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Audience Involved

Toward a Participatory Model of Writing

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I once had a small farm where I milked a few cows, raised chickens for eggs, and even had a pig or two. It was also on this farm that I first experienced the problem of "the involved audience." As I learned more about farming (I was raised a city boy), I became interested in alternative methods of agriculture. There were many contemporary books on the market about how to raise animals, how to care for them, how to feed them. In most cases, these books were quite helpful and interesting. However, as I was soon to discover, these books just did not have enough dust on them yet.

The dusty books I found in our local library—a quite large collection of old farming books (mostly pre-World War II era)—explained many techniques and methods for farming that did not rely on chemicals or modern methods of husbandry. Instead, these older books told how to farm in ways we now call "alternative." Thus I became very involved in these old books and, in many ways, transformed my farming practices through a little of the old and a little of the new.

As I look back on these times of very involved reading, however, it is now clear to me that I often was frustrated by the texts that I had read. That is, the texts often left me asking things like "But how did they actually mix those grains?" "What did the layout of the milking stall look like?" "What did they mean by 'soiling' the root vegetables?" In short, I was very involved in the texts, but I wanted more.

I now know what I wanted. I wanted to be part of the text production process (or I at least wanted someone like me—a specific user of the text—to be a part of it). My extended foray into usability and text production processes has brought this out in the open for me and has allowed me to see how such a desire can actually be accomplished. Readers and users of texts can be part of the production process, but there are many roadblocks in the way. Chief among these is the deeply embedded tendency in our culture to think in the short-term. Overreliance on financial markets, information processed at the speed of light, and just a general impatience wrought from a mindset of intense competition combine to block the long-term benefits of creating more usable, more desirable texts (whatever medium or form they come in).

Ultimately, in "Audience Involved: Toward a Participatory Model of Writing," I am speaking about power: the potential power of technical communicators and rhetoricians to be not only advocates for users and readers, but also to be agents for change in corporate and academic contexts. Idealistic? You bet. Realistic? Why not?

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From *Computers & Composition* 14.3 (1997): 361–376. Used by permission.

The teaching of technical communication has grown in significant ways over the past two decades, and much of this growth has meant changing old ways and constantly critiquing and evaluating what it is we do in our classrooms and with our curricula. For instance, technical communicators have often been indicted by charges of practicing what Plato would have referred to as mere cookery: Teaching students how to write through the unreflective use of formats (*Gorgias*). We have been seen, that is, as knowledgeless purveyors of someone else's bidding. We have reflected on these charges and have enriched our pedagogy through attention to audience, invention, visual meaning, and perhaps most significantly, ethics.[1] In short, technical communication teachers have explored deeper regions of theoretical awareness to understand what it is we do, and we have surfaced with new and vigorous approaches for the pedagogy of our profession.

During this time of intense professional activity, however, we have not necessarily contributed much of our own theory to those murky theoretical depths. We have instead been borrowers of theory—taking what was appropriate for our needs at a given moment. There is nothing wrong with this act of borrowing. It is commonly done, especially within the humanities, and it is a tribute to the interdisciplinary nature of technical communication. I would contend, however, that technical communication scholars have been too complacent in their borrowing. We have been one-way borrowers who, for whatever reasons, have spent little time explaining to other disciplines what we might contribute to any ongoing dialogue. Consider, for instance, current discussions concerning public discourse, and even more specifically those conversations revolving around the rather ill-defined concept of "service learning." Technical communicators have been actively involved in actually *doing* public discourse and service learning in our client-based classroom projects, nonacademic internships, and consulting. Nevertheless, I find little evidence of our voice in current conversations among compositionists and writing-across-the-curriculum specialists.

My intent in this article is not to delve into the discussions of service learning and public discourse. I will save that for another time. Instead, I focus on the more general topic of audience, particularly theories of audience. Audience theory historically has been central to technical communication. The very nature of technical communication begs for conceptions of audience because technical writers are fundamentally charged with the responsibility of translating information from one context to another. As a result of this responsibility, it should be no surprise that technical communicators advocated the importance of audience long before composition theorists showed interest in audience in the 1970s. For instance, Gordon Mills and John Walter's *Technical Writing* in the early 1950s included audience analysis techniques, and Richard Dodge's study of writers and managerial audiences at Westinghouse in 1962 helped clear the path for the development of audience-driven document design theories, especially as these theories relate to the reading of workplace documents like reports and proposals.

