

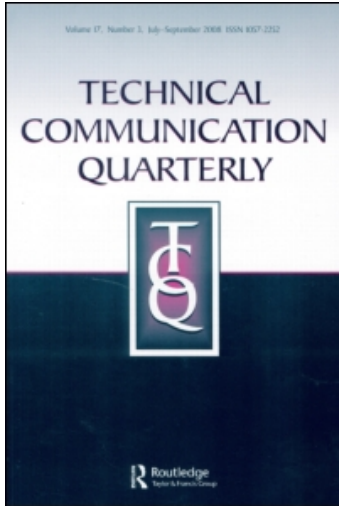
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The Language of Work: Technical Communication at Lukens Steel, 1810 to 1925. By Carol Siri Johnson

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BOOK REVIEWS

The Language of Work: Technical Communication at Lukens Steel, 1810 to 1925. Carol Siri Johnson. Amityville, NY: Baywood, 2009. 200 pp.

Reviewed by Ken Baake
Texas Tech University

If technical communication is one of those activities best explained through examples, then those seeking to understand the field and its origins will be well served to read Carol Siri Johnson's historical study of the first 115 years of writing at Lukens Steel in eastern Pennsylvania. In *The Language of Work*, Johnson makes a solid case that the letters, drawings, and reports of a company mirrored its progression from a family craft shop using simple processes to a full-fledged industrial plant requiring elaborate networks of people and work activities. Lukens evolved in the early 19th century from a simple mill where workers pounded iron into sheets that were cut into barrel and wagon wheel hoops to become a large steel-rolling mill by the end of the century. Among other steel products, this mill made ship hulls and the plating for boilers that propelled the steamboat and railroad transportation revolutions. In tandem, technical communication tools at Lukens evolved from primitive quill pens and paper to the typewriter and document templates.

Eventually, at urging from management, all the supervisors on the floor at Lukens documented their work, and managers kept transcriptions of meetings, "leaving a rich written and even verbal record of their technological interactions" (p. 180). Drawing on archival documents from the Lukens family as well as scores of other historical documents, *The Language of Work* tracks this evolution in a way that holds the attention of technical communication scholars and general readers alike. With nearly 100 illustrations of company reports, journals, letters, and ledger books along with maps and images of the company and its workers, this book is a delight to read and savor. Also welcome is a glossary of terms related to steel and iron metallurgy to help the general reader follow the text.

Johnson shows us that the birth of technical communication as a system of reproducing and disseminating the same information for many people can be dated to around 1910, when carbon paper was invented. With it came a new class of worker at Lukens—the secretary or "midwives of technical communication" (p. 163) whose readable typing replaced the cryptic handwriting of plant owners and

thereby transformed a somewhat mysterious guild of experts into an industry that could be, and was, reproduced elsewhere. This is a key finding from Johnson's book—that technical communication is ever a process of demystifying the occult, whether it be the tensile strength of metals or a method for tracking workers. Another lesson that applies to today's technical communicators, who might feel buried in text, is that improvements in communication technology and systems—such as those allowing a boss to dictate sentences to typing secretaries—allowed for increased length of letters (p. 112). Johnson resists the urge to comment on whether the possibility of longer documents would be a blessing or a curse for Lukens, or for technical communicators today.

Technical writing arose as a system of basic record keeping, becoming one in which “large numbers of people from different groups began using writing as a method of problem solving and creating new technology” (p. 15). Thus, Johnson writes that the archival technical communication documents from Lukens are nothing less than “the visual and verbal remains” of complex social interactions among managers and workers attempting to address production challenges (p. 1). Among the lessons to be drawn from Johnson's book is that these changes in communication technology and the increasing sophistication of the reports and other texts at Lukens were no less dramatic than the changes from printed to electronic media that many of today's technical communicators and scholars have seen in their lifetimes.

Johnson begins, appropriately, by situating her study of technical communication at Lukens Steel in the theory and history of the field and in the historical or “archaeological” method she uses to uncover that history at her site. The book traces the company's history from its founding in 1810 until 1925—a period that included the U.S. Civil War and World War I, both of which boosted company profits. This period saw dramatic changes in technology and management systems. Early in the book, Johnson draws from Foucault to describe technical communication as the process of transforming collective knowledge into documents, a process distinct from literature and its goal of memorializing individual consciousness (p. 5). Citing other historians of technical and scientific communication such as Tebeaux, Brockmann, and Bazerman, the author of *The Language of Work* quickly dispenses with the myth that innovation—whether in technology or in its documentation—is the result of individual genius. Instead, innovation is borne from many minds constantly communicating (p. 7). Innovation emerges from a web of distributed knowledge, with technical documents the catalyst for that emergence.

Several of the individuals working in the emergent days of metallurgy and iron works, and their documents, are presented early in the book. For instance, Byrd's 18th-century study of Chiswell's iron works in Virginia revealed the limited reach of crafts that depended solely on individual genius, where knowledge was transferred only when workers moved (p. 18). Knowledge became more portable as

early as the 17th century, Johnson shows, when ironworkers began keeping “furnace journals” and other record books of technical operating details, such as weather and furnace performance, as well as management details, such as “fights, injuries, and drunkenness” of workers (p. 21). Early in the book, Johnson reveals that technical communication has always documented both machinery and workers. She also shows how important government policy making would become in inspiring technical documentation through reports of each state’s geology and natural resources. Invariably, as metalworking grew in complexity and captured government interest, it also led to the formation of trade groups and professional associations that published instructional books and newspapers in the early 19th century.

