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What Can History Teach Us about Technical Communication?

SUMMARY

This chapter explores how taking a historical perspective can be helpful for understanding the contexts in which technical communicators make decisions about document development. Connections between history and organizational culture are introduced as one approach for understanding why some things are considered appropriate or inappropriate in a particular workplace, and how these values can change over time. In order to honor the rich, diverse, and unfinished history of our profession, we need to know not only the history of a document, the people who created it, and its current usage, but also the role we play as technical communicators in the social practices of science, technology, and business.

INTRODUCTION

If you have ever visited someone in the hospital or been in the hospital yourself, you have seen all the paperwork involved in keeping complete medical records. This record keeping is extensive in regular clinical units and even more so in intensive care units (ICUs), where medical care is more complicated. Nurses, doctors, and other hospital staff complete medical forms as a routine part of their jobs. But where do these forms and other medical paperwork come from? Who develops routine medical paperwork and the systems that regulate it? What roles do organizational history and institutional culture play in the creation and use of these documents?

Rita, a new technical communicator, finds herself asking these questions and more. A few weeks ago, she was hired by a hospital to assist with their technical communication tasks, and now she has been assigned to work with staff in the ICU to develop a protocol document for both monitoring patients' blood glucose levels and treating patients when these levels get too high. Specifically, Rita must revise the existing ICU protocol and clarify the steps nurses should take to monitor glucose levels and decide when to administer insulin. While considering how she might improve the document, Rita realizes she needs to ask a number of questions

about the existing protocol, like how it came into being and how it is used. Who initially decided that the ICU needed an insulin protocol, and when did they? Who was involved in developing the document? What important decisions were made in that development, and how were they made? How do ICU nurses use the protocol, and what improvements might they suggest? These are just some of the questions Rita must ask in order to understand the existing protocol and how she can improve it. As you can see, these questions focus on the history of the existing document in order to revise it and improve how people use it to care for patients.

Technical communicators create scientific, technical, and business documents that not only convey information but also create systems of order that influence the routine practices of hospitals and clinics. These technical documents help medical professionals do their job by helping them understand how to handle the tasks in front of them. In large part, technical communicators compose and design these documents based on their understanding of what worked well in the past—on their knowledge of institutional and organizational history. In fact, whether you're an engineer writing a user manual or a technical communication professional creating that same manual, you will rely largely on your historical knowledge of your organization and your specific situation to decide what to include and exclude.

Assembling a history, even an organizational history, is more complex than merely a chronological cataloging of important events and dates, because history involves difficult questions: Which events are deemed important and thus worthy of remembering? Who decides this, and how will these events be recorded? From whose perspective will these events—these stories—be told? Your telling of a historical event would not be the same as another person's, even if you were both participants. Though even a simple recounting of past occurrences can be complicated, people still write histories, because historical accounts provide valuable information for understanding present and future situations. Making use of history involves more than knowing what happened: one must also consider the cultural, social, and individual forces that shaped those events—the forces that have given us one story instead of another.

In this chapter, we explore what history, specifically organizational history, can teach us about technical communication practice by illustrating important ways history influences the daily workplace practices of technical communicators. First, we review some of the significant research into the history of our field to discuss technical communication as a practice that orders scientific, technical, and business knowledge. Second, we turn to the research literature in organizational acculturation to examine

how organizational history operates as a contemporary tool of socialization, shaping writers' and designers' communication practices. Then, we introduce a three-part heuristic designed to help new and experienced technical communicators explore the role history plays in workplace communication. The questions in our heuristic ask technical communicators to reflect on the ways historical practices shape our ideas about our work, our values involving the profession, and our identities as communicators. Lastly, we offer an extended example of one new technical communicator's work to create a very specialized technical document—a medical protocol instructing health-care workers on the use of insulin in intensive care settings.

LITERATURE REVIEW

Though much emphasis is placed on the contemporary workplace, the field of technical communication has a rich and vital history that can provide productive insights into the way communication works today. In particular, understanding past practices offers a better awareness of the ways technical communicators display, shape, and, more importantly, order scientific and technical knowledge. Our literature review is organized in two sections to correspond to our chapter's two main contributions. First, we explore how technical communication can be understood as a process of ordering scientific and technical knowledge and practice. To do so, we turn to research in technical communication history that recovers the discipline's lost historical figures or emphasizes the importance of history for understanding current practices. Second, we show how technical communication practices and documents operate as a socializing force in organizational cultures. That is, technical documents shape our practices, actions, and viewpoints.