What I want to add to this long history of audience theory in technical communication is a discussion of users: those audiences we literally work with as we produce everything from reports and instructions to online help and World Wide Web sites. Through this discussion I show that audiences are not just for the writer's imagination. I also point out how this refiguring of audience has ripple effects. It challenges the role (and power) of writers as it encourages a reciprocal and participatory model of writing unlike that usually explained in general composition and rhetoric studies: a refashioned model of writing that has implications for writing processes, notions of community, and even agency.

WRITERS AND THE HEGEMONY OF AUTHOR(ITY)

The creation of discourse has been viewed historically as an individual activity where the writer or rhetor creates a text of his or her own invention. The writer in this view is someone who, in isolation, collects information, organizes it into a coherent pattern, and then produces a finished text. More recently, this model of writing has been challenged by a commu-

nity model that envisions the act of writing as a collaborative activity where the finished text is the product of an interactive and negotiated exchange among the writers. Further, the community model can be broken into two subtypes. The first is collaboration as a group activity where the participants use the collaborative activity to plan or revise the text, but then each group member creates an individual text (for example, peer review work in composition classrooms). The second submodel of collaboration involves, as Lisa Ede and Andrea Lunsford (1990) termed it, *plural authors, singular text.* Here the writers work collectively to plan and produce a single text. Consequently, most investigations of collaboration have focused on the collaborative process—whether it produces multiple or single texts—from the rhetors' or writers' point of view.

Missing from most discussions of collaborative writing is *audience* as an actual living, breathing figure in the discourse production.[2] By this I do not mean that community models ignore audiences conceptually; rather, I mean that real audiences are left out of our considerations of the discourse production process. Put another way, the audience has been marginalized by a preponderance of scholarship that hegemonically places the receivers of discourse literally at a distance, rendering them invisible to the writers' naked eye. In addition, because of this act of distancing, members of audiences are not allowed access to the discourse production act; they are only written or spoken to, not with.

Refashioning our concept of audience calls for a radical rethinking of what audience is.[3] For the classical rhetorician, an audience was a material object—people who were "out there" and who needed to be informed, persuaded, or entertained. As a result of such technologies as the printing press, systems for the mass proliferation of texts, and the "rise" of the notion of the individual, audience became more an entity of the text—a fictional construct of the writer's imagination (Ong, 1975). In contemporary composition parlance, as noted in a seminal article by Ede and Lunsford (1984), these two images of audience are often referred to as *addressed* or *invoked.*[4]

In this essay, I expand these conceptions of audience by discussing acts of collaboration that involve the audience directly in the discourse production process—what I term audience *involved.* In contrast to the addressed or invoked models of audience, the involved audience is an actual participant in the writing process who creates knowledge and determines much of the content of the discourse. The audience's "body," as many feminist theorists would say (Haraway, 1991), is rendered invisible during the act of discourse production in most current discussions of audience; the *involved* audience brings the audience literally into the open, making the intended audience a visible, physical, collaborative presence.

I examine instances where audience is a physical, active presence in the discourse production process. After all, in technical communication, our audiences generally are "real." We often work with the actual people who will receive the products of our writing. This is especially true when technical communicators serve as usability specialists: a relatively new domain for technical communicators that is rich with tales of collaboration processes, audience involvement, and maybe most interestingly, politics (see Mirel, 1988). Usability, as I explain later, will be used broadly. That is, the approach to usability that I advocate is not just end-of-the-line testing; rather, it is a process of discourse production from beginning to end.

I couch my argument in a context relevant to the classroom by drawing upon two cases where I have had students involved in collaborative usability projects. The first is a project where we created print documentation for a new voice-mail system at Miami University. The "players" who took part in this case were the writers and potential users of the system, the director of telecommunications, and the marketing representatives of the voice-mail firm. The second case involved on-line production as we used low-fidelity prototyping techniques of interface design to create screen designs for the Career Planning and Placement Office (CPPO) at Miami. Like the voice-mail project, this endeavor brought together an interesting "polis" of participants.

I also ground my discussion in a theoretical framework that draws from two sources: the history of rhetoric and the history of technology. My reasons for choosing these two points of reference is twofold. First, users by definition are using some form of technology. Whether it is a computer, a vacuum, a horse-drawn plow, or even language itself, users are always

connected with an activity through a technological artifact. Hence, it is appropriate that I draw from disciplines that offer insights into technological phenomena.

