

Introduction

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Nervous exhaustion, wrote the New York physician and early neurologist George Miller Beard in 1881, is 'a result and accompaniment and barometer of civilisation'.¹ Throughout his study, *American Nervousness*, Beard was very explicit in drawing out the relationship between the new technologies, work, and education patterns of a modernising, industrialising society, and the nervous exhaustion, or what he called neurasthenia, of its subjects. The human nervous system had been held culpable for a range of diseases since at least the late seventeenth century, and anxieties about nervous diseases and other mental ailments arising from the general pressures of modern life were not unique to America in the nineteenth century. Nonetheless, Beard insisted upon the distinct status of neurasthenia not simply as a general condition of modern life, but as a culturally specific, new disease with characteristic symptoms that were induced by that life.² In support of this claim, he drew together medical hypotheses with cultural critique and social observation, constructing the figure of the neurasthenic as one who both produces, and is produced by, the practices and structures of industrial modernity. Only the nineteenth century, Beard insisted, was capable of suffering from neurasthenia because, while other civilisations had undoubtedly experienced weak nerves and fatigue, it was this period alone that had produced the five elements which he believed inculcated such severe nervous exhaustion: 'Steam power, the periodical press, the telegraph, the sciences, and the mental activity of women.'³

Held in a continual state of socio-cultural, economic, and technological flux, the nineteenth-century American citizen was supposedly living in an almost permanent state of nervousness. Furthermore, Beard noted, because America, a 'young and rapidly growing nation, with civil, religious, and social liberty', was more advanced in each of these categories than any other nation, it was only natural that nervous exhaustion was more pronounced in the United States than it was anywhere else in the world.⁴

Beard's insistence upon the profound connection between the social and economic factors of modern living, and the state of the nerves, was distinctly nationalistic in its avowal of neurasthenia as a malady of what he deemed to be the most evolved, 'civilised' societies. This may, in part, account for the fact that the term neurasthenia was not widely used to refer to conditions relating to overwork and fatigue outside the United States. Beard's nationalism is, moreover, increasingly problematic throughout his analysis, as it is deployed to establish national and racial hierarchies in the context of modernity and modernisation, and to affirm the superior status of American social and economic institutions globally. Beard's descriptions of the disease were, as David Schuster has noted, 'rife with religious, racial, and regional assumptions.'⁵ Those peoples Beard regarded as content to live in ignorance, indifferent to science or the mysteries of life, or who lived robust, 'primitive' lives without overexerting their mental faculties, were supposedly spared the sufferings of the neurasthenic. Thus, Schuster notes, 'by explaining who was not susceptible to neurasthenia – Catholics, southerners, Indians, blacks – Beard was framing neurasthenia as a primarily white, Anglo-Saxon, Protestant, Yankee condition.'⁶ Implicit in Beard's claims is a form of social change whereby 'civilisation', figured here as an external and rather violent force, '*invades* any nation' in the form of specific social and technological innovations, and individuals react by feeling overworked, overstimulated, fatigued, and generally anxious.⁷ He assumes a global history of discontinuous, asynchronous cultures on an imperial scale, against which societies might measure and define themselves as more or less neurotic, and therefore as more or less 'modern'. Disease itself becomes for Beard a marker of industrial and technological modernity, the privilege of the overcultured and the affluent, and a critical component of the national identity.⁸ Neurasthenia, or 'Americanitis' as it was sometimes dubbed, was, as one New

York doctor reflected in 1904, one of the nation's 'most distinctive and precious pathological possessions', and an 'important stimulus to patriotism and racial solidarity'.⁹ The pathological conditions seeming to emanate from specific changes in the social and physical environment were, at least for some, a matter of national pride.¹⁰

The present volume, which examines the correlations that were being drawn between notions of progress and pathology across a diverse range of socio-economic cultures in the long nineteenth century beginning with the French Revolution, interrogates such notions of exceptionalism. Our purview is deliberately transnational, drawing on case studies from Britain, America, France, Germany, Finland, Bengal, China, and the South Pacific, in order to provide rich comparative perspectives on medical responses to, and constructions of, modernity, while demonstrating that anxieties about mental and physical ailments arising from the general pressures of modern life were not unique to America, or to Britain, in the nineteenth century, but engendered concern across national boundaries and cultures. Central to this study is the question of how self-referential concepts of 'the modern' worked to structure perceptions of health, disease, and medical treatment in the long nineteenth century. Neurasthenia was not the only disease constituted in relation to problems of modernity or to national character. Similar claims were, as our volume demonstrates, made around the world for other conditions such as fatigue, cancer, suicide, and general cultural or intellectual degeneration. Analogous concerns about the interaction between the environment and individual and social well-being also emerged in movements for self-improvement and self-care, public health and sanitation, and the 'rescue' and reform of the poor and disabled. These preoccupations influenced public policies, with numerous commissions and scientific inquiries into, for example, incidences of suicide and other causes of death amongst expanding urban populations, and instances of medical negligence and professional accountability. Through such activities, new connections were established between environmental conditions, social pressures, and bodily and mental pathologies. By highlighting such intricate interactions across the history of literature, psychiatry, and social and public health and reform in the nineteenth century, the chapters in this volume seek to understand more broadly how societies and discourses construct and formulate health and disease.

Nineteenth-century advances in the fields of technology, science, and medicine, while clearly constituting ‘progress’ for some, nonetheless prompted deep concern about the problems and pathologies that would potentially be induced by modern life. An increasing number of references to the problems of ‘modern times’ and to the ‘wear and tear’ of modern life can be traced throughout the nineteenth-century medical and general press across national boundaries and cultures. In Italy in 1891, for example, the physiologist Angelo Mosso’s *La Fatica* famously proffered his formulation of the laws pertaining to exhaustion, while in Russia in 1879, the psychologist I. A. Sikorskii studied various conditions of mental fatigue in young people over the course of the school day.¹¹ In Germany the shocking number of suicides occurring among secondary school students was attributed to the extreme mental and physical overburdening of school children, and such a mass of German literature emerged on the subject of mental overpressure that the politician August Reichensperger observed that simply staying abreast of the proliferating number of pamphlets and articles addressing the issue could overburden the mind.¹² The poet Victor Laprade similarly decried what he called the ‘*L’Éducation homicide*’ of French lycées and colleges, describing theirs as a ‘regimen entirely contrary to nature, which lowers the vital force and enervates the constitution of both the individual and the race subjected to it for too long.’¹³ The physician Aimé Riant in his study, *Le surménage intellectuel*, in 1889, and Alfred Binet and Victor Henri in their work, *La Fatigue intellectuelle*, in 1898, equally registered their alarm at what they considered to be the chronic overwork and exhaustion of young French citizens.¹⁴ At times, as Anson Rabinbach has shown in his study of *The Human Motor* (1992), the scientific and cultural frameworks through which notions of progress and industry were deployed drew on remarkably similar metaphors pertaining to work, energy, and exhaustion. In nations with distinctive politics, practices, and body imaginaries, stress, fatigue, and nervous exhaustion were generally deemed to be the inevitable corollaries of the pressures and pace of modern civilisation.