HISTORY, SYSTEMS OF ORDER, AND TECHNICAL COMMUNICATION
In *The Order of Things* (1994), philosopher Michel Foucault understands history, particularly the history of Western knowledge, as a complex process of ordering. Foucault seeks to better understand how "our [Western] culture has made manifest the existence of order" (xxi), which involves two aspects: (1) a process of creation, of making categories and systems of order; and (2) a state of being ordered. Though we often understand this ordering as a logical process, we are actually the ones who create the definitions and systems of classification that seem so inevitable. Think, for example, of how you save files to your computer. Think of all the decisions you make about which documents go in which folder, the names of those folders, the way those folders are stored, and the number of folders

to use. All of this represents a process of ordering, of creating order and finding what (at least to you) seems an intuitive system. In the work we do to create order, we often fail to acknowledge the historical and cultural influences that shape our systems of order—the forces that have made the world what it is today.

Many historical studies of technical communication describe the field as practices of ordering, of naming and shaping scientific and technical knowledge. This historical research often emphasizes the discipline's European and North American emergence in relation to science, engineering, and business. Hoping to uncover a more complete picture of the past, these researchers show how technical communication works hand in hand with science and technology. In fact, they contend that technical communication is the means through which scientific and technological ideas and processes are communicated to both general and expert publics.

For example, Teresa Kynell and Michael Moran's *Three Keys to the Past* (1999), one of the first collections on the history of technical communication, initiated this historical research, which often aims at one of three goals: (1) to recover the discipline's lost historical figures, (2) to recontextualize the significance of existing figures within the field, or (3) to stress the importance of history for understanding contemporary practices. In this collection, James Zappen's (1999) study of Francis Bacon's contribution to the history of technical communication, R. John Brockmann's (1999) essay on early-nineteenth-century American inventor Oliver Evans, and Charles Bazerman's (1999) work on Joseph Priestley make plain the role engineers and scientists played in the development of technical communication, specifically their use of sophisticated rhetorical techniques to accomplish their professional goals. This spotlight on overlooked moments in our field's history demonstrates how technical communication pervades all aspects of science and industry. For example, Tolbert's (2001) work recognizes Nicolas-Claude Fabri de Peiresc's attempts to "determine terrestrial longitude" while keeping the Church's blessing; Di Renzo's (2000) study of Marcus Tullius Tiro's roles as Cicero's confidante, secretary, and archivist demonstrates how our history is embroiled in the controversies of the past. Peter Hager and Ronald Nelson's (1993) study of Chaucer's *Treatise on the Astrolabe*, and Bernadette Longo's (2000a) look at Vitruvius's *De Architectura* demonstrate the textual elegance and rhetorical savvy of these works as examples of technical communication. Such research unearths the ways technical communication's past has been shaped by the contribution of historical figures commonly appreciated as scientists, engineers, literary artists, and politicians. By emphasizing their work as communicators of scientific knowledge, these studies underscore technical

communication's role in shaping scientific information and influencing Western science and technology.

Others have shown how technical communication functions as a unique discourse of science, engineering, and industry. For example, Elizabeth Tebeaux's *Emergence of a Tradition* (1997) focuses on English Renaissance technical texts and genres and traces the emergence of technical communication (in the English-speaking world) as a collection of texts, namely manuals and how-to books, and as a set of conventions, such as the use of page layout, audience awareness, and visual illustrations. Tebeaux explains the origins of verbal, textual, and rhetorical elements that have come to dominate technical communication practice and pedagogy. Arguably, the work of Tebeaux and Michael Moran, beginning with his rhetorical analysis of the 1590 map of Virginia, allowed others to take seriously the supposedly mundane history of technical documents by proving their relevance to contemporary practice (Moran 1999, 2002, 2003). These studies strengthen connections between our field and the history of ideas, illustrating technical communication's involvement in the creation, promotion, and deployment of scientific and technical knowledge.¹

Because of this connection to the history of business, science, medicine, and technology, technical communication has played a powerful role in shaping scientific knowledge. Bernadette Longo's (2000b) cultural history, *Spurious Goins*, focuses on the ways this powerful role has gone unnoticed. For example, technical communicators, scientists, and engineers have mistaken technical documents for uncomplicated texts used only to contain and transport technical knowledge. As a result, they have often failed to appreciate the way technical documents shape knowledge and practice. Working as a control mechanism within organizations, technical communication functions to authorize whose knowledge is, and is not, valued (Longo 2000b).

