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In Composition in the University, Sharon Crowley recounts a history of composition as a scorned and marginalized discipline, and she calls for radical changes in the institutional role composition plays. Earlier, in Textual Carnivals, Susan Miller had described the ways composition was associated with popular writing rather than with literature, and, thus, how the teaching of composition was regarded as unequal to the study of privileged literary texts. If these early histories of composition describe a struggle for power, recognition, and legitimacy, Bernadette Longo's history of technical writing tells a quite different tale. Where Miller and Crowley describe a marginalized practice, Longo argues that technical writing developed as both the tool and medium of cultural power, stamped since the Renaissance with the cultural authority of science and, more recently, invested with the cultural power of contemporary systems of efficient production and management. Like Miller and Crowley, Longo calls for changing pedagogical and research practices, but her call for change emerges from a very different cultural history and from the powerful rather than marginalized social identity of technical writing.

Longo recounts the rise of the technical writing textbook and interprets textbooks as an index of the cultural place of technical writing. She begins by reviewing the handbook tradition in ancient Greece and Rome. She traces this genre through the medieval tradition of hermetic books of secrets and provides an interesting account of Georgius Agricola's medieval textbook on mining. This narrative is organized by the persistent opposition between science and magic, between abstract reasoning and observation, between occult or textual authority and more popular experimental and practical utility. Thus, when she gets to the Renaissance, Longo discusses Joseph Moxon's handbook on the smithy and Comenius' publication of the first standardized technical writing textbook as part of Francis Bacon's revolt against Aristotelian abstraction and the Catholic Church's tradition of textual authority. Longo interprets the textbooks Moxon and Comenius publish as part of the rise of Baconian science with its emphasis on secular learning and the authority of empirical observation. T.A. Rickard's 1910 A Guide to Technical Writing and W. George Crouch and Robert Zetler's 1948 A Guide to Technical Writing are
similarly presented as moments in the development of Baconian empiricism and its growing cultural power.

Useful as this historical material is, however, it is not really Longo's point. While she provides a history of technical writing textbooks, her project is really a critical reading of technical writing as a medium of cultural power and control. If technical writing in the Renaissance advanced the secular authority of science over the authority of the church and its sacred texts, in the twentieth century technical writing enacts the domination of management over labor, of science over the liberal arts. Longo's critical project emerges from recent work in cultural studies, and she is concerned with the ways in which technical writing and its standardized pedagogy extends the cultural power of scientific and technical forms of knowledge. Spurious Coin opens and concludes with Michel Foucault's question, "How is it that one particular statement appeared rather than another?" Thus framed, Longo's history explores the genealogy of technical writing texts and their affiliations with dominant cultural discourses.

Foucault's The Archaeology of Knowledge and Discipline and Punish ground Longo's account of technical writing as a way of regulating knowledge and controlling social agents. To make her argument that technical writing is the common coin in the cultural economy of power and knowledge, she begins by defining technical writing as any textualization of scientific or technical information, collapsing the historic distinction between science and technology. As Bruno Latour and Donna Haraway have argued, the postmodern configuration of knowledge and power has produced techno-science: a historically unique combination of science, capital, and technological apparatuses. As the language of techno-science, technical writing in Longo's definition is the medium through which knowledge becomes concrete and legitimate. As Longo points out, however, this arrangement has not always been the case. For most of this century, science was regarded as distinct from technology, and technical writing was legitimized by its dependence on the epistemological cachet of science. Longo locates the source of the modern separation of science from technology in Thomas Huxley's influence as president of the Royal Society at the end of the nineteenth century, and she speculates that the distinction served to insulate science from the social and political consequences of technology in the twentieth century.

The book's critique of technical writing as a culturally powerful means of controlling the activity of workers draws on Foucault's argu-
ments in *Discipline and Punish*. Longo uses Foucault's theory of surveillance and panoptic discipline to characterize the ways technical writing allowed engineers to manage the increasingly complex industrial organizations of the late nineteenth and early twentieth centuries. Seen in this context, technical writing becomes the tool of the normalizing gaze of Foucault's panopticon, regulating humans and machine alike—or, rather, human-like machine. To illustrate this history, Longo describes the growing railroad industry of the nineteenth century. The complexity and physical extension of railroad operations required new methods of record keeping and management, and these new management strategies depended on data collection, record keeping, and reporting in accurate, standardized ways. As Longo writes, "The goal of this systematizing was to create efficient and profitable operations; standards of efficiency and profitability were controlled through technical writing." But the control of railroad workers effected through technical writing was also part of a changed relationship between workers and management. The ethos of efficiency that developed in the railroads led management to develop strategies that were designed, in the words of one engineering professor of the time, to get the worker "to squeeze a little more out of himself and at the same time be good-natured in doing it."

By the beginning of the twentieth century, the surveillance of railroad workers that was accomplished through technical writing gave way to Frederick Taylor's system of scientific management, first of factory workers and later of the growing numbers of office and clerical workers. In a chapter that might easily have come from a book on labor history (and I say this as praise), Longo traces the development of more standardized technical communication as part of scientific management control systems, a development that was necessitated by the rapid expansion of office equipment: typewriters, ditto machines, vertical filing systems. She argues that as engineering continued to dominate nature, bending it to a notion of the common good, it elevated efficiency as "gospel," according to one early twentieth-century engineering professor. Thus, technical writing is implicated in the domination first of factory workers, then of clerical workers, then, finally, of managers themselves. It is in the context of the alienation and de-skilling of workers in bureaucratized industry and of the industrial struggles over control and autonomy that Longo discusses Crouch and Zetler's 1948 technical writing textbook. In Longo's account, technical writing is instrumental in what Max Weber long ago called the rationalization of modern society,
a stark forecast to which Foucault has added another chapter and in which Longo locates technical writing as a central character.

Throughout this critical history, Longo describes technical writing textbooks as "cultural artifacts" to be interpreted in the context of broad cultural formations. Her historical strategy here follows Foucault's example in *The Order of Things*, where he connects seemingly disparate cultural domains as parts of historic epistemes. Thus, technical writing textbooks are interpreted as elements in widely disseminated cultural formations. This critical strategy allows Longo to avoid the mistake of misreading historical artifacts such as textbooks as embarrassingly naive, unenlightened, or corrupt; situated within a network of cultural relations, textbooks help explore the cultural logics at play in the struggle of knowledge and power.

This understanding of textbooks as cultural artifacts that circulate within widely disseminated cultural formations is a corrective to what Longo describes as a failure of much contemporary social constructionist work in rhetoric. She reviews recent scholarship to make the argument that the field has only recently begun to develop an adequate critique of technical writing as a cultural process that legitimizes knowledge. She finds that scholars have largely failed to connect the ways technical writing functions to authorize knowledge to the institutional, material, and ideological sources of cultural power that underwrite this legitimation project. She argues—correctly, I think—that scholarship has truncated its notion of the social to focus on single institutions or groups, effectively precluding the possibility of larger cultural critique. Scholarship that reifies narrowly identified discourse communities severs the lines along which power and cultural capital reproduce themselves. Thus, many of the studies she discusses stop short of reading technical writing as part of an extended network of cultural capital and power. Similarly, Longo argues that the notions of culture inherent in the social constructionist movement are too restricted to comprehend the "ethico-political relations of power and knowledge" that she wants to trace. Her criticism of the limitations of the social constructionist movement in technical and professional writing leads Longo to call for more critical work that will "break openings in the wall of our power/knowledge system" and provide possibilities for altering our contemporary research and pedagogical practices.

As much as I appreciate Longo's treatment of textbooks as cultural artifacts and think that her critical appraisal of technical writing and recent scholarship is both accurate and overdue, I have some concerns about her
historiographic method. The consistency with which Longo ties technical writing to emerging technologies and material developments lends her tale of technological determinism a seeming ineluctability. In the same way that she outlines the influence of Darwinian evolutionary theory on Huxley and describes the way social Darwinism justified the model of economic and cultural domination in which technical writing is implicated, her own narrative seems shaped by a Darwinian master trope. The narrative of apparent inevitability recounts a history driven by a functional logic that leaves little room for alternative developments. Because her consistent theme is the control of nature and of humanity through technology and engineered systems mediated by technical writing, her narrative begins to sound a lot like Heidegger's narrative of Gestell, the enframing of humanity in an ineluctable technological imperialism. The critical position outlined in Spurious Coin sounds somewhat like that of the Frankfurt school; and, like that tradition, her narrative leaves little space for alternate histories, for resistance, for change. Perhaps one source of this seamless narrative is the way textbooks figure in this history. Longo's strategy of interpreting textbooks as cultural artifacts is a useful and innovative idea, but the textbooks are completed texts. As finished documents, the textbooks appear as codifications or social rules that stabilize the messy reality of practice. Focus on textbooks as representative of Foucauldian epistemes does not allow this history to articulate the fine-grain details that cultural studies has taught us are the terrain of non-dominant practices. Thus, her desire to write a critical history of scientific and technological development, management, and control, tends to omit the mundane reality of practice that might make alternatives seem more possible and viable.

To be fair to the author of a careful history, I should point out that Longo anticipates these sorts of issues in her conclusion, where she acknowledges that the "idea of textbooks as compilations of knowledge was explored in a cursory fashion here." She acknowledges that textbooks are "retrospective codifications of dominant professional practices." Historiography is a difficult and contested project, and any analysis of cultural artifacts such as textbooks will be caught in the play between stabilizing notions of the representative or dominant cultural position and the destabilizing force of everyday practices that escape or contest institutional or disciplinary regulation. I think that Longo's book, especially with her concluding invitation to critique, is a fine opportunity to open these issues for discussion in graduate seminars in ways that lead us not only to do history, but to theorize history as a disciplinary project.
Spurious Coin is history with an attitude, theory with a big historical stick—or perhaps history as cultural critique. Not all readers will be comfortable with Longo’s openly theorized understanding of technical writing as an ethical, political, ideological project, or with her reading of our disciplinary history as inadequately critical. For my part, I think this is an extremely valuable study that nicely combines history with cultural critique. It articulates a number of contemporary critical ideas and grounds them in concrete disciplinary examples. Spurious Coin should be required reading not only in all programs in technical and professional communication, but for scholars who are forging new alliances between rhetorical theory and cultural studies.

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