‘Life at high pressure’ was, according to the eminent London-based physician Thomas Stretch Dowse, ‘the prominent feature of the nineteenth century’, and tracing this concept across nineteenth-century cultures affords new insights into both popular and medical understandings of the body and mind. Dowse declared in his 1880 study of

brain and nerve exhaustion that 'we cannot be surprised when we find that the so-called nervous diseases and exhaustions, dipsomania and insanity, are increasing beyond all proportion to the rapid increase of the population.'¹⁵ People were suffering as never before, he believed, from varying states of physical and mental exhaustion, which were themselves symptoms of a much broader national deterioration. Here again, it seems, a nation's pride was at stake, as Dowse draws a direct correlation between a general decline in the country's health, and its future standing in a competitive industrial economy.¹⁶ In his 1875 address to the Royal Institution, published in an enlarged form in the *Contemporary Review* with the title 'Life at High Pressure', the manufacturer and journalist W. R. Greg similarly argued that the disconcertingly hurried pace of the 'high-pressure style of life' was the result of both technological and social factors.¹⁷ First, the 'rapidity of railway travelling', which, Greg noted, 'produces a kind of chronic disturbance in the nervous system of those who use it much', had forever accelerated the individual's rate of movement.¹⁸ Secondly, he argued, the incessant demands placed upon professional and public figures such as lawyers, physicians, ministers, and politicians – 'even', he noted, 'the literary workman or the eager man of science' – required 'a greater strain upon both bodily and mental powers, a sterner concentration of effort and of aim, and a more harsh and rigid sacrifice of the relaxations and amenities which time offers to the easy-going and unambitious.'¹⁹ Excess physical and mental exertion, Greg makes clear, could disrupt or even deplete an exhausted nervous system, rendering it incapable of further function and highly susceptible to a range of diseases. A defining feature of the modern civilised subject, heightened nervousness was paradoxically rendering the human race less fit for survival.

It is a central aim of this volume to explore changing perceptions of health and disease in the context of burgeoning global modernities of the long nineteenth century. The concept of 'modernity', often defined exclusively by its Western or European model, is of course a relative term, often predicated on a break with the past across social, cultural, political, and economic institutions, and conferred by historians as a means of determining major shifts in orientation.²⁰ L. S. Jacyna, in his recent work on medicine and modernism, contends that historians have typically employed this term in such a manner, to 'refer to the inter-related series of economic, social, and political transformations that

occurred in Western societies during the period of the long nineteenth century.²¹ However, 'modernity' is also a self-referential concept, an actors' category, employed and applied within any given social and cultural moment by those seeking to express what they regard as new conditions in the social, political, and economic order. In this view, as Shmuel N. Eisenstadt has argued, modernity is inherently multiple and contingent, with different groups of social actors 'holding very different views on what makes societies modern.'²² Differences of perception are particularly marked once the question of modernity is placed in a global frame. It is these varying perceptions of modernity which we are concerned with here, as set within a distinctly medical framework, since understandings of the human mind and body were increasingly challenged, modified, and reframed by the politics and structures of 'modern life' in the long nineteenth century. Rather than seeking to determine what was precisely 'modern' about this historical moment, or indeed to label the period itself, or any specific geographical or cultural location as 'modern', we are interested in tracking a range of anxieties and varieties of experience, as they were expressed and explored in the literature, science, and medicine of the time in terms of their impact upon social, cultural, and medical formations of the mind and body. Our principal concern is how the structures of industrial, commercial, and technological modernity came to be deeply embedded within understandings of physiological and psychological identity. As a whole, therefore, this volume offers a series of explorations of the ways in which modernity was constructed and performed within a range of medical discourses across the nineteenth century. Together, these chapters demonstrate the complexity and relativity of the term 'modernity' itself, and its fundamental instability as a category of analysis in the history of medical practice.

As Charles E. Rosenberg suggested in his influential article, 'Pathologies of progress: the idea of civilization as risk', the 'use of disease incidence and theories of causation and pathology as vehicles for the articulation and legitimation of cultural criticism' have persisted for centuries, as 'disease has always been construed as both indicator and product of less than ideal social conditions.'²³ This 'progress-and-pathology narrative', to use Rosenberg's terminology, is an oft-recurring, yet extremely fluid narrative that 'can be used in a variety of contexts with a variety of social motives.'²⁴ As such, as this volume demonstrates, it

has been appropriated for and implicated in a range of social, cultural, and psychological formations, providing a useful rhetorical framework for, but also affording insight into, the cultural and ideological characters of its users. By interrogating the deployment of this narrative across diverse modes of expression, we ultimately seek to establish the ways in which medical, political, and cultural discourses have interacted in defining concepts of health and disease as peculiarly 'modern'.²⁵

Our concern to situate medical knowledge in relation to specific sites of social and cultural experience responds to recent currents in history of medicine scholarship which explore nineteenth-century anxieties about health and modernity. It has often been noted, for example, that the jarring effects of new modes of transport, machinery, communications technologies, and the expansion of print culture fundamentally altered human perceptions of space and time, and prompted concerns about the equivalent velocity necessary in human thought and action in order to keep pace.²⁶ The emergence in mid-Victorian Britain of the condition known as 'Railway Spine', a physical disorder often said to be caused by the excessive vibrations passing through the human body during railway travel, and the British *fin-de-siècle* condition known as 'Bicycle Face', in reference to the wild, staring eyes, strained expression, and projecting jaw of the avid female cyclist, were discrete complaints that have been explicitly connected to contemporary anxieties surrounding the effects on public health of modern technologies and the shocks and strains they imposed.²⁷ Similarly, concerns were being raised by British and French doctors in the 1860s surrounding the sexual excitement supposedly being induced in female users of the sewing machine.²⁸ In such diagnoses, it is clear that definitions and perceptions of disease actively inform and are informed by their broader social contexts in terms of class, race, gender, and sexual politics. In more general terms, also, however, conditions such as 'nervous shock' and 'traumatic hysteria', emergent in the nineteenth century, have been noted as medicalised expressions of the new and apparently shocking conditions of modern life in various contexts.²⁹ Socially and culturally inflected experiences of neurasthenia have also been located within a multiplicity of medical practices and across a range of modernising discourses, for example in imperial Germany, nineteenth-century Russia, modern China, and Victorian England.³⁰ In Japan, as Sabine Frühstück has argued, neurasthenia was closely connected to concerns