Technical communicators, then, use documents to order knowledge, shape information, and make implicit and explicit arguments about what is to be valued. In fact, technical communication does not simply influence social practices—encouraging certain ways of being while discouraging others—but actively develops social practices. For example, Miles A. Kimball's (2006, 353) historical analysis of Charles Booth's maps of London poverty from 1889 to 1902 investigates the "cultural basis" of such technical communication concepts as "transparency and clarity in information graphics." By reading Booth's maps back into their original context, Kimball argues that the preference for transparency in visual displays "arises from a broader visual culture," which influences readers' expectations (355). These particular visual texts were created in response to

London poverty and reflect the contemporary social and cultural attitudes that represented poverty as an easily corrected ill. Carol Siri Johnson's (2006) analysis of the letters written by an eighteenth-century Scottish engineer brings to light the "prediscursive" tradition of the iron-making industry. By focusing on the development of the industry from an oral and apprenticeship-based tradition (prediscursive) to a text-based one, Johnson explores how one important area of technical communication flourished through a network of social connections that created and shaped technical knowledge even before this knowledge was set down in writing. Such work illustrates how technical communication has been implicated in larger cultural contexts and debates for centuries, intimately connecting our field to the historical circumstances that surround it. This is as true today as it was yesterday, as it will be tomorrow. This historical influence can be viewed from the macrolevel of histories of science and technology to the microlevel of organizational and institutional contexts where history still matters and where technical communication still operates as a system of daily ordering.²

ORGANIZATIONAL HISTORY, SOCIALIZATION, AND TECHNICAL DOCUMENTS

In *How Institutions Think*, anthropologist Mary Douglas (1986) investigates the role organizations and institutions play in the thoughts and actions of individual members. Douglas asserts that institutions work by offering members the necessary frameworks, systems of thought, even "analogies with which to explore" and "justify the naturalness and reasonableness" of the institution's rules and ways of operating (112). These analogies, which underpin that institutional culture, shape the way members view the larger group, the way they view themselves, and the types of practices they engage in: "[the institution] provides the categories of their thought, sets the terms for self-knowledge, and fixes identities" (12). To become a full-fledged member of an organization, or workplace, we come to accept a certain view of our work and ourselves, a view mediated in large part by institutional history and organizational culture. This history and culture, which is rooted in the past but plays out in the present, determines our decisions on the job. Both the tougher choices and the easier ones we make as technical communicators are constrained by workplace history and culture: "An answer is only seen to be the right one if it sustains the institutional thinking that is already in the minds of individuals as they try to decide" (Douglas 1986, 4). We need only remember the space shuttle *Challenger* disaster, and other failures of science and technology that involved communication, to understand the powerful force of organi-

zational history in shaping current decisions and actions (see Dombroski 1991; Winsor 1990).

But how do we become members of an institution to the extent that it shapes our thinking and actions? How do we learn to "fit into" an organization? And how are the historical practices of that organization still playing out in the present? These questions have been the concern of management research for decades (see Argyris 1964; Cable and Judge 1997). Much of this research has focused on how people learn salient information about an organization's culture in order to know what is acceptable or unacceptable behavior in that culture—in other words, how they become socialized into that organization (see Van Maanen 1976; Trice and Beyer 1993). An assumption underpinning this research is that people new to an organization want to succeed. One way of doing a job well is to know how things are done in that workplace. After working at a job for some time, we seem to *know* the right and wrong way to do things in that setting. But this knowledge of acceptable and unacceptable practices comes through direct and indirect processes of acculturation.

Even after working at a job for a while, situations arise in which the right or acceptable course of action is unclear. How do we know then which actions and practices will be successful? Meryl Reis Louis (1980) argues that individuals learn how to succeed on the job by first learning about the organization through socialization. She describes socialization into an organization as "the process by which an individual comes to appreciate the values, abilities, expected behaviors, and social knowledge essential for assuming an organizational role and for participating as an organizational member" (229). This process of socialization is not merely a process of learning the expected tasks, because each "role change" a worker must make involves an adjustment to that socialization process (230). Thus, a worker's socialization is never complete. As we move into a new position, we find a new culture to learn. And as new information or research changes how a job is done, this new knowledge can change an organization's ideas about acceptable and unacceptable actions.

An organization's culture is a result of its members' previous decisions and actions. The values and background knowledge embedded in that culture are the historical artifacts of those decisions and actions. Some values and knowledge stem from successful decisions people want to emulate; others stem from unsuccessful decisions that provide cautionary tales of action to avoid. Whether as good examples to emulate or bad decisions to avoid, an organization's history lives in its current culture and is communicated through its stories and documents. Lee Odell (1985, 250) finds that this culture "influences 'practically everything' in the life

of an organization." On the job, technical communicators get work done by internalizing "values, attitudes, knowledge, and ways of acting that are shared by other members of the organization" (250). In fact, communication is often the tool people use to internalize organizational culture. Jean Ann Lutz (1989, 114) argues that communication is "the primary tool through which members participate in an organization, through which nonmembers learn about an organization, and through which a corporation's climate and image are codified." By understanding that an organization's culture is communicated through various media, including texts, verbal stories, and the design of physical spaces, we can appreciate the role workplace documents play in socializing people on the job and standardizing their actions.

