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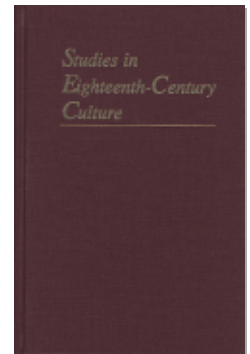
Panel Introduction: Labor, Industry, and Technology

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Panel Introduction: Labor, Industry, and Technology

HAZEL GOLD

Over the course of the eighteenth and early nineteenth centuries, small-scale production in the hands of cottage industries and individual manufacturer-entrepreneurs transitioned to the greater efficiencies that drove the proto-factories of the nascent Industrial Revolution. An explosion of new technologies—the flying shuttle, the spinning jenny, the steam engine, the power loom, the cotton gin, and the battery, among others—fueled changes in the operations of textile mills and in the mining of coal, iron, and other metals. Agricultural production, too, experienced the impact of these innovations. As work processes were automated, the labor force experienced a general shift away from skilled craftsmen toward semi-skilled or unskilled workers; simultaneously, highly trained tradesmen with the technical competence to work with these new machines also began to appear. For eighteenth-century politicians and economists, as for philosophers and practitioners of the literary and fine arts, the results of these transformations could hardly be more consequential. This is no less true for today’s scholars of the Enlightenment era.

The essays in the panel that follows originated as papers presented in a session at the 2016 ASECS annual meeting devoted to the theme of labor, industry, and technology. Session participants were asked to address the question: How did changing modes and scales of labor and production that emerged over the course of the long eighteenth century shape, consolidate,

or disrupt Enlightenment society and culture? Conversely, how did Enlightenment ideals and debates modify the understanding of technological innovation as a social and cultural force, or redirect the uses to which it was put? Their responses, here expanded and revised, draw on a broad range of disciplinary and interdisciplinary perspectives to examine the mutually transformative interactions of Enlightenment projects (both realized and imagined) and economic and technological change.

The geographical range of the essays included here bridges Europe and the Atlantic world: England, Spain, France, the French West Indies, and the North American colonies during the Revolutionary War. Equally varied are the methodologies with which the authors have framed their objects of study. Drawing on approaches grounded in historical, literary, and visual studies, these four essays underscore the dislocations that overtake the political, social, and cultural realms as a consequence of technological innovation and the reorganization of labor according to rational, utilitarian models. Yet, because technology and society travel a two-way street, these essays also acknowledge ways in which evolving political and social structures, not to mention cultural imaginaries, may have influenced how those very models came to be defined.¹ The richly textured canvas that emerges from this multidisciplinary analysis, carried out on both the micro and macro levels, illuminates significant aspects of Enlightenment culture that we can point to as the intellectual and ideological underpinnings from which modernity issues. Similarly, the global interconnections created by war, commerce, and the spread of new technologies that these studies expose should be easily recognizable from our present vantage point.

The lead essay, “Spanish Orphans, British Prisoners, and the American Revolution,” teases out a series of connections linking military and commercial objectives pursued during the 1770s–1780s by the Spanish Crown, which intervened in the American Revolutionary War fighting against the British. The focal point for Valentina Tikoff’s study is the role in this conflict of male wards of Seville’s San Telmo and Los Toribios orphanages. As the size of the Spanish fleet grew over the course of the eighteenth century, demand for trained seamen exceeded supply; to secure the required maritime labor, the Spanish government resorted to voluntary registration and enlistment, impressment of petty criminals and vagabonds, and, not least, training of orphaned youths in seafaring skills.² Making extensive use of unpublished documents held in Spanish archives, Tikoff examines two pivotal incidents involving these boys, to show how they exemplify an enlightened reformist agenda that espoused charitable relief—in this instance, the education of orphans in the technical skills required for the maritime and textile industries—to create productive workers and citizens. This contributed

to strengthening Spain's naval defense forces, thus conflating welfare with warfare, while also highlighting the potential role of technology transfer in economic expansion.

Susan Egenolf's "The Cyclops in the Vale" examines contemporaneous written and visual representations of the new British industrial landscapes—mills, mines, foundries, and factories—and traces their genealogy to discourses of the picturesque sublime and to classical mythology. In the descriptions by poets, industrialists, and artists that Egenolf analyzes (Wedgwood, Bisset, Boulton, and Louthenberg, among others), repeated references to myths—Vulcan, the Cyclops, Orpheus, Hercules, the Corinthian Maid, the Titans—establish a contrapuntal rhythm between nature (a pastoral idyll) and human industry (a hellish subterranean world), realms whose borders turn out to be far more permeable than anticipated. Industry in England's long eighteenth century is conceived as a Promethean endeavor, affording human labor and the new machinery that sustains it a quasi-epic stature that, not coincidentally, serves the ideology of progress and economic growth promoted by the state.

The performance of French state ideology through depictions of labor and technology is the explicit subject of Susan Libby's essay, "The Mechanical Plantation," which centers on the text and graphics of Diderot and d'Alembert's *Encyclopédie*. In crafting images that would invoke a visual appeal to reason, Diderot yoked style and composition in a way that simplifies and clarifies scenes of human-machine interactions, which are depicted with the seemingly impartial precision of engineering discourse. Libby's close reading of the plates illustrating sugar processing in France's West Indian possessions registers the notion of mastery over the land (indeed, nature itself) and over the slaves who labored there. As she concludes, given the condensations and displacements of visual language, "the plantation scenes act as the *Encyclopédie*'s dreamwork of the French colonial project."

Scale is all-important in the final essay by Jon Klancher, "Scale and Skill in British Print Culture." As Klancher reminds us, the very word *technology* had a different meaning for the eighteenth century: "a *technology* was something to read—a printed treatise or manual of skills that encompassed the whole range of what were then called the 'mechanical arts.'" Klancher shows how the discourse of the mechanical arts, exemplified in the work of engineer Thomas Martin, attests to the parallel processes of massive deskilling and proportionally smaller but no less important reskilling (or upskilling) of British labor following the introduction of such new technologies as James Watt's steam engine. The language of scale, first glimpsed in these eighteenth-century print technologies, insinuated itself during the nineteenth and twentieth centuries into the conceptual mapping of the human sciences

and, ultimately, into the language of daily life, gesturing to a division of labor that became intellectual, not simply social.

Read together, these essays point to specific physical and textual sites—naval academies and textile workshops, plantation fields and coal mines, mechanical arts manuals, literary works, and all manner of visual media (paintings, drawings, diagrams)—where the mutual encounter of institutions of knowledge and power engenders consequences for Enlightenment subjects and for us, their heirs and critics.

NOTES

1. Wiebe Bijker, Thomas P. Hughes, and Trevor Pinch, eds., in *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, Anniversary ed. (Cambridge: MIT Press, 2012), describe this interaction as a “seamless web” (4).

2. For an overview of this history, see Carla Rahn Phillips, “‘The Life Blood of the Navy’: Recruiting Sailors in Eighteenth-Century Spain,” *The Mariner’s Mirror: International Quarterly Journal of the Society for Nautical Research* 87 (March 2013): 820–52.