about masculinity, masturbation, and homosexuality.³¹ Contrastingly, debates about neurasthenia in nineteenth-century Argentina were, as Kristin Ruggiero's work on modern diseases in the national Argentinian identity demonstrates, deeply informed by historical, politicised disputes about national honour and social responsibility.³² This particular disease of modern life carried different meanings in different social, cultural, and political contexts.

Part of the function of this collection, then, is to register both the disciplinary convergences that give rise to such diagnoses, and the varying and culturally specific conditions of what constituted medical modernity around the world. Nineteenth-century anxieties about health and modernity have attracted a good deal of attention in recent scholarship, much of this focusing upon discrete disease entities or conditions. The field of public and environmental health, for example, tends to be treated in isolation from consideration of nervous diseases, whilst work on nervous diseases has tended to look at single aspects within this category, such as neurasthenia, shock, or agoraphobia.³³ It is alongside such works that we situate *Progress and pathology*. However, rather than focusing on a specific condition or concern as symptomatic of the nineteenth-century psyche, we seek to address the broad range of ways in which anxieties about health and disease manifested themselves in the period. In its ambition and multidisciplinary scope, our project follows the path set by the Victorians themselves in the ways in which they traced the relationships between physiological, psychological, and social health, or disease. This kind of holistic approach was taken by a number of contemporary writers, most notably Benjamin Ward Richardson in his 1876 work, *Diseases of Modern Life*. In this volume, we intend to disrupt the frequent compartmentalisation of psychiatric, environmental, and literary histories in present practice, in order to re-contextualise the problems of modernity.³⁴ Taking our cue from Richardson's work, we thus address anxieties about physical debility, hygiene and sanitation, nervous illness and exhaustion, psychology and mental health, and commodity culture. Each of the following chapters represents a specific avenue of concern as it was expressed and explored by nineteenth-century commentators, and each case study shows how medicine, broadly and culturally conceived, is intricately embedded in, and responsive to, the larger worlds in which it operates. The emphasis of this work is deliberately interdisciplinary, as we strive

to tease out the range of public and private practices in which the supposed ill effects of modern life were being mobilised, from developments in psychiatric and public health, to new forms of cancer and suicide research, to speculations as to what was being lost in the movement from subjectivity to biomedical objectivity. This diverse range of source material highlights the often close dialogue that took place between medical professionals and the general public via the pages of popular newspapers and magazines, and the circulation of medico-scientific knowledge. In analysing these interactions, we demonstrate that debates concerning the impact of modern life on mental and physical well-being were being voiced across disciplines, in discussions that dovetailed with constructions of modern selfhood in medical, psychological, political, and literary spheres.

Medicine serves a crucial intermediary role in the processes of negotiation between the self and its environment, between pathologies of the body and the broader dynamics of social, cultural, and economic exchange. In a condition such as neurasthenia, those dynamics are explicitly drawn upon to structure new and evolving identity formations. For this reason, Roger Cooter has identified neurasthenia alongside degeneration in his study of 'medicine and modernity', as one of those 'new-fangled theories' that 'were themselves signs of modernity in medicine', as they 'cut new social paths in medical thinking at the same time as they established new medicalized ways of thinking about society and identity'.³⁵ Medical theories and treatments of the diseases of modern life were not only deeply embedded in social and cultural operations; modernity itself was actively constructed and deployed from within nineteenth-century medical discourses.

This volume is framed by questions of epistemology and revolves around a tightly focused series of medical and cultural responses to the general pressures of modern life. We begin by asking what role medicine played in the formation of new and evolving definitions of the modern self during the French Revolution, and end by raising this question again with reference to medicine more generally when it is set alongside the historical record of the long nineteenth century. Our intention is not to provide a comprehensive account of the medical and cultural transformations of this dynamic period; rather, we ask how medical theories, practices, and technologies both structured and were constituted in relation to problems of modernity across literature, science,

and medicine. The authors gathered here illustrate how changing social, political, and economic dynamics were drawn upon across multiple emergent disciplines to support new conceptions of the healthy or unhealthy mind and body. Such conceptions are read within and across evolving practices in psychiatry, psychology, psychopathology, physiology, marketing, and education. Drawing on current scholarship on the history of medicine, science, and technology, disability studies, childhood, and consumer culture, we explore how emotional and physical ailments in this period were often understood as uniquely 'modern'. By interrogating the practices and ideologies that underpin these understandings, we offer new ways of thinking about how the mind and body were situated in relation to rapidly changing external environments.

Laurens Schlicht, in the first chapter, opens our discussion at the moment of the European age of revolutions, which inculcated not only a wave of physical displacement, but also a profound sense of moral and political shock. In France, contemporary writers within medicine, politics, and the developing human sciences maintained that it had been necessary to inflict this kind of shock in order to dismantle the rigid structures of French society and make way for a radically new regime. Sustained metaphors of the medicalised human body, the social body, and the body politic commingled in the critical questions that were raised about the nature of the relationship between individuals and their wider social collective, and about the ways in which the passions of France's citizens might be either stirred into action or carefully regulated by external influences. Manifestations of this conscious interaction between medical and political spheres, Schlicht shows, included the emergent psychiatric practice of intentionally shocking patients as a form of therapy, and the evolving instruction of deaf-mute pupils, as schools and asylums provided experimental spaces for controlling and adjusting the human passions. In addition to an overt politicisation of the body and its responses to shock and strain, these discussions carried sustained analyses of the medicalised human body, and informed an evolving scientific practice directed towards an essentialised sphere of individuality.