Documents serve to socialize technical communicators because communicators look to prior documents for examples of how to complete current tasks; we look to earlier documents to learn how to develop future ones. Lee Clark Johns (1989, 153) describes this colorfully by saying that the "file cabinet has a sex life; it reproduces itself." The file cabinet stores the historical information that we reproduce when we design those future technical documents. In the example of the ICU insulin protocol, when we look at a past document to understand a current writing situation, we are using historical knowledge to make decisions about our current practices. This use of past documents transmits existing information and organizational culture into current documents and practices. It is as if technical communication is one way of sending information from a past sender to a future receiver. But the situation is far more complex.

David Dobrin (1983, 242) famously defined technical communication as "writing that accommodates technology to the user." One interpretation of this model suggests that the technical communicator conveys only appropriate technical information to a user, without the ability to use historical understanding to impact the information or the culture of the communication. As Jennifer Daryl Slack, David James Miller, and Jeffrey Doak (2003, 178) argue, this simple understanding leaves the technical communicator only the ability to "transmit the sender's meaning as a perfectly executed message," with no power to influence or change the meaning or cultural context of the message. If the technical communicator is merely a conduit—a neutral channel through which information passes—then the communicator becomes an impotent worker, whose agency is denied except in cases of failure. Slack, Miller, and Doak argue that a more empowered way to think about the technical communicator's role is as someone who articulates meaning, using an understanding of

historical and social circumstances to craft documents that participate in knowledge-making processes.

In this view, technical communicators must know what came before and use that information to either recreate the past or perform different actions in response to new information and circumstances. Being successful as an articulator of meaning relies on the communicator first being successfully socialized into the organization—understanding what is currently acceptable and unacceptable based on historical knowledge, and exercising good judgment regarding what needs to be changed and how to effect that change within the organization's current culture. This socialization into an organization's culture is communicated largely through actual documents and practices of the technical communication workplace. These technical documents themselves often exert an influence on individuals' communication decisions and actions.

Again, an organization's history lives in its current culture and is communicated through its documents, which most often resemble earlier documents. A memorandum written today will have similar format and content structure as earlier memos—even though most memos today will be sent as e-mail. Documents constituting a particular genre embody conventional structural elements that help readers anticipate the kinds of information a document will contain and its location and format. Charles Bazerman (1988, 62) describes a genre as "a social construct that regularizes communication, interaction, and regulations"; the "formal features" of a genre are the "solution to a problem in social interaction." That is, a document's regularized verbal, visual, and textual features help that document solve a social problem; this document can be understood as having a kind of agency in a social interaction. JoAnne Yates and Wanda Orlikowski (1992, 302) find that "genres are enacted through rules, which associate appropriate elements of form and substance with certain recurrent situations," thus giving these documents the ability to shape an individual's actions within an organization. A genre is especially influential when considered in relation to other professional genres that shape workplace communication. For example, Amy Devitt (1991) shows how various genres of accounting documents (memoranda, letters, tax reviews, research reports, etc.) work together to regulate professional practices in that field. These genre networks of professional documents are based on historical knowledge and social relationships that regulate future document decisions, influencing technical communicators' decisions about what is appropriate in a current situation.

Recent studies of medical technical communication have investigated

the genre of medical forms as instruments that reflect larger institutional cultures and shape the practices of members. Roger Munger's (2000) study of the evolution of emergency medical services run reports finds that (1) changes in the forms themselves reflect changes in the ways practitioners used the forms and (2) medical forms created for multiple users offer insights into the status, authority, and power of various users. Susan Popham's (2005) examination of medical forms analyzes common paperwork of medicine (such as diagnosis, insurance, and billing forms), in order to understand how the fields of science and business are constructed and represented through these documents that influence patient care. These studies illustrate how social practice and disciplinary knowledge are represented in technical documents. In a concrete way, historical knowledge and judgments are reflected in a document's visual and verbal conventions, which serve to address social needs and relationships. These documents are artifacts shaped by historical circumstances; thus, they direct human action and offer a window into that action.

In sum, the history of technical communication is a history of ordering knowledge, of socializing communicators into certain cultures of writing, of creating technical documents that reveal the past and shape the present. To prove this point, we have made several claims about technical communication. First, technical communication operates as a system of ordering that shapes and produces technological, scientific, and often business knowledge through the creation and use of texts. Because all forms of communication are influenced by their contexts and circumstances, technical communication practices are embedded in historical and cultural processes that influence what *counts* as technical communication, as well as the *consequences* of that communication. Second, these processes of ordering often take the form of organizational culture or institutional history, which continue to influence the contemporary workplace environment. Third, through this continued influence of the past on the present, technical communication practices and documents play a socializing role; they encourage or value certain practices while discouraging or complicating others. And finally, the traces of this history, and this socializing function, can be witnessed in the actual documents of a workplace.

