Wiring the World, by Simone M. Müller, assistant professor of North American history at Albert Ludwigs University of Freiburg, is an exploration of the politics, cultures, and economies of the North Atlantic telegraph cable system in the second half of the twentieth century. The author focuses on the people most directly involved with and connected to the cable system: âthe inventors, electricians, manufacturers, financiers, journalists, and statesmen,â as well as shareholders, who constituted the âactor networksâ (not to be confused with actor-network theory in the field of science and technology studies) that enabled the system and so nineteenth-century globalization (pp. 228, 6). The book aims to follow a âglobal historyâ approach, which, by focusing on these actor networks, looks to move beyond earlier histories of telegraph networks by emphasizing âinter- and nongovernmental modes of regulation and coordination, transboundary processes of scientific and business exchanges, and alternative notions of identity beyond and outside of the primarily Euro-American nation-state and empire, respectivelyâ (p. 8). The author largely succeeds in these objectives. This work not only is an important addition to the historical literature on telegraph cables but would also be of interest to scholars concerned more broadly with the history of nineteenth- and twentieth-century international transport, communications, and capitalism.

The first chapter tells the story of the laying of the Great Atlantic Cable (1854-66) from the perspective of a small group of networked British and American engineers and businessmen. It follows the American busi-

nessman Cyrus W. Field and his associates as they found their cable companies, and then across the Atlantic as they forged business partnerships in London. The first attempt to lay a cable across the Atlantic in 1857 failed, and on the second attempt in 1858 the cable only worked for twenty-seven days. In telling the story of the successful laying of a cable in 1865-66, Müller shifts the focus onto the *Great Eastern* and the âClass of 1866â (p. 20)âthe group of entrepreneurs, financiers, and engineers who made the cable-laying possible. One of her key points here is that these individuals constituted a âcable royalty,â which went on to exert inordinate financial, political, and technological influence on cable laying until the late 1880s (p. 41).

The first half of the second chapter explores business competition around transatlantic cables in the 1870s, focusing in particular on the role of the Class of 1866. Although these individuals were responsible for most of the spurt in global cable expansion in the 1870s, their core concern remained the Atlantic regionâthe most hotly contested cable space. The author focuses in particular on the Atlantic âtelegraph warâ between, on one side, John Spender (the leading cable royalty), the Globe Telegraph and Trust Company, and the âAtlantic poolâ (a consortium of cable companies working in the North Atlantic), and on the other side, William Siemens and the Direct United States Cable Company (pp. 58, 59). Siemens challenged Spender and his associatesâ Atlantic cable monopoly by forming his own company and laying his own cable, which, within a few months of its opening in 1875, took a 30 percent share of transatlantic cable traf-

fic. The second half of the chapter analyzes stockholdings in cable companies over this time period, and finds that there was a large shift to small shareholders, particularly women.

Through (mostly) newspaper and magazine articles, the third chapter explores the ideologies that accompanied the transatlantic cable in the late 1800s and very early 1900s, including notions of an electric union, universal peace, and Euro-Americaâs civilizing mission. Telegraph promotersâ rhetoric that international telegraphic connections would spread peace and prosperity chimed with widespread existing perceptions of the pacific effects of international communications. MÃ¼ller focuses in particular on Manchester liberalism, notions of a unified Christian globe, the engineer as the great civilizer, and (in later decades) a legal internationalism as drivers for these ideas.

The fourth chapter examines the wider business of transatlantic cable communication. It surveys the types of messages sent and their cost, connections to news organizations (newspapers, Western Union, the Associated Press), and debates about the social service provided by cable and the cost of its messages. These debates embodied, MÃ¼ller argues, differing notions of the social role of global communication. For newspaper proprietor Henniker Heaton it was a ânatural rightâ for all users across the world, whereas for telegraph manager James Anderson cable networks were to produce profit and enable (elite) commerce (p. 153).

The fifth chapter explores the interrelation between the cable business and the Society of Telegraph Engineers. Beginning with the establishment of the society in 1871, the author examines the groupâs role in the creation and dispersal of professional telegraphic engineering knowledge. In addition to research and testing, the author addresses tensions over the nature of âtelegraphic knowledgeâ and the contested transformation of the society to the Institution of Electrical Engineers in 1889 (p. 174). The author argues that telegraph companies carried out significant research and development, both through their small in-house research staff and at cable stations. Scientists associated with the Society of Telegraph Engineers used it to carry out scientific research, for example, on magnetic storms. Telegraph operators, often used as research assistants by scientists, such as William Thompson, on these types of research projects, resented their subservient role. They also considered themselves experts on the telegraph and inventors in their own right. Operator James Graves, for example, between 1872 and

1887 read sixteen papers before the society on topics as diverse as earth currents and earthquakes, and cable conduction and resistance. These papers often received a poor reception from scientists, who resented operatorsâ attempts to be recognized as inventors and scientific researchers.

The sixth chapter examines the ways in which the British and US governments interacted with the North Atlantic telegraph system. It explores the politics of landing rights (the right, granted to a cable company, to set up one end of the cable in a particular territory), the British General Post Office and the International Telegraph Unionâs interest in telegraph cables, and the role of telegraph actors in Anglo-American diplomacy. It also looks at the lives of local cable engineers, electricians, and workers in Newfoundland, and ends with a short study of the strategic nationalist imperatives and debates in the United States in the 1890s underlying the construction of a transpacific cable. The author develops the notion of cable agents as âcable nationalists,â often working in conjunction with their governments to further national interests. The era of new imperialism in particular opened up cables to nationalist and imperialist interference in new ways, as in, for example, when the US military cut international cables in the Philippines during the Spanish-American War (1898-99).

MÃ¼llerâs final chapter summarizes what her âactor networksâ perspectiveâ on the transatlantic telegraph tells us about globalization processes in the nineteenth century (pp. 227-228). First, it shows that focusing on lone entrepreneurs or ingenious inventors and engineers is inadequate for understanding globalization processes; instead âtheir success depended on transnational networks that relied upon pre-existing local connectionâ (p. 230). Second, revealing the social backgrounds of those involved in globalization allows her to connect these processes to the emerging middle classes. Finally, it reveals how these globalizing processes built on preexisting early modern international connections. The focus on the social dimensions of globalization allow the actors in the book to emerge as âactors of globalizationâ (pp. 227-228), shaping, navigating in, and mediating the processes of globalization embodied in cable systems and their wider networks.

This is a sprawling book, and this characteristic is both the workâs main strength and a weakness. Past studies of the North Atlantic telegraph network have largely been unidimensional in nature. This work, on the other hand, brings out the myriad of different economic,

cultural, and technological aspects of the network, and helps the reader see some connections between the diverse activities, ideas, and people that surrounded and constituted it. This means, though, that some of the chapters (the sixth in particular) are somewhat disjointed and composed of smaller sections that have little connections between them. This, however, is a small failing, and perhaps inevitable if one wants to fit a wide variety of topics into seven chapters. Overall, her approach, based on following key actors through their networks, works well, and reveals and highlights many significant connections and aspects of cable history overlooked by the existing literature on transatlantic cables.

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