In the second chapter, Torsten Riotte takes up the interaction between medical and political spheres in the context of nineteenth-century Germany, and poses questions about accountability, medical negligence, and the nature of individual and collective responsibility

in relation to accidents. Beginning with the first recorded court case in 1811, when a doctor at the Berlin Charité hospital sued a colleague over the death of a female patient, Riotte draws upon the files of the so-called medical commissions (medical advisory boards to ministries of the interior in the German states) in order to analyse the professional and public debate that ensued and to engage in a discussion of medical negligence as an aspect of professional accountability. The emergence of medical courts of honour from the mid-1870s onwards, and the complementary development of liability insurance for doctors, illuminate the shifting moral, economic, and social structures in which medical practices were embedded.

The interaction of medical and political spheres regarding questions of public health also actively informed notions of individual and collective responsibility regarding the figure of the child, who became a primary focus for concerns about the moral powers of education and the corrupting effects of urban life. Notions of a youthful, 'natural' state of innocence and purity stem, it has often been noted, from Jean-Jacques Rousseau's *Émile, ou de l'éducation* (1762), in which he declared that 'childhood has its own ways of seeing, thinking, and feeling', and that the child mind 'should be left undisturbed until its faculties have developed'.³⁶ Educational treatises of the late eighteenth and early nineteenth centuries generally advised parents to maintain a child's 'natural' state of innocence and purity through vigilant protection and preferably physical removal from cities and society in general, and from dangerous reading materials or formal training in particular. In the next chapter, Steven Taylor traces this now very familiar model of childhood through to nineteenth-century concerns surrounding the protection and, where necessary, the rescue, of children of the urban poor. During this period of rapid industrialisation and urbanisation in England, Taylor argues, there was increased political and evangelical attention directed towards children as members of a distinct and vulnerable population in a morally dangerous and increasingly adult urban society. The romantic desire to 'protect' children from the ill effects of modern urban life was, in the context of the child rescue efforts of 1870 to 1914, underpinned by a desire to produce useful, morally upright, and productive citizens of future generations. Those children who were deemed physically or mentally incapable of rendering themselves 'useful' to society were, therefore, thought to be beyond the scope of state improvement and

educational intervention. Taylor focuses specifically on the Church of England-sponsored Waifs and Strays Society, and examines the manner in which discourses drawn on by health and educational professionals pathologised disabled children as 'imperfect', and even as a potential source of violence. Viewed through a lens of pathological difference, children living with impairment represented physiological and psychological deviations from a socially and politically accepted model of childhood and its patterns of development.

Kristine Swenson further interrogates this model of the pathologisation of physiological and psychological variation in the following chapter, by turning to popular reform movements which arose in response to what mainstream medicine considered largely innate and unchangeable conditions, and actively pursued alternative methods of constructing such difference. Drawing on the emergence of the American Fowler family – led by the brothers Orson and Lorenzo, their sister, Charlotte, and her husband Samuel Wells – as her central case study, Swenson considers the Fowlers' empire of phrenological lecture tours, publishing, and therapeutics as a practice that not only kept phrenology in the public eye long after its dismissal from scientific practice, but that responded to the perceived ills of industrialised capitalism by touting progressive self-improvement and self-care. The Fowlers, Swenson shows, exploited the potential of phrenology as a form of practical self-help (or 'self-culture') allied to hydropathy, dietetics, vegetarianism, dress reform, and temperance. The concept of self-help, largely associated in Victorian studies with the work of Scottish writer and government reformer Samuel Smiles (1812–1904) whose *Self Help*, published in 1859, sold a quarter of a million copies in his lifetime, permeated British and American cultures well beyond Smiles's works.³⁷ As cultural fears of degeneration and race suicide became widespread, and the middle classes were increasingly seen as subject to the 'modern illnesses' of neurasthenia and dyspepsia, the Fowlers sought means of facilitating social and personal adjustment to the demands of a newly industrialised society. Their reform-oriented late-century phrenology promised personal improvement through proper living habits and the 'exercising' of the faculties, and seemed to mitigate the harsh physiological and psychological consequences of Darwinian evolution and hereditary conditions, which fuelled degenerationist discourse.

Moving from the first section of this volume, which explores varying constructions of modernity and the modern subject in relation to medical practice, Chapters 5 to 8, collectively titled 'Paradoxes of Modern Living', are devoted to 'diseases' and conditions that seemingly emerged from a dialectical relationship between notions of progress and pathology. Degenerationist discourses across the medical, biological, and psychiatric sciences of the *fin de siècle* illuminated the 'dark side of progress', as the supposed advancement of the human race was understood to be constantly threatened with potential reversals through collapse, physical and psychological deviancy, or decay.³⁸ Late nineteenth-century society appeared to many commentators increasingly to manifest degenerate symptoms of nervous exhaustion, neurosis, psychosis, and general debility derived from prolonged exposure to the speed, noise, and constant stimuli of the urban environment. Such noxious influences as hysteria, neurasthenia, insanity, criminality, and even homosexuality, induced fears concerning the possible corruption of the species through the determinism of heredity. As Max Nordau explained in his study, *Degeneration* (1892), when an organism becomes debilitated, its successors will not resemble the healthy, normal type of the species with its capacities for development, but will form a new subspecies.³⁹ Images of reversion to lower animal or protoplasmic states proliferated in the art and literature of the period, and were frequently employed, as William Greenslade and Daniel Pick have shown, in order to demonstrate the risks of this kind of atavistic decline, while also paranoically creating and enforcing political boundaries between races, genders, and nationalities.⁴⁰ Despite, or indeed, because of its progress, the modern, civilised Western subject was continually confronted with its own fear of a backwards slide and the loss of control.

Manon Mathias opens this section by analysing new attitudes towards disease and hygiene in the nineteenth century in the context of the unprecedented growth of cities in this period, which provoked a parallel rise in diseases from human excrement (such as typhus, typhoid fever, and cholera). This analysis is placed in the context of new scientific understandings of bacteria that began to develop in the late nineteenth century, as the realisation that germs spread through human contact led to an acute fear of dirt and an increased obsession with cleanliness. As human excrement came to dominate discussions of public health and disease, fictions of the period provoked and explored

imaginative extensions of these concerns. Jules Verne's *Cinq cents millions de la Bégum* (1880), Camille Flammarion's *Uranie* (1889), and William Morris's *News from Nowhere* (1890) each created compelling fantasies of alternative, faeces-free societies in which bodily waste and dirt have been eradicated. These somewhat anodyne and sterile hygienic utopias, however, also reveal the potential unintended consequences of extreme cleanliness. Implicated in the rational rejection of disease and infection, Mathias argues, is a rejection of human physicality, intimacy, and passion.