LEARNING FROM TECHNICAL COMMUNICATION HISTORY: A HEURISTIC

How exactly do we learn from our organization's past? What lessons can our local historical context teach us about technical communication more broadly? At this point, we will answer these questions by providing a three-part heuristic for exploring the role history plays in workplace communi-

cation. This heuristic translates our previous discussion into a practical framework for guiding technical communication practice. In particular, these questions will be helpful to technical communicators, novices and experts alike, in two major ways: (1) helping communicators reflect on the greater, present-day significance of their workplace's cultural and organizational history and (2) providing communicators with the "big picture" view of the tasks they perform and the documents they create.

STEP 1: WHAT SYSTEMS OF ORDER DOES MY WORKPLACE CREATE?

When we find ourselves in a workplace, our first question should be, What systems of order does my workplace create? We must know and understand what our company produces or provides as well as the consequences of these products and services. Because technical communication practices work to order scientific, technical, and business knowledge, each technical communicator is involved in this ordering process. That is, we are doing more than simply communicating information by creating technical documents and presentations. If we focus only on the task before us, we may forget and neglect the important cultural and historical role our work plays in shaping and making meaning. The first step, then, is to consider our part in the process by understanding what types of order our specific workplace seeks to create. We can do this by stepping back and thinking more conceptually about our workplace, what it produces, and the consequences of those products and services. And we can do this by talking to our coworkers and clients and thinking critically about the work we do.

STEP 2: HOW DOES THE HISTORY AND CULTURE OF MY WORKPLACE INFLUENCE THIS PROCESS OF ORDERING?

The second step is two-part: (1) consider what larger historical forces and movements directly influence the work you do today and (2) consider how the history and culture of your organization encourage certain actions and discourage others. Technical communication does not happen outside of historical circumstances, but instead is connected and responds to them. The systems of ordering that each workplace initiates are linked to larger historical contexts, which in turn influence that workplace and its practices. The second question asks us to consider the larger historical context and how it shapes the work of that organization. We can discover this by asking historically directed research questions: What is the history of this company? When and why did the company begin making a product or providing a particular service? What cultural or historical influences shaped the making of this company as well as its products and service?

What current cultural, political, and economic influences continue to shape this workplace?

We can answer these questions by turning to our coworkers, bosses, and published material about our workplace and profession (from newspapers, books, and articles). Remember, institutional histories are still alive in the organizational culture of a workplace. These histories shape the values, environment, and practices—or culture—of contemporary technical communication. And when we learn to succeed in a particular workplace, we absorb the culture of that place and become socialized in particular workplace practices. This socialization operates as a perceptual lens, allowing us to see the work we do through the lens of that organization's history. In order to operate as ethical communicators, we must not forget how the history and culture of a workplace influence our decisions.

STEP 3: HOW WILL MY DECISIONS IN THIS WORKPLACE SHAPE AND ORDER THE ACTIONS OF OTHERS?

Just as technical communication cannot be understood as standing outside of history, the technical communicator cannot be understood as standing outside of an organization's culture. Our socialization in the culture of a particular workplace shapes the way we understand our work, and also the work itself. The texts we create communicate processes of ordering to others: telling the users what to do, how to do it, and what to avoid doing. In these documents, we pass along this user-centered information as well as the values, assumptions, and beliefs of our workplace. With every document we create and every presentation we give, we communicate the organizational culture of our workplace.

As technical communicators, we are not passive conduits for transmitting technical information, so we must reflect on the consequences our actions have for other people. Specifically, we must consider how our documents shape the practices and ideas of the user. The final question is one we can ask ourselves whenever we tackle a new task, join a new team, or compose a new document. Asking this question means stepping back and considering the larger consequences of our work. What am I composing, designing, or presenting? How will my work influence, constrain, or make possible the actions of others?

MEDICAL TECHNICAL COMMUNICATION AND ICU PROTOCOLS

To illustrate the utility of this heuristic framework for technical communication, we offer an extended example of one communicator at work. Here we return to Rita and her hospital workplace to explore how one document—the insulin protocol used in ICUs—makes previous knowledge

tangible in people's actions. When Rita started working at the hospital, the ICU staff was already using an insulin protocol they had developed. They realized that nurses were having questions about how to measure blood glucose and administer insulin to their patients. So the medical director of the ICU determined that they needed to revise the protocol and asked Rita to help. When Rita got this assignment, she did not know what a protocol document was, so she first had to look into the history of this type of document, both in general and in the context of this hospital. To do this, she talked with her coworkers and turned to medical research on the topic.

