

# Rachel Carson Center

## Perspectives

How to cite:

Goodbody, Axel. "Climate Change and the Industrial Revolution: Informing Policy through History, Memory, and Literature." In: "Sites of Remembering: Landscapes, Lessons, Policies," edited by Vikas Lakhani and Eveline de Smalen, *RCC Perspectives: Transformations in Environment and Society* 2018, no. 3, 53–57. doi.org/10.5282/rcc/8486.

*RCC Perspectives: Transformations in Environment and Society* is an open-access publication. It is available online at [www.environmentandsociety.org/perspectives](http://www.environmentandsociety.org/perspectives). Articles may be downloaded, copied, and redistributed free of charge and the text may be reprinted, provided that the author and source are attributed. Please include this cover sheet when redistributing the article.

To learn more about the Rachel Carson Center for Environment and Society, please visit [www.rachelcarsoncenter.org](http://www.rachelcarsoncenter.org).

Rachel Carson Center for Environment and Society  
Leopoldstrasse 11a, 80802 Munich, GERMANY

ISSN (print) 2190-5088  
ISSN (online) 2190-8087

© Copyright of the text is held by the Rachel Carson Center.

Image copyright is retained by the individual artists; their permission may be required in case of reproduction.

SPONSORED BY THE



Federal Ministry  
of Education  
and Research

Deutsches Museum 



Axel Goodbody

## Climate Change and the Industrial Revolution: Informing Policy through History, Memory, and Literature

When the film director Danny Boyle was appointed artistic director of the opening ceremony of the 2012 Summer Olympics in London, he chose to trace the country's journey from a pastoral to an industrial nation, before ending with the forging of the Olympic rings. His brief history of Britain began with the quintessentially English scene of cricket on the village green, depicted the nation's industrialization in the nineteenth century, and culminated in a characterization of the land as one whose progressive vision and inventive creativity were symbolized by the National Health Service and the World Wide Web. Industrialization played a central role in this pageant, in which an army of workers shoveled earth, smelted iron, and raised great factory chimneys into the sky. The Industrial Revolution was presented as a heroic act and a matter of national pride: Britain led the world in the process of industrial modernization.

However, the work that Boyle's triumphal narrative of British history drew on—Humphrey Jennings's anthology of eyewitness accounts of the Industrial Revolution, *Pandaemonium* (subtitled "The Coming of the Machine as Seen by Contemporary Observers")—is more complex and ambivalent. The picture that the texts in Jennings's book paint is colored by concern over the loss of individual freedom and over deterioration of the quality of life; although this message is countered by moments of pride in technological advances and belief in our ability to one day abolish poverty, exploitation, and political injustice. The diversity of aspects of the great transformation that Britain underwent in the eighteenth and nineteenth centuries that Jennings presents, the insights into its social and cultural impact, and the openness of his account to different interpretations all make *Pandaemonium* instructive reading today, when we are faced by a second global energy system change—one imposed in large part by unintended consequences of the shift from wood, water, and wind to coal in the eighteenth and nineteenth centuries. In the following, I start by rehearsing briefly what prompted Jennings to assemble his anthology, what texts he chose, and how he arranged them,<sup>1</sup> in order to explain how the particular qualities of this book enabled it to serve as a model for the

1 For a fuller account, see Nicola Whyte and Axel Goodbody, "Pandaemonium: Narratives of Energy System Change in Historical and Literary Perspective," *Resilience* 6, no. 1 (forthcoming 2018).

Stories of Change research project. The project's aim was to promote public debate on climate change and inform policymaking in the United Kingdom by engaging in creative new ways with individuals and communities to elicit memories and stories of energy.