In Chapter 6, Steffan Blayney pursues this concept of the human being who is at odds with their environment by tracing an ongoing tension between the overwhelmingly fast pace of industrial modernity, and the natural rhythms and pulses of the finite energies of the human body. Demands for increased velocity of thought and action inculcated a variety of concerns about modernity and its limits, and about social, political, and cultural decline. Fatigue, rarely mentioned in scientific or medical textbooks before the 1860s, emerged in the latter decades of the century as a particularly disturbing symptom of modernity, representing both its degrading effects and its immanent limits. Blayney examines constructions of fatigue at the end of the nineteenth century, as both scientific object and cultural metaphor, situating this condition alongside other such *fin-de-siècle* signifiers as decadence and degeneration. In this context, Blayney approaches fatigue as the bodily manifestation of the second law of thermodynamics, as well as a critical part of the new medical terminology that proliferated in order to designate the exhausting effects of modern life. It was expressive of the inevitable dissipation of energy that accompanied the performance of work in this period. Paradoxically, an epidemic of fatigue appeared both as the main obstacle to the progressive development of industrial civilisation, and as the most indubitable evidence of its ascendancy.

The aetiology of nineteenth-century fatigue as a kind of built-in counter to the dangers of excess was deeply embedded in social, economic, and political realities, and it relied upon a new scientific understanding of the material world and of the body, grounded in the concepts of 'energy' and 'work'. In her seminal text, *Illness as Metaphor* (1991), Susan Sontag traced similar anxieties about the expenditure of energy to the social and cultural perceptions that accrued around more specific diseases such as syphilis, tuberculosis, and cancer, which consumed or

stored energy at varying rates. ‘The Victorian idea of TB as a disease of low energy (and heightened sensitivity)’, Sontag argues, ‘echo[ed] the attitudes of early capitalist accumulation’ in that the sufferer was understood to have a limited amount of energy, which may be depleted, or wasted away, without appropriate regulation. In contrast, cancer ‘evokes a different economic catastrophe: that of the unregulated, abnormal, incoherent growth.’⁴¹ As a disease with a monstrous capacity for growth and expansion, cancer thus typically conjures notions of invasion, attack, and unrestraint. In Chapter 7, Agnes Arnold-Forster takes up this ongoing interplay between medical understandings of cancer and broader social and economic shifts, which, she notes, has given rise to cancer’s fluid metaphoric identity. Arnold-Forster situates the ‘new cancer epidemic’ of the *fin de siècle* within a climate of widespread anxiety about the vitality of the British Empire and concerns about imperial over-reaching, as well as fears of the revolt of an apparently unruly, ungovernable, and newly enfranchised urban population. The metaphoric associations of the cancerous growth resonated in many colonial contexts, as doctors who reflected on medicine in non-European contexts became particularly engaged with the conceptualisation of certain races as more or less prone to the disease, and therefore as more or less ‘modern’. Commentators on the domestic ‘cancer epidemic’ perceived its presence as an unintended consequence of the public health successes of industrial modernity, such as lower infant mortality, increasing hospitalisation, and sanitary reforms. In these parallel, but conflicting, constructions of cancer as a pathology of progress, the disease itself emerged as a symptom of modern life that nonetheless manifested a national deterioration in health.

Another phenomenon discursively connected both to the conditions of modern life and to social degeneration and decline at the *fin de siècle* was suicide. The rise of the new science of social statistics in the early decades of the nineteenth century had enabled researchers to collect new forms of data on suicide incidence and causes of death amongst expanding urban populations and to reinforce their suspicions about the disruptive, even fatal, consequences of urbanisation and industrialisation. Like cancer, suicide was constructed both as a by-product of progress, and as a source of social and cultural decline. In 1879, the Italian professor of psychological medicine, Enrico Morselli, drew on the language of Darwin and Spencer to argue that suicide was

'an effect of the struggle for existence, and of human selection', and that urban societies therefore had higher rates of suicide than rural societies because the struggle for existence was intensified by city living.⁴² The pioneering social scientist, Émile Durkheim, also drew explicit parallels between individual and social maladies in his definitive study, *Le Suicide* in 1897. In Finland, too, the principal case study of Mikko Myllykangas's chapter, the psychiatrist Thiodolf Saelan explicitly attributed the slowly increasing suicide rates in Finland to modern urban lifestyles, in an effort to accentuate the cultural differences between so-called 'modernised' Western nations, and other cultures. Myllykangas interrogates such claims in the context of Finnish society, which, he notes, was at a very different stage of industrial transition than many of its Western European counterparts. In this specific social and political context, counterarguments to the widespread conception of suicide in Europe were put forward by figures such as the physician and anthropologist F. W. Westerlund, who argued that it was in fact the lack of progress and modernisation in Finland that constituted its main causes of suicide. Likewise, Hannes Gebhard, a member of the Finnish Parliament, criticised what he considered the excessively deterministic view of human nature that had been put forward by other commentators. These divergent constructions of the role of modernity in relation to suicide ultimately illustrate the ways in which physiological and psychological problems of the period were being constituted in relation to their social contexts and to the changing dynamics of urbanisation and industrialisation. It also points to the multiplicity of modernities being organised around different and evolving definitions of the subjective and/or suicidal self. The notion of modernity here, and throughout this volume, is clearly far from static. It is a constantly changing accretion of history, social context, and material conditions.

The third part of the book investigates the fluctuating boundaries between medical theory, social change, and cultural representation in this era within non-European contexts. Drawing on Johannes Fabian's work on the conceptual geography of anthropology, which, Fabian contends, regards different cultures as living in different moments of historical development, Projit Bihari Mukharji points to a similar denial of coevalness in the history of medicine.⁴³ The distinctions drawn between 'Western' (later 'bio') medicine and various so-called 'traditional medicines', Mukharji argues, have consistently relegated the latter to the

practices of a bygone era. Nonetheless, 'Western' medicine is not the only tradition to have engaged with constructions of modernity. During the nineteenth century, so-called 'traditional' medicines around the globe were also forced to confront the notion of modernity in all its diversity. The Ayurveda tradition of South Asia was one such medical practice, and at the core of Mukharji's chapter is a demonstration of the modernity of Ayurveda. The interplay between Ayurvedic practice and social, cultural, and economic change in nineteenth-century South Asia was, he shows, twofold. Ayurvedic physicians such as Doktor Binodbihari Ray Kabiraj not only developed a self-conscious discourse about modernity and its effects upon the body and mind, but they explicitly drew upon the language of modernity in order to radically reconfigure the Ayurvedic body. Metaphors, as Laura Otis points out, are not, after all, about producing 'objective knowledge' but about 'creating productive thought'.⁴⁴ Railways and telegraphs, for these physicians, were not simply new material realities; they were also a rich ideational resource that encouraged and inspired them to think in new ways about the human body and its operations.