Protocols are used in medical settings to convey medical information and regulate the patient care delivered by clinical professionals. Medical protocols are forms of scientific and technical communication, specifically instructional documents, which convey patient-care directions for use by medical professionals in clinical contexts. In these documents, medical knowledge is presented through both visual conventions and verbal text, often as flowcharts or step-by-step directives, which nurses, doctors, and other health-care workers use to regulate patient care. Through her research, Rita learned that the purpose of protocols is to “reduce inappropriate variations in clinical care, minimize harm, promote cost effective practice, and produce optimal health outcomes for patients” (Steering Committee 2004, 874). Protocols function more like standing orders than recommendations, because they “authorize nurses and pharmacists to administer [treatments] according to an institution- or physician-approved protocol without a physician's exam” (CDC 2000). A clinical protocol, then, authorizes a specific set of patient-care actions to be carried out by qualified nurses, pharmacists, or technicians without a doctor's orders for that individual patient. Though these protocols take different forms, from “elaborately designed” charts to a list of “general recommendations,” they all have two features in common: (1) they are intended to lead medical professionals through a sequence of events, and (2) they are inspired by (if not always specifically conforming to) medical research findings (Berg 1997, 108).

WHAT SYSTEMS OF ORDER DOES MY WORKPLACE CREATE?

Then Rita began looking into how the current insulin protocol had been developed. She found that the ICU medical director had learned of a research study showing improved patient outcomes when blood glucose was monitored and insulin administered using a different procedure than was standard medical practice for most hospitals. This medical director wanted to implement those research findings in clinical practice by de-

veloping a protocol based on those findings, one used to monitor blood glucose and administer insulin in his ICU. The medical director formed a committee of people from different areas of the hospital—pharmacy, nursing, the business office—to look at the research and translate its findings into guidelines for patient care in the form of a protocol. By creating this document, the committee standardized and ordered one area of medical practice with the goal of improving patient care and outcomes. It was important for Rita to know what prompted the creation of the existing document, who had been involved with its development, what they considered important and unimportant as they developed the protocol, and how this document fits into and orders medical practices.

Rita found that after using the existing protocol for almost a year, the staff often had questions about how to carry out the procedures because of the protocol's poor design. They sometimes did not monitor a patient's blood glucose at the right time or administer insulin according to the protocol because the information was not presented in a way that nurses could quickly understand in the hectic ICU setting. Sometimes the sequence of events as set out in the protocol did not happen. So to improve how ICU staff followed these guidelines, the medical director decided to bring in a technical communicator to redesign the protocol.

Once Rita understood the history of the existing protocol, she needed to find out more background on the research the medical director used and the purpose of protocols within the larger medical context. She learned that the standards of practice in the existing protocol were based on research findings of a clinical trial published in 2001 in a widely circulated medical journal. This study showed a 42% reduction in mortality in patients that had hyperglycemia managed with a protocol with a glucose target of 80–110 mg/dl (Van den Berghe et al. 2001). Thus, the intentions and content of the existing protocol were based on the (historical) findings of a research study that took place before the document was developed. Because this past knowledge promised greatly improved outcomes for ICU patients, hospital staff considered it important to create a protocol that would translate these research findings into a document that would regulate clinical practices at the bedside.

When Rita looked into why protocols are used in medicine, she found that they are one component of a larger evidence-based medicine (EBM) movement in contemporary health care, which seeks to “eschew unsystematic and ‘intuitive’ methods of individual clinical practice in favor of a more scientifically rigorous approach” (Goldenberg 2006, 2621). EBM seeks to make clinical research and deliberate decision making the foundation of medicine. By structuring patient care according to standardized guide-

lines drawn from clinical research findings and other verifiable evidence, proponents of EBM argue that such practices—based on historical findings—potentially enhance health care by increasing evidence-supported procedures across a number of clinical settings (Berg 1997, 1082). And though EBM has been the subject of ongoing debate, most medical professionals agree that EBM is here to stay (see Berg 1997).

After looking into the history of the existing protocol within a larger context of contemporary health-care practices, Rita understood that the development of the ICU insulin protocol was intended to present research-based medical knowledge both visually and verbally in order to provide step-by-step directions needed to measure blood glucose levels and, if needed, administer insulin to nondiabetic patients. Rita's redesigned protocol will regulate health-care providers' decision-making processes as they ensure that standards of care are achieved. This protocol is one technical document intended to create order by guiding medical practice. As the technical communicator who designs and composes it, Rita is working within that larger system of ordering.

HOW DOES THE HISTORY AND CULTURE OF MY WORKPLACE INFLUENCE THIS PROCESS OF ORDERING?