Second, it is imperative that we can demonstrate how users produce knowledge if we are to make them viable "players" in the discourse production game (Johnson, 1998). Users, in order for them to work with writers, must be recognized as equal members in the process. Such a notion is not far removed from technical writers' own frustrations when they become members of technology development teams. Technical writers are most often seen as those who merely "write up" the knowledge of designers and developers.

Users are apt to suffer a similar fate if their knowledge production ability is not revealed openly and visibly. To reveal some of the qualities of user epistemology, I draw from rhetoric the Aristotelian notion of "productive knowledge" to make the case that the knowledge of users is both practically and ethically informed. From the history of technology, I rely on arguments concerning the nature of technological knowledge itself: a type of knowledge that historically has been subsumed under the more politically and institutionally powerful knowledge of the sciences and philosophy.

TECHNOLOGICAL KNOWLEDGE: SOME HISTORY AND DEFINITIONS

I will offer two definitions of technological knowledge. The first of these comes from the history of technology—a discipline that (ironically) has been largely ignored by those of us in technical communication. The second definition is derived from the discipline of rhetoric, where technological knowledge is defined as a form of *productive knowledge*—as opposed to theoretical or practical knowledge. The purpose of these definitions is to situate the more abstract rhetorical definition in a more concrete technological context: the context where we most frequently encounter the audience known as users.

TECHNOLOGICAL DETERMINISM, SCIENTIFIC KNOWLEDGE, AND USER CONSTRUCTED KNOWLEDGE

Historians of technology have argued for at least

technological knowledge. At first blush, the idea that technological knowledge does not exist may seem absurd, especially for those of us in a discipline like technical communication. Upon closer examination, however, the very possibility of technological knowledge forces essential questions about how we view technology, science, and society: questions that can challenge basic assumptions of such defining cultural constructs as disciplinary hierarchies and institutional power structures. The effort of locating and defining technological knowledge, then, becomes a political act that is not always a welcome issue in some arenas of influence. In this section, I define technological knowledge through an examination of three issues that are common forums for debates about technological knowledge—technological determinism, science versus technology, and the social construction of technology.

Technological determinism (see Staudenmaier, 1985) is a view of technological development that ultimately erases the possibility for technological knowledge because this deterministic view holds that technology is autonomous of human agency, and that if any agency does exist, it is within the technology itself. As John Staudenmaier (1985) explained, technological determinism is based upon two premises: (a) that technology "results from a disjunction between efficiency as a norm for judging technical success and all other cultural norms" and (b) "that technological progress follows a fixed and necessary sequence through modern history" (pp. 135–136).

A determinist view of technology not only dismisses any hope for knowledge creation, it also leaves little room for discussions of the users of technology because without knowledge there is simply no hope of power or influence upon the part of users. In a world view dominated by determinist visions, technological systems and artifacts of systems are the ultimate controllers of the human users who merely receive technological products, and who, in turn, have no impact upon the knowledge created either by or through technology.

Technological determinism, however, is not necessarily an either/or proposition. There are many gradients of technological determinism that can affect the extent to which users, or any human agents involved with technological artifacts, can control or

perspective, the notion of technological determinism threatens user involvement, as a disempowered user has little possibility of influencing technology design or dissemination.

The debate over the relationship between science and technology has been a second spawning ground for discussions of the existence of technological knowledge. Essentially, this discussion has defended the epistemic dominance of science over technology by arguing that science produces new knowledge, while technology merely applies this newfound knowledge. This debate has been strongly argued between historians of science and historians of technology (Layton, 1971). In a nutshell, some historians of science have equated knowledge creation with "basic research": research conducted by scientists for the purpose of providing knowledge that will eventually be applied by technologists. As Vannevar Bush pointed out in 1945, "Basic research leads to new knowledge. It provides scientific capital. It creates the fund from which the practical applications of knowledge must be drawn" (pp. 52–53). Hence, in science versus technology debates, technology is put in the back seat while science controls the direction and course of knowledge. Thus, although technology might be allowed some credibility in these debates, it nevertheless is marginalized.

Social constructionist theories of technology have been developing for more than two decades as researchers have become interested in what Staudenmaier (1985) termed the "cultural ambiance" that surrounds technological development and technological use. This research has shifted the focus from the technological artifact toward the social dimensions of technology. As Edwin Layton (1974) explained in his article "Technology as Knowledge": "The technologist's thinking is intimately associated with the needs and values of a community. By confining the history of technology to technique and things, we also deny to our discipline a rich dimension of social history" (Layton, p. 33).