In the following chapter, Alice Tsay tracks the global history of a patent medicine known as Dr Williams' Pink Pills for Pale People, from its invention in Canada in 1866 to promotional spreads dedicated to these greatly popular pills in Chinese-language publications in Shanghai in the early twentieth century. Dr Williams' Pink Pills were only one instance of the plethora of treatments which were being patented, marketed, and experimented with as a means of countering nervous exhaustion in the latter decades of the nineteenth century. By the time they made their appearance in Shanghai in the early decades of the twentieth century, however, Dr Williams' pills were widely derided in England and North America as an archetypal example of quackery, with commentators identifying the pills' continued ubiquity as a sign of the public's refusal to recognise scientific progress. Like the 'traditional' medicines evoked by Mukharji in the previous chapter, patent medicines were now associated with notions of backwardness and regression, particularly when they were encountered abroad. Foreign advertisements for Dr Williams' pills, however, engaged with notions of modernity from within their own social and cultural framework. Resisting the claims of scholars such as Erik Elinder and Theodore Levitt, who argue that worldwide advertising is a form of standardisation and gradual

homogenisation across the globe, Tsay's comparative study reveals a more nuanced, localised form of engagement with the product in question.⁴⁵ Rather than simply translating their Anglo-American counterparts, Shanghai advertisements for the pills came to articulate a distinctly Chinese vision of twentieth-century society in their depiction of new gender roles, their absorption of non-Western medical discourse, and their use of *baihua*, the emerging vernacular. The discourse of the modern, at least in the case of this consumer product, was carefully tailored to its audience, while also responding to that audience, and was part of an ongoing dialogue between producers and consumers.

In Chapter 11, Daniel Simpson delineates a complex model of imperial and cultural entanglement in the context of a controversial medical debate surrounding poison arrows in the Victorian South Pacific. The death of the naval captain James Graham Goodenough under a hail of poisonous arrows on the Santa Cruz Islands in 1875 was, Simpson argues, a moment in which previously vague British fears of the poisons of Santa Cruz – supposedly a place of primitivism and a source of mysterious and dangerous knowledge unknown to the West – were seemingly confirmed. Amidst evangelical formulations of Goodenough's death as a kind of Christian martyrdom which he had suffered while heroically spreading Western 'civilisation' to the region, research into Pacific poisons by the ship's surgeon, Adam Brunton Messer, pointed to certain medical, cultural, and environmental factors that countered the popular hysteria. The prevailing superstitious dread of the reputed poisons of the region, Messer argued, had predisposed British sailors to a nervous irritability, which either mimicked or encouraged the onset of tetanus. Furthermore, he insisted, endemic neurosis amongst sailors was responsible for the increasing prevalence of tetanus in the wounds of those struck by ostensibly poisonous arrows. The suffering of many naval men, then, was in fact symptomatic of the mental strain associated with working in the Pacific during a period of increasingly violent encounters. In drawing upon new scientific, psychopathological understandings of the relations between mind and body, Messer effectively collapsed the distinctions between the 'civilised' and the 'uncivilised' peoples clashing in the South Pacific by imagining that modern medical education might work in both cases to supplant antiquated superstitions and anecdotal evidence. His medical practices and hypotheses, deployed at a juncture of intense intercultural

contact, served both to characterise and to realise a form of medical modernity.

'The modern' was a widely deployed nineteenth-century signifier without a clearly corresponding signified, and the question of what constituted the diseases of modern life was partly the work of social perception and consensus, and partly the work of medical analysis and hypothesis. In the final section of this volume, 'Reflections and provocation', Christopher Hamlin takes up this unstable and often polarised relationship between cultural experience and interpretation on the one hand, and biomedical objectivity on the other, in order to draw our attention to a phenomenon which is so frequently missing from current scholarship: embodied subjectivity. In so doing, Hamlin does not offer us a single case study, like those of the preceding chapters. Rather, he ranges widely from public health archives to literary texts in a highly individual style and form, interrogating E. P. Thompson's seminal concept of the 'moral economy' through the social history of health, and questioning how we might meaningfully register the experiences of those whose words, emotions, and details of everyday lives are lost to history, and indeed were scarcely registered in their own times. Questioning the very voices and vocabularies through which the social history of health has been constructed, Hamlin warns us against complacency by recognising both the usefulness and the limitations of our approaches to illness and the history of medicine, while adopting an integrative and holistic approach to notions of disease. In a provocative paralleling of the historical figure of the nuisance inspector with the gamekeeper (or lover) in D. H. Lawrence's *Lady Chatterley's Lover*, and the tales of patients of Hardwicke Hospital, Dublin, in 1840–41 and 1844, with the complaints of Agnes Fleming in Charles Dickens's *Oliver Twist*, he opens up the possibilities of work which crosses literary and medical histories as a context in which the formation of an embodied subjectivity might be considered.

Although our work focuses on the range of ways in which anxieties about health and disease manifested themselves in medical and cultural discourses of the long nineteenth century, the authors in this volume frequently draw parallels to the present, positing Victorian perceptions of the diseases of modern life as close precursors to early twenty-first-century worries about the psychological and physiological strains of our own 'modern', technology-saturated lives. While we do not wish to

draw a direct line of comparison between nineteenth-century attitudes to such technologies as the telegraph, train, telephone, and expanding print culture, and our own responses as a culture to the advent of the internet, the mobile phone, and associated complaints of 'fake news' and information overload, the longer historical context of such concerns, and their resonances across multiple fields of operation, is made evident throughout this volume. What emerges from such analysis is an increased alertness, not only to the anxieties induced by new developments and 'modern' technologies in and of themselves, but to the broader, and deeply intertwined, social, cultural, economic, and political contexts from which they have developed.