To understand this particular technical document, the insulin protocol, Rita must understand the larger historical, cultural, and institutional processes that constitute the document. First, as medical paperwork, the existence of the insulin protocol is a result of the history of medical record keeping and documentation. Second, the insulin protocol is part of a larger cultural and professional shift in late-twentieth-century Western medicine, namely EBM. These protocols, then, are created as a response to the EBM movement and represent a manifestation of it. Third, this specific insulin protocol for ICU patients finds its origin in both EBM and the clinical research of Van den Berghe and her team, whose findings became the gold standard of practice for regulating glucose levels in all nondiabetic ICU patients. In creating this technical document, the staff turned to the Van den Berghe et al. (2001) study because it was recognized as authoritative medical knowledge in this area. Here we see the development of a technical document generated from an awareness of the historical context (the Van den Berghe et al. study) and institutional/organization practices (EBM).

In creating this protocol, hospital staff not only translated research findings, but also articulated updated goals for clinical outcomes in the ICU through new practice regulations. In this case, the hospital staff who designed the document performed as technical communicators in order

to implement research findings into standardized professional practices within their organization. (For an analysis of the visual design of protocols and that design's effect on practice, see Longo, Weinert, and Fountain 2007.) This particular protocol was created to order clinical practice by guiding the decisions of medical professionals. Protocols are a form of "regulatory objectivity" approached through "the systematic recourse to the collective production of evidence" (Cambrosio et al. 2006, 189). These technical documents function as a type of objectivity that orders medical practice on agreed-upon evidence, such as clinical research, decision-making committees, and other types of verifiable results. Rather than the individualistic deliberation processes showcased on television shows like *Grey's Anatomy*, this insulin protocol—its creation and use—helps manage medical decision making by offering a procedure to follow. As a technical document, Rita's protocol will order human activity by instructing medical professionals how to act in a given situation.

HOW WILL MY DECISIONS IN THIS WORKPLACE SHAPE AND ORDER THE ACTIONS OF OTHERS?

In creating this medical protocol, one fundamental question Rita must ask is this: How will this document influence, shape, and order the practices of medical professionals? How exactly will this document be used in the ICU? The development and use of a protocol has significant consequences; in the case of ICU patients, it means the proper regulation of blood glucose. Nurses and other medical professionals will use this document (as either a printed text or a computer interface) to care for patients. More than just a set of instructions, this document makes possible a specific medical intervention, and thus the promotion of health and the treatment of illness. And one of the most powerful ways Rita will contribute to this system of ordering is to produce a document that (whether embraced or questioned) allows the work of medicine to take place as smoothly and as responsibly as possible. Rita's document must respond to, and even anticipate, the needs and expectations of medical professionals. And to do this, Rita must understand the scientific and technical practices her document will make possible. This means she must observe the work of medical professionals using the current document and keep that social context and action in mind as she composes the new one. After all, the implementation of Rita's protocol will shape the work of these professionals, telling them what to do, how, and when. And they will accomplish this ordering as part of the historical configurations that merge medical science with the business of health care (see Popham 2005).

The development of protocols represents one way that institutional and

cultural histories shape contemporary technical communication practices. Yet the existence of a protocol does not translate into a transparent system of use. How closely a medical professional follows this document depends on a number of factors that Rita must consider. How is the ICU protocol used now? How do administrators want it to be used? How do nurses feel about protocolized medicine? Whether or not a worker faithfully administers care using the protocol comes down to a number of factors, such as medical training, position of authority, and the organizational culture of Rita's hospital and the ICU ward. Lara Varpio and her research collaborators (2007), in their study of record-keeping practices at an optometry program, found that students learned to keep accurate records not just by following the visual and verbal cues of the forms, but also by understanding the social context. Here, students learned authorized and official social practices, which often created tension between the task and the paperwork, in the actual social contexts of use (also see Schryer, Lingard, and Spafford 2007). Using an insulin protocol effectively and authentically involves a process of socialization through which a worker comes to share the same ideals and values of a medical ward or institution—ideals and values that encourage some actions while discouraging others. Because of this, Rita must also take time to talk with several users to understand their needs and suggestions. After all, Rita's document will contribute to the socialization process that shapes these medical professionals. By creating a document that tells a health-care professional what to do and not to do, Rita is working to fulfill historical and cultural goals of a particular organization, as well as the medical profession more broadly.