Put another way, technological development and innovation from a socially constructed perspective are community driven, and thus negotiated, as the values and knowledge of these communities evolve over time. My point here is that such negotiations include not only the developers and inventors of the technological system, but also the users of the system.[5] Such a perspective on knowledge construction revolves around a tripartite of inventors, artifacts, *and* users, where technological artifacts serve as a locus to construct understandings of people who not only *make* but also *use* technology. Such a breaking of hierarchical structures (e.g., inventors and developers merely giving technology to users) offers new avenues to theories of knowledge production by investigating a new builder of knowledge—the user. For our purposes of developing a conception of the involved audience, the user, as viewed from the socially constructed perspective, is able to negotiate and work with technologists—be they inventors, developers, or, as we are investigating here, writers.

PRODUCTIVE KNOWLEDGE AND TECHNOLOGY AS AN ART

The construction of knowledge—the question of epistemology—has been a subject of debate across disciplines for centuries. How is knowledge formed? What are the domains of knowledge? Who creates knowledge? These questions frame essential problems of epistemology and knowledge creation. For rhetoric, knowledge can be defined as being within the domain of the maker(s) of discourse, and the embodiment of that knowledge is found in the discourse(s) created through the "makings" of the rhetor(s) (see Lauer & Atwill, 1995).

In "Refiguring Rhetoric as an Art: Aristotle's Concept of *Techne,*" Janet Atwill and Janice Lauer (1995) described the epistemological taxonomy of Aristotle as having three parts: theoretical (episteme), practical (praxis), and productive (techne) knowledge.[6] They explained that,

> the taxonomy explicitly locates the study of mathematics, the natural sciences and philosophy in the domain of theoretical knowledge, ethics and politics in the domain of practical knowledge, and the *arts* [italics added] in the domain of productive knowledge. Throughout the corpus, medicine and housebuilding are used as examples of arts. (p. 26)

For example, in Aristotle's *Nicomachaen Ethics,* architecture is used to define the concept of an *art,* or of *making:*

> Now since architecture is an art and is essentially a reasoned state of capacity to make, and there is

> neither any art that is not such a state nor any such state that is not an art, art is identical with a state of capacity to make, involving a true course of reasoning. (1140a, pp. 10–15)

Clearly, technological knowledge falls within the province of productive knowledge or art. Locating technological knowledge in this way is crucial to the present discussion because this Aristotelian concept of productive knowledge, unlike theoretical or practical knowledge, has no end in itself. Instead, the end (*telos*) of productive knowledge is in the *use* of a product.

> The end of an art is not a product, but the use made of an artistic construct. The end of the art of housebuilding, for example, is neither the builder's use of the art nor the house itself, but rather the use made of the house by those for whom it was constructed. (Lauer & Atwill, 1995, p. 28)

Consequently, if we view technological knowledge as productive knowledge, then we are viewing technology through the user, not just through the system developer (the creator who practices the art) or the system itself (the product of the art). The user or audience, in the Aristotelian sense of productive knowledge, becomes a *judge* of the effectiveness and quality of the product of the art, thus taking an active role in determining the quality of the product and the effectiveness of the process by which it was made. In the case of discourse production, the product (*text*) will be judged in terms of its use, its usability. Put another way, technological knowledge as productive knowledge can provide us with insights into how the user or audience "come to know," thus giving us a grounding for the role of user knowledge in the technological production process.

USABILITY: AN OVERVIEW

Usability methods in technical communications have evolved over the past several decades as a wider user base has grown (Dumas & Redish, 1994). The microcomputer, of course, is the most prominent artifact in the development of current usability methods, but other devices, like VCRs, telephones, and even stoves and refrigerators have become targets of usability testing (see Norman, 1988).

The idea that usability testing is limited to fully developed technologies, however, is not what I would like to convey in this present discussion. In fact, I discuss usability as part of an iterative process that allows users to provide feedback during the conceptual, design and production stages of a product's development (see Ehn, 1988; Duin, 1993; Sullivan, 1989). Seen in this broader scope, usability offers technical communicators several advantages. First, it furthers arguments for the *early* inclusion of technical communicators in the development process. If, for example, we are involved in the early decisions of interface design (visual cues, organization of menus, and vocabulary for options or preferences), then communicators can more readily affect design decisions. Second, if we are a part of the development continuum, then we might be perceived as a part of the development team, rather than just the scribes who "write up" technical information. Finally, writers can effectively implement audience knowledge (and here I mean user knowledge) into the development process. In this way technical communicators are modern rhetoricians—experts of audience analysis. Usability specialists take audience analysis into a new context—the context of technological use—and study how this interactive audience uses various texts that reside in a given discourse community's arena.

Before presenting an actual case study of usability specialists collaborating with users, I would like to mention how I use the word *text* in the upcoming discussion. The *texts* that usability specialists encounter are of great variety. In fact, they go beyond the print text and include the online computer medium and even relatively nonverbal media like the push-button interface of a telephone or a photocopy machine. In other words, *text* in the following discussion involves virtually any symbolic representation that enables humans to interact with technological artifacts.

USERS AND USABILITY SPECIALISTS: HOW THEY WORK TOGETHER

SCENARIO 1: DEVELOPING USER DOCUMENTATION FOR VOICE-MAIL

This project began innocently enough as a client project for an advanced writing seminar in Miami University's Master of Technical and Scientific Com-

munication program. In this class of approximately fifteen students, we typically work with clients on products that actually need to be produced for specific "real world" purposes. For instance, we have produced patient information for local hospitals and clinics, right-to-know information for environmental agencies, and instructions for new users of our university's e-mail system.

While looking for an appropriate project during a recent semester, I noticed that the new voice-mail system at Miami was being actively marketed to faculty and staff. Part of the marketing information consisted of a brochure describing the system's features and a set of instructions for using the system's fundamental features. The brochure was a product of the company that had sold the voice-mail system to the university. The brochure was flashy—three colors and some graphics. A brief analysis of the text, however, revealed that the brochure had most likely been written by system experts, probably the developers themselves, because the descriptions of many features were cryptic or jargon laden and thus difficult to understand. The instructions had little to recommend them. They had been, it appeared, hurriedly written on 8-1/2″ × 11″ paper and then photocopied. In short, these documents had the trappings of a realistic user documentation project.

To begin the project, I contacted the university's director of telecommunications to see if he would like to serve as client. He agreed, and we proceeded to have a meeting to define the problem, and discuss our ideas for redesigning the voice-mail documents with the client. At first, the client was under the impression that we would just rewrite the instructions and make them more "correct." We explained to him, however, that we would rewrite them eventually, but that first we wanted to talk to potential and experienced users of the system to evaluate their needs. He seemed somewhat baffled but intrigued by the idea, and gave us approval to move forward.

Students broke into teams and designed surveys, questionnaires, and interview questions for the targeted users. They also located users who were willing to serve as participants, including faculty, staff and students. This part of the process was done quickly (in about ten days), but feedback from users was impressive. For example, we found that experienced users used the voice-mail system only as an answering machine, even though the system contained advanced features such as multiple message sending and conference calling. In a similar vein, novice and uninitiated users revealed that they thought voice-mail was a great thing, but that many of them already had answering machines and felt that they did not need another technological device in their lives.

Some writers also discovered that a discrepancy between users' conceptions of the telephone interface (the keypad) and the internal workings of the voice-mail system (the invisible computer housed in a far-off building). For instance, several users told writers that the human voice commands given over the system were often difficult to follow. In particular, they seemed to have difficulty with the word "menu" when the human voice on the line said, "for user options, please return to the top of the menu." The "top of the menu" meant nothing to users because they could not see a menu on the phone keypad. Some users tried pressing one of the keys at the "top" of the telephone keypad (1, 2, or 3), but this only sent them off in a wrong direction.

We later learned that "top of the menu" was a phrase from system developers whose mental model of the system was a flowchart that would sequentially move through a series of subtasks and, then, when those subtasks were completed, a new general task would begin again "at the top." Here we witnessed two forms of knowledge: the knowledge of the system developers and the knowledge of the users of the system. Both of these knowledge systems are "correct" within a particular situation, but the transference of one knowledge system to the other did not occur in the case of the voice-mail system because the conception of the system components and how these components functioned (as seen by the developers), and the situation of use (as seen by the users) had little in common when it came to actually explaining the use of the phone system.

Consider the earlier discussions of scientific and technological knowledge to help explicate this problem of user breakdown. Developers—working