Notes

- 1 George M. Beard, *American Nervousness: Its Causes and Consequences* (New York: G. P. Putnam's, 1881), 186.
- 2 The nerves were central to the work of, for example, the English physician Thomas Willis (1621–75) and, subsequently, the Scottish Enlightenment physician George Cheyne (1671–1743), and the French physiologist Xavier Bichat (1771–1802). A detailed outline of this nervous history is provided in Roy Porter, 'Nervousness, Eighteenth and Nineteenth Century Style: From Luxury to Labour', in M. Gijswijt-Hofstra and R. Porter (eds), *Cultures of Neurasthenia from Beard to the First World War* (Amsterdam: Rodopi, 2001), 31–49.
- 3 Beard, *American Nervousness*, p. iv.
- 4 *Ibid.*, 176. Charles E. Rosenberg, in 'The place of George M. Beard in nineteenth-century psychiatry', *Bulletin of the History of Medicine*, 36 (January 1962), 245–59 (pp. 255–7), explores the 'long and familiar' tradition of nationalism underpinning Beard's aetiology of neurasthenia.
- 5 David Schuster, *Neurasthenic Nation: America's Search for Health, Happiness, and Comfort, 1869–1920* (New Brunswick: Rutgers University Press, 2011), 22.
- 6 Schuster, *Neurasthenic Nation*, 22.
- 7 Beard, *American Nervousness*, 186. Our emphasis.
- 8 For a detailed examination of the relationship between neurasthenia and the era's politics of race, nationalism, and citizenship, see Brad Campbell, 'The making of "American": race and nation in neurasthenic discourse', *History of Psychiatry*, 18:2 (2007), 131–56.
- 9 Charles L. Dana, 'The partial passing of neurasthenia', *Boston Medical and Surgical Journal*, 150:13 (1904), 339–44 (p. 341).

- 10 For a discussion of peculiarly British views on the concept of neurasthenia, and its advent as a useful addition to the British medical lexicon, see Janet Oppenheim, *'Shattered Nerves': Doctors, Patients, and Depression in Victorian England* (Oxford: Oxford University Press, 1991), 79–109.
- 11 On the history of education in Russia and the late nineteenth-century concerns surrounding overpressure, see Patrick L. Alston, *Education and the State in Tsarist Russia* (Stanford, CA: Stanford University Press, 1969).
- 12 James C. Albisetti, *Secondary School Reform in Imperial Germany* (Princeton, NJ: Princeton University Press, 1983), 123.
- 13 Victor Laprade, *L'Éducation homicide. Plaidoyer pour l'enfance* (Paris: Didier, 1868), 30.
- 14 Aimé Riant, *Le Surménage intellectuel et les exercices physiques* (Paris: J. B. Baillière, 1889); Alfred Binet and Victor Henri, *La Fatigue intellectuelle* (Paris: C. Reinwald, 1898).
- 15 Thomas Stretch Dowse, *On Brain and Nerve Exhaustion: 'Neurasthenia', Its Nature and Curative Treatment* (London: Ballière, Tindall, and Cox, 1880), 40.
- 16 These claims were reflective of more general cultural perceptions of the dissipation of mechanical, mental, and physical energy under the strain of modernity. As Anson Rabinbach has shown, a decline in nervous energy was understood to create a corresponding decline in labour and productivity and was, therefore, in many ways an important indicator of a nation's longevity. See Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (New York: Basic Books, 1990).
- 17 W. R. Greg, 'Life at High Pressure', *Contemporary Review* (December 1874), 623–38 (p. 627).
- 18 *Ibid.*, 627. Greg adds to this form of chronic disruption, the anxiety to be on time and the hurrying pace to catch trains which further the daily wear and tear of the nervous system.
- 19 *Ibid.*, 629.
- 20 Marshall Berman, for example, identifies three distinct transitional periods in his investigation of modernism and its complexities: 1500 to c. 1800, the nineteenth century, and the twentieth century. Crane Brinton and Richard Tarnas argue that a distinctly 'modern' world view emerged in the Enlightenment period. According to Richard Tarnas, it is science that dictates these shifts in orientation, while according to Warren W. Wagar, it is the process of secularisation. See Marshall Berman, *All That is Solid Melts into Air: The Experience of Modernity* (London: Verso, 1983); Crane Brinton, *The Shaping of Modern Thought* (Englewood Cliffs, NJ: Prentice-Hall, 1963); Richard Tarnas, *The Passion of the Western Mind: Understanding the Ideas that have Shaped our World View* (London: Pimlico, 1996);

- Warren W. Wagar (ed.), *The Idea of Progress Since the Renaissance* (New York: John Wiley, 1964).
- 21 L. S. Jacyna, *Medicine and Modernism: A Biography of Sir Henry Head* (London: Pickering and Chatto, 2008), 4.
 - 22 S. N. Eisenstadt, 'Multiple modernities', *Daedalus* 1:129 (2000), 1–29 (p. 2). See also Dominic Sachsenmaier, S. N. Eisenstadt, and Jens Riedel (eds), *Reflections on Multiple Modernities: European, Chinese, and Other Interpretations* (Leiden: Brill, 2002). For further exploration of the notion of multiple modernities, see Alberto Martinelli, *Global Modernization: Rethinking the Project of Modernity* (London: SAGE, 2005).
 - 23 C. E. Rosenberg, 'Pathologies of progress: the idea of civilization as risk', *Bulletin of the History of Medicine*, 72:4 (1998), 714–30 (p. 716).
 - 24 *Ibid.*, 730.
 - 25 The emphasis throughout this study on the interrelations of modernity and the human mind and body has resonances with Michael Sappol's recent book, *Body Modern: Fritz Kahn, Scientific Illustration, and the Homuncular Subject* (Minneapolis: University of Minnesota Press, 2017), which locates modernity within the human body in the context of art and design, and considers the ways in which 'the surfaces of modernity' are 'brought into the depths of the body, and the depths of the body' are brought out 'onto modernity's industrial, urban, and domestic surfaces' (165).
 - 26 The jarring effect of new modes of transport, machinery, or technological advances have been explored by Rabinbach in *The Human Motor*, Andreas Killen in his *Berlin Electropolis: Shock, Nerves, and German Modernity* (Berkeley: University of California Press, 2006), and in the more recent edited collection by Laura Salisbury and Andrew Shail, *Neurology and Modernity: A Cultural History of Nervous Systems, 1800–1950* (Basingstoke: Palgrave Macmillan, 2010). Now 'classic' texts in the field, such as Wolfgang Schivelbusch's *The Railway Journey: The Industrialization of Time and Space in the 19th Century* (Berkeley: University of California Press, 1986) are also instructive in considering how contemporary technological and scientific developments could alter perceptions both of the world and of the individual's place within it.
 - 27 On railway spine, see Jane F. Thraikill, 'Railway Spine, Nervous Excess and the Forensic Self', in Salisbury and Shail (eds), *Neurology and Modernity*, 96–112. A detailed medical-historical analysis is provided by Michael R. Trimble, *Post-Traumatic Neuroses: From Railway Spine to Whiplash* (Chichester: John Wiley, 1981). On Bicycle Face, see Patricia Anne Vertinsky, *The Eternally Wounded Woman: Women, Doctors, and Exercise in the Late Nineteenth Century* (Manchester: Manchester University Press, 1990), 75–81.