CONCLUSION

So what can history teach us about technical communication? The short answer is a great deal more than we realize. The history of technical communication involves both the past historical events of the field and the historical narratives and research written about those events. Our knowledge of our professional past comes to us through the texts of others, specifically the texts of historians and researchers who investigate what used to be. Though this is an important avenue for uncovering past practices, research into the past is not the only way to understand the roles and responsibilities of yesterday's technical communicators. We must also look to our current workplace—where technical communication is composed, designed, and presented. These contemporary practices and the histories from which they developed shape our ideas about our work, our values involving the profession, and our identities as communicators. In order to honor this rich, diverse, and unfinished history of our profession, we need

to know not only the history of a document, the people who created it, and its current usage, but also the role we play in the larger social practices of science, technology, and business.

We can begin to get in touch with the cultural and organizational history of our workplace by asking ourselves these questions: (1) What systems of order does my workplace create? (2) How does the history and culture of my workplace influence this process of ordering? (3) And how will my decisions shape and order the action of others? As we have seen with Rita's work to create an ICU insulin protocol, a rigorous understanding of history can bring that knowledge into greater focus.

DISCUSSION QUESTIONS

1. What does it mean to say that technical communication operates as a system of order and a process of ordering scientific knowledge?
2. How might this chapter's definition of technical communication influence the way we understand the history of science, of technology, of business?
3. Many people are called upon to develop documents that meet the needs of their workplaces, from administrative assistants to software developers. Thus, people who are not technical communicators accomplish a great deal of technical communication. What unique expertise and skills do technical communicators contribute to an organization?
4. What does it mean to say that hospitals and clinics are technical communication workplaces? Does the presence of technical communication in these settings influence your ideas about (1) medicine as a profession and (2) technical communication as a profession? Consider specific examples and scenarios in your response.
5. What does it mean to be socialized into the culture of an organization? How might we understand technical documents as socialization tools?
6. Concerning the decision-making processes of people in workplaces, Mary Douglas (1986, 4) asserts that "an answer is only seen to be the right one if it sustains the institutional thinking that is already in the minds of individuals as they try to decide." What exactly does she mean? Consider the institutions of which you are a member (school or your workplace). How might Douglas's assertion apply to these institutional contexts? Consider scenarios involving school or a workplace where Douglas's ideas ring true. Consider scenarios in which we might challenge her assertion.

7. Find a technical document created at least fifteen years ago (a user manual or set of instructions, for example).

- How might we understand that document as a historical artifact?
 - How do the features of that document (organization, style, language, and graphics) represent its social and cultural setting?
 - What type of order does this historical document create?
 - What influence does this document have on current technical communication practice?
8. Go online and check out the website for a technical communication company or any company where technical communicators work.
- How much information is given about the company's history and professional philosophy? Why might they have included this information?
 - What view of that organization's culture and values do we perceive from the company's website? How are the culture and values communicated?
 - How might that company's philosophy and organizational culture manifest itself in the company's technical documents? In what ways do documents on the site represent the company's philosophy and culture?

NOTES

1. Related to these histories of recovery is feminist research into the gendered past of technical communication (see Lay 1994; Durack 1997; Lippincott 1997, 2003; Tebeaux 1998; Kynell 1999).
2. Elizabeth Britt (2006, 135) makes a distinction between organizations and institutions, namely that organizations "exhibit self-consciousness" while institutions "are marked by a certain taken-for-grantedness." Though we agree with her assertion, we do not distinguish the two, because our observations apply to both.

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BRAD MEHLENBACHER

What Is the Future of Technical Communication?

8

SUMMARY

Do the same communication principles that worked for offices and industrial workplaces in the twentieth century work in the online and distributed workspaces of the twenty-first? After providing a scenario of technical communication work in a contemporary organizational context, this chapter draws on research describing the geographically and temporally distributed contexts that envelop technical communication activities, and offers a heuristic that helps readers conceptualize some of the twenty-first-century capacities necessary to operate effectively as rhetorically sensitive multicomunicators. Future technical communicators face ill-structured communication-design situations characterized by audiences with limited attention, doing several things at once, attempting to deal with too much incoming information across too many media devices (phone, television, iPads, laptops, etc.).

INTRODUCTION

Janine is part of a virtual team employed by a major university to provide support for faculty and instructors using a web-based open-source learning management system (LMS). Her team is providing a full documentation suite using XML-GL, a graphical version of the XML markup language. XML allows her team to define all the features of the documents that she builds, including their formatting, font, headings and subheadings, and so on. Her full documentation suite includes an overview video, a general tutorial, a getting-started guide, quick reference information, a user's guide and reference information, several "teaching tip" demos, and a comprehensive online help system. Before this project, she served as a student intern assisting a team with an established documentation suite of similar size and complexity, although for a sophisticated spreadsheet application. The on-the-job experience she gained using HTML and then XHTML to design web-ready versions of some of the key documents will reduce her learning curve for XML.

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TECHNICAL
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Johndan Johnson-Eilola
and Stuart A. Selber

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Dedicated to our families:

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KATE LATTERELL,

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