Jennings, who is principally remembered today for the documentary films that he directed during the Second World War, observing the behavior and values of Britons at war, was also a painter, a poet, and, together with his fellow Cambridge graduates, Charles Madge and Tom Harrison, a founder of the Mass Observation movement. Mass Observation, founded in 1937, was a groundbreaking anthropological project that celebrated the lives of ordinary people by instructing volunteer observers to record public attitudes towards changes in everyday life in their diaries and in responses to questionnaires. Jennings's various activities were driven by his lifelong ambition to understand the British experience of modernity and, as Ben Jones and Rebecca Searle write, "to capture the profound impact on everyday life of a range of overlapping economic, social, and cultural transformations."<sup>2</sup>

*Pandaemonium*, which Jennings also began in 1937 and pursued up to his death in 1950, was a historical pendant to Mass Observation, an attempt to assemble a written record of the ways in which the birth of industrial capitalism and technological developments were experienced during the Industrial Revolution, and of the shifts in the way people understood the world and their place in it. In the Introduction, Jennings describes the book as "neither the political history, nor the mechanical history, nor the social history nor the economic history, but the *imaginative history*" of the Industrial Revolution (xiii; my emphasis). Examining the cultural transformations that preceded, accompanied, and followed the advent of industrial capitalism, he anticipated debates among later historians of the Industrial Revolution over whether scarcity of coal, technological advances, and the emergence of mass manufacturing were its principal drivers, or rather the rise of secular Enlightenment thinking.<sup>3</sup> However, his main interest was the impact of industrialization and modernity on British society.

2 Ben Jones and Rebecca Searle, "Humphrey Jennings, the Left and the Experience of Modernity in Mid-twentieth-century Britain," *History Workshop Journal* 75, no 1 (2013): 190–212, 191.

3 For an overview of the principal interpretations of the causes of the Industrial Revolution, see Fredrik Albritton Jonsson, "The Industrial Revolution in the Anthropocene," *The Journal of Modern History* 84 (2012): 679–96.

The Industrial Revolution emerges from the pages of *Pandaemonium* as simultaneously wonderful and cruel, awesome and destructive. On the one hand, it is shown to have brought a deterioration of social equality, individual autonomy, and quality of life for the masses, and a regrettable pursuit of material comfort at the expense of creativity. Many texts speak of a loss of political agency: the working class were liberated from the shackles of rural labor for landowners, only to become victims of new forms of exploitation by industrial elites and have their regimentation and subordination to production intensified in the process. However, other texts tell a different story, that of workers' self-organization, tracing how initially chaotic Luddism morphed into mass demonstrations that could in the end gain them emancipation. The ambivalence of the Industrial Revolution—which Jennings conveys so vividly by juxtaposing passages describing the misery of work in the cotton mills and the iniquity of child labor with others celebrating the achievements of inventors, industrialists, and ordinary laborers—prefigures the uneven distribution of the costs and gains from decarbonization today, its differing impact on individuals and communities across regions and states, and other unintended consequences.

Jennings's emotional preference for the preindustrial past finds expression in passages voicing concern over the loss of pastoral landscapes, the unraveling of traditional social structures, and the moral degeneration caused by industrial development and urbanization. Yet these do not entirely negate the narrative of scientific and human progress. The title "*Pandaemonium*" already reflects the complexity and ambivalence of energy system change. The normal meaning of the word is "noisy disorder," "confusion," "riotous disorder." However, the book opens with a passage from Milton's *Paradise Lost*, in which Pandaemonium is depicted as the capital of hell, built on the orders of Mammon. It is a product not of chaos, but of supreme order and rationality. Its construction is portrayed as "Satanic," anticipating the "dark Satanic Mills" in Blake's poem "Jerusalem" (which is reproduced on page 127 of *Pandaemonium*), but also as a heroic and sublime act. Jennings writes: "*Pandaemonium* is the Palace of All the Devils. Its building began c. 1660. It will never be finished—it has to be transformed into Jerusalem. The building of *Pandaemonium* is the real history of Britain for the last three hundred years."<sup>4</sup>

4 Humphrey Jennings, *Pandaemonium 1660–1886: The Coming of the Machine as Seen by Contemporary Observers*, foreword by Frank Cottrell Boyce, eds. Marie-Louise Jennings and Charles Madge (London: Icon, 2012), 5.

*Pandaemonium* is made up of extracts from records of personal experience: mainly letters, journals, diaries, autobiographies, biographies, travelogues, and newspaper articles, but also histories, political speeches, scientific reports—and even poetry and fiction. These give insight into the impact of change by conveying the writer’s feelings together with factual information. Written by a wide range of people, the extracts present the same event from different viewpoints. Through its polyvocal and dialectical structure, *Pandaemonium* offers readers a series of different versions of historical events and prompts them to recognize how these meant different things to different people.

Jones and Searle have pointed to parallels with Walter Benjamin’s contemporaneous Arcades project (1927–1940).<sup>5</sup> For all its differences in subject matter and structure, this was also an assemblage of sourced texts, commentary, and speculation that aimed to document the everyday experience of modernity in order to unlock its transformative potential. Jennings, like Benjamin, conceived of a form of history that worked with memories and stories in the service of emancipating the oppressed. He believed that individuals’ experiences, communicated either orally or in writing, could serve as a crucial counterforce to dominant historical narratives, which reflected the standpoint of those in power. Remembering is for Jennings, as for Benjamin, a medium of individual and collective identity construction and maintenance, which are prerequisites for solidarity and social transformation.

A comparison of *Pandaemonium* with the historian E. A. Wrigley’s account of the Industrial Revolution, *Energy and the English Industrial Revolution*, throws into relief the difference between history and memory. Wrigley is principally concerned with explaining how Britain came to overcome a production limit that would otherwise have inhibited domestic growth in the eighteenth century. Acknowledging the importance of institutional factors and scientific advances, but focusing on the availability and use of energy, he links economic history with contemporary issues of energy and environment, and writes of the dangers of pollution and climate change.<sup>6</sup> His quest for historical truth and his abstention from glorification of the past contrast with Danny Boyle’s Olympic narrative of progressive emancipation from the shackles of nature through heroic struggle, culminating in social

5 Walter Benjamin, *The Arcades Project*, trans. Howard Eiland and Kevin McLaughlin (Cambridge, MA: The Belknap Press of Harvard University Press, 1999).

6 Edward Anthony Wrigley, *Energy and the English Industrial Revolution* (Cambridge: Cambridge University Press, 2010).

equality and a better world. But it is also significantly different from Jennings's collection of texts, which foregrounds the heterogeneous nature of historical change and presents the tensions that arose in the nineteenth century as still awaiting resolution. Jennings sought to raise critical awareness of the ongoing processes of sociotechnical change, to challenge readers to imagine alternatives, to provoke them into engaging with the historical process, and to prevent vision, energy, and aspiration from being hijacked by the forces of materialism and self-interest.

Viewed through such accounts, the Industrial Revolution can serve as a historical example of the inequalities and injustices generated by energy system transition, and of the many reasons for resistance to change—for instance where it involves breaking with cherished traditions, infringes moral or aesthetic norms, or ignores the values attached to practices and ways of life, and the threats to identities. The Anthropocene challenges us all to interrogate the accepted narrative framings of the past. As a composite memory text recalling the Industrial Revolution, *Pandaemonium*, like the Mass Observation movement, served as an inspiration for the research project “Stories of Change: The Past, Present and Future of Energy.”<sup>7</sup> The project gathered a comparable range of experiences of and views on the transition to renewable energy between 2015 and 2017, thereby pluralizing and revitalizing public conversations about energy in three sites across England and Wales. With its interactive pathways inviting exploration, the project's web platform is a rich, multifaceted resource from which stakeholders in energy debates can learn much about how actions taken to address climate change affect people's everyday lives and determine their attitudes towards different forms of change, thereby broadening consensus on energy-system change and facilitating its implementation.

7 For an account of the work on this project, which was funded by the UK's Arts and Humanities Research Council, see Joe Smith et al., “Gathering around Stories: Interdisciplinary Experiments in Support of Energy System Transitions,” *Energy Research and Social Science* 31 (2017): 284–94. <http://dx.doi.org/10.1016/j.erss.2017.06.026>; also Joe Smith and Renata Tyszczyk, eds., *Energetic: Exploring the Past, Present, and Future of Energy* (Cambridge: Shed, 2018).