- 28 On the influence of the sewing machine on female sexual health, see Judith Coffin, 'Credit, consumption, and images of women's desires: selling the sewing machine in late nineteenth-century France', *French Historical Studies*, 18 (1994), 749–83, and Shelley Trower, *Senses of Vibration: A History of the Pleasure and Pain of Sound* (London: Continuum, 2012), 132–8.
- 29 See, for example, Mark S. Micale and Paul Lerner (eds), *Traumatic Pasts: History, Psychiatry and Trauma in the Modern Age, 1870–1930* (Cambridge: Cambridge University Press, 2001), which offers a variety of perspectives on shock in technological, industrial, and medical modernity, and Tim Armstrong, 'Two types of shock in modernity', *Critical Quarterly*, 42 (2000), 61–73.
- 30 See Joachim Radkau, 'The Neurasthenic Experience in Imperial Germany: Expeditions into Patient Records and Side-Looks upon General History', in M. Gijswijt-Hofstra and R. Porter (eds), *Cultures of Neurasthenia from Beard to the First World War* (Amsterdam: Rodopi, 2001), 199–217; Laura Goering, 'Russian nervousness: neurasthenia and national identity in nineteenth-century Russia', *Medical History*, 47:1 (2003), 23–46; Arthur Kleinman, *Social Origins of Distress and Disease: Depression, Neurasthenia, and Pain in Modern China* (New Haven, CT: Yale University Press, 1990); Janet Oppenheim, *'Shattered Nerves': Doctors, Patients, and Depression in Victorian England* (Oxford: Oxford University Press, 1991), 79–109.
- 31 Sabine Frühstück, 'Male anxieties: nerve force, nation, and the power of sexual knowledge', *Journal of the Royal Asiatic Society*, 15 (2005), 71–88.
- 32 Kristin Ruggiero, *Modernity in the Flesh: Medicine, Law, and Society in Turn-of-the-Century Argentina* (Stanford, CA: Stanford University Press, 2004), 139–43.
- 33 For work in the field of public and environmental health, see Christopher Hamlin, *Public Health and Social Justice in the Age of Chadwick: Britain, 1800–1854* (Cambridge: Cambridge University Press, 1998), Pamela Gilbert, *Cholera and Nation: Doctoring the Social Body in Victorian England* (Albany: State University of New York Press, 2008), and Mary Poovey, *Making a Social Body: British Cultural Formation, 1830–1864* (Chicago: University of Chicago Press, 1995). Previous work focusing on nervous diseases includes Janet Oppenheim, *'Shattered Nerves': Doctors, Patients, and Depression in Victorian England* (Oxford: Oxford University Press, 1991), and Mark Micale, *The Mind of Modernism: Medicine, Psychology, and the Cultural Arts in Europe and America, 1880–1940* (Stanford, CA: Stanford University Press, 2004), and *Hysterical Man: The Hidden History of Male Nervous Illness* (Cambridge, MA: Harvard University Press, 2008). Work on the history of neurasthenia includes Frederick Gosling, *Before*

- Freud: *Neurasthenia and the American Medical Community* (Chicago: University of Illinois Press, 1987), Gijswijt-Hofstra and Porter (eds), *Cultures of Neurasthenia*, and Schuster, *Neurasthenic Nation*. On shock, see Jill Matus, *Shock, Memory and the Unconscious in Victorian Fiction* (Cambridge: Cambridge University Press, 2009), and on agoraphobia David Trotter, *The Uses of Phobia: Essays on Literature and Film* (Oxford: Wiley Blackwell, 2010).
- 34 Benjamin Ward Richardson, *Diseases of Modern Life* (London: Macmillan, 1876).
- 35 Roger Cooter, 'Medicine and Modernity', in Mark Jackson (ed.), *The Oxford Handbook of the History of Medicine* (Oxford: Oxford University Press, 2015), 100–16 (p. 103).
- 36 Jean-Jacques Rousseau, *Emile*, trans. Barbara Foxley (London: Everyman's Library, 1992), 54.
- 37 For more on the rise of Victorian self-help culture, see J. F. C. Harrison, 'The Victorian gospel of success', *Victorian Studies*, 1:2 (1957), 155–64, and Kenneth Fielden, 'Samuel Smiles and self-help', *Victorian Studies*, 12:2 (1968), 155–76. Boyd Hilton discusses self-help in a religious context in *The Age of Atonement: The Influence of Evangelicism on Social and Economic Thought, 1795–1865* (Oxford: Clarendon Press, 1988).
- 38 J. Edward Chamberlin and Sander L. Gilman, *Degeneration: The Dark Side of Progress* (New York: Columbia University Press, 1985).
- 39 Max Nordau, *Degeneration* (London: William Heinemann, 1896 [1892]).
- 40 William Greenslade, *Degeneration, Culture, and the Novel, 1880–1940* (Cambridge: Cambridge University Press, 2010) and Daniel Pick, *Faces of Degeneration: A European Disorder c. 1848–c. 1918* (Cambridge: Cambridge University Press, 1989).
- 41 Susan Sontag, *Illness as Metaphor and AIDS and its Metaphors* (London: Penguin, 1991 [1968]), 64.
- 42 Enrico Morselli, *Suicide: An Essay on Comparative Moral Statistics* (New York: D. Appleton, 1882), 354.
- 43 Johannes Fabian, *Time and the Other: How Anthropology Makes its Object* (New York: Columbia University Press, 2014).
- 44 Laura Otis, *Networking: Communicating with Bodies and Machines in the Nineteenth Century* (Ann Arbor: University of Michigan Press, 2001), 12.
- 45 Theodore Levitt, 'The globalization of markets', *Harvard Business Review*, 83:3 (1983), 92–102 and Erik Elinder, 'How international can European advertising be?' *Journal of Marketing*, 29 (1965), 7–11.