

Caltech-Huntington Humanities Collaboration Module, 2019-2021

Social and Technological Change in Historical Perspective: Innovation, Quantification, Representation

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This project brings together scholars from a range of disciplines to explore the ways in which new technologies since the Industrial Revolution have addressed social challenges—related, for example, to population change, economic development, the environment—and the ways in which such challenges and associated technologies have been understood and accommodated in specific social contexts. This can be understood as a dialectical and self-reinforcing process: technology, including ways of managing and analyzing knowledge (the long history of information technology), at once provides ways of responding to social change and precipitates further change. The project is framed in broad terms to accommodate a variety of approaches and points of historical focus. The public sphere will be of particular interest, and its role in mediating how social and economic change was understood and managed, both through popular media and print culture broadly, and through literature and aesthetic forms. Political considerations are also relevant, both with respect to the ways in which governments responded to popular perceptions of change, and the ways in which states leveraged technological developments in policy-making. In addition to research in the history of ideas, there is a role for empirical social and economic history, addressing questions about the legitimacy of contemporary perceptions of change, and exploring the actual effects of innovations on particular societies.

From the late eighteenth century, European and North American intellectual and political classes were increasingly preoccupied with the social effects of industrialization and its attendant technologies. Anxieties about inequality, urbanization, class division, population change, the degradation of traditional and especially rural society, and the apparent immiseration of the poor, were as evident in newspapers and magazines as they were in government enquiries, the records of professional societies, and the reports of charitable enterprises. The increasingly formalized modes of scientific communication that shaped technological change also opened out in significant ways on state policy formation and the public sphere. Literature and the arts were similarly involved. The precocious social modernity of Britain as “the first industrial nation” can be traced from Wordsworth, Southey, and Carlyle through Dickens and George Eliot, all of whose work engages the social record of parliamentary debates and the newspaper press. Raymond Williams’s identification of the early nineteenth-century journalism of William Cobbett, rather than Romantic poetry or the fiction of Jane Austen, as a discursive prehistory to the Victorian realist novel provides a compelling reminder of the ongoing and shifting relations of the literary imagination with social knowledge and political activism. Anxieties about the new economic and social developments that were being shaped by technological change manifested

themselves concretely in popular movements like the Luddite protests and the Swing Riots. All of these influenced contemporary political discourse and policy debates.

Such developments were not limited to Britain. Similar concerns are evident in French literature in the works of Hugo and Balzac and, later, in modernist writers like Zola. Some of the best known manifestations of these social anxieties can be found in the German Romantic tradition, with its emphases on the traditional, the local, and the organic—all of which were taken to be under threat by political change (the French Revolution) and economic and social change (the Industrial Revolution). Hence attempts like those of the Brothers Grimm to document and preserve the culture of traditional rural societies, before they were steamrolled by ‘modernization’. The influence of these attitudes on government and policy-making in these and other European societies was similarly significant, as was their effect on the way generations of historians framed the study of the past.

The literary evidence can suggest a largely negative contemporary view of the social consequences of technological change. Innovation threatened to undermine traditional institutions and degrade the quality of life for ordinary subjects. This raises a number of questions, which this module will investigate. What was behind this pessimistic view of social and economic change? How do these negative responses potentially extend to our own contemporary context? Did such concerns extend through all strata of society? Where is the record of more positive or affirmative responses to economic and change? To what extent were the fears and anxieties expressed in contemporary accounts actually justified?

In retrospect, there is evidence for many of the positive aspects of technological change in this period. Agricultural innovation raised crop yields and lowered food prices; innovation in sanitation and medicine lowered mortality rates; new developments in water, rail, and road transport lowered travel costs and expanded access to markets. Some of these changes were sufficiently incremental to escape the notice of contemporaries. Moreover, effective social measurement and quantification—themselves a matter of technological change—were only gradually incorporated into accounts of the effects of technology on society. At the same time, emerging quantitative ways of assessing social change could remain as contested as contested as qualitative responses. Even works that are powerfully associated with the early history of the social sciences, such as Adam Smith’s *The Wealth of Nations* (1776) or Malthus’s *Essay on the Principle of Population* (1798), can be striking for the limited or anecdotal quality of the data and the absence of quantitative measures.

In considering the long term methodological transition shaped by the incorporation of quantification into the human sciences, and into public discourse and state policy more broadly, this project will explore the ongoing tension between technological innovation and the perception of—and ability to analyze—its effects. This is a historical problem with a relevant contemporary dimension: while technological innovation is widely accepted and celebrated, its routine incorporation in everyday life continues to inspire concerns about social consequence.

The absence of departmental boundaries and the tradition of interdisciplinary research make Caltech an ideal place for an enquiry that can engage researchers across fields and methodologies. Further, Caltech’s strengths in engineering and the natural sciences can

encourage wide-ranging humanistic enquiry into the social dimensions of the history of technology, and explore the human experience of developments in such areas as agriculture, energy, medicine, and public health, initiating conversations that cross disciplinary boundaries and engage both humanists and scientists. The research division of The Huntington is an ideal partner for this project in part because it has long drawn methodologically diverse scholars interested in social and intellectual history, and more recently the history of science.

The project includes the appointment of a two-year postdoctoral instructor as well as a year-long senior visiting faculty member. These positions are open to scholars in any area of literature or history that fits within the project framework. There is also funding for short-term visitors, workshops, and conferences; the postdoctoral instructor and visiting faculty will join the Caltech co-directors in developing program events. The aim of these events will be to encourage interdisciplinary conversation about, and analysis of, a range of related historical questions around the social impact of technological innovation.

For more information, please visit the [CHHC website](#).