Lukens Steel is a microcosm of the 19th-century Industrial Revolution in the United States, but it is also the story of personalities and their inevitable conflicts in a family business. Johnson notes that one of the most unique features of the company’s history is the person of Rebecca Lukens, who took over the company 15 years after it was founded when her husband died. She was pregnant at the time, but as Johnson tells us, “Family and work were one to Rebecca Lukens . . . [and] to the generations that followed as well” (p. 38). When she died, Rebecca Lukens was the wealthiest woman in Chester County, home of the rolling mill. She had successfully passed the business on to son-in-law Dr. Charles Huston, whose two sons ran the business after the Civil War. As is often the case in family businesses, the brothers frequently quarreled over business strategy, with one brother running the manufacturing side and the other the sales and main office.

Johnson’s account of this rift is fascinating and alone could be the subject of an intriguing biography or novel of two men caught up in the Industrial Revolution and their own family and social dramas set amidst it. The fraternal conflict took its toll on the company in the early 20th century, as Johnson notes, because communication broke down, fomenting haphazard growth where “each department operated on its own, as an individual fiefdom” (p. 156). Lukens hired consultants several times during that troubled period, and they attempted to clear up the administrative clutter by means of their own technical documents—organizational charts drawn up to clarify lines of communication. But even this most quintessential graphic document of technical communication could not solve the basic personality conflicts at the top, Johnson reports, providing a lesson to technical communicators about the limitations of their craft. Technical communication will only be as good as the people it guides.

Nonetheless, it was “an explosion of technical communication” that accompanied the company’s years of growth (p. 107). At first, the technical communication technology was “ungainly,” Johnson writes, as exemplified by a 700-page letterpress book required to hold up to 2 years’ worth of outgoing correspondence (p. 72). The process in the mid-19th century of recording copies of handwritten letters

involved a large vise that was screwed down onto pages in order to impress a copy on a tissue sheet. Johnson observes that such letters formed the primary means of technical communication throughout the company's history; she draws a parallel to technical communication today where the primary medium of delivery is e-mail—not reports, manuals, and other documents that usually receive more attention in the teaching of technical communication.

Lukens, of course, generated many of these other interesting documents, including “car record books” that kept track of inventory arriving by rail. Other records held details of what went on at each furnace—the daily output, its total tonnage, and compliance against a list of 49 possible product defects. Testing of the metal produced was a main source of technical documents at Lukens Steel, especially in the mid-19th century when steamboat and railroad explosions cast a pall over America's transportation revolution. The science of metallurgy was inexact in these years, Johnson notes:

Thus, the producers of rolled iron and steel did not know exactly how to do it. They did not fully understand the physics, chemistry, or the engineering, and therefore they were continually communicating about testing, results, successes, and failures. Detailed technical communication was essential to the success of the plant. (p. 110)

A lot of this technical communication was devoted to trying to pin down knowledge by creating industry standards for strength of the metal and then codifying tests to determine whether the metal met those standards. After 1900, Lukens was involved in four types of testing activities that required extensive documentation: testing of equipment, testing of the manufacturing process, scientific tests of steel tensile strength, and meetings with industry societies to establish standards. Two intriguing illustrations provided by Johnson show draft typed documents of standards for steam boilers, with reviewer comments written in pen in the margin and a paragraph cut and pasted into the text. This cut-and-paste job will remind older writers of the original meaning of the term, and it offers a visual example to show to younger students how editing was done before computers.

If I could ask anything of Johnson in this book, it would be to give me more details about how rolling steel is made. A narrative of the process accompanied by a flow chart would have been a nice addition, although this information is easily accessible via Internet searches. Likewise, more discussion of the personalities behind the company and their conflicts would add a biographical flavor to what is a superb analytical text. Perhaps even a vignette of a ship or locomotive that used Lukens boiler plating would offer the reader an extended example of how technical writing accompanies production of something seemingly as mundane as the access manhole to a railroad boiler, which then could power a locomotive carrying troops to a Civil War engagement. Finally, a short epilogue of the company's his-

tory after the Huston brothers resigned in 1925 until it was sold in 1997 would have tied up loose ends for the reader.

These few suggestions reveal my hunger for more of this story rather than any criticism of the book. It is a joy to read for technical communicators interested in a small but significant part of the field's history. Technical communication research scholars Kynell and Seely (2002) in their essay, "Historical Methods for Technical Communication," asserted that "learning to read historical documents critically and ask questions of the sources is a basic skill" (p. 74). This is a skill that Johnson has more than mastered in *The Language of Work*. Her interrogation of the archives of Lukens Steel yields nuggets of insight for the field; it would make this book a compelling addition to any graduate or undergraduate course in the history and foundations of technical communication.

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***Communicative Practices in Workplaces and the Professions: Cultural Perspectives on the Regulation of Discourse and Organizations.* Edited by Mark Zachry and Charlotte Thralls. Amityville, NY: Baywood, 2008. 263 pp.**

Reviewed by Joseph A. Dawson
East Carolina University

In *Communicative Practices in Workplaces and the Professions*, Zachry and Thralls assemble a collection of works from contributors in different disciplines to create a broad understanding of the concept of regulation in workplace communicative practices. The editors' goal was to create a set of terms that can be used to discuss regulation across different fields. With varying theoretical and methodological approaches, the contributors from fields such as professional communication, cultural studies, and organizational studies offer readers a broad set of approaches to the topic. The result is an effective text that serves upper-level graduate students and researchers interested in the regulation of discourse in the workplace by defining regulation, providing examples of the regulation of workplace communication that illustrate the collection's theoretical stance, and exploring diverse research methods that can be applied to the study of regulation.

When many people think of regulation, they think of "rule making by a governmental or administrative body" (p. vi). Although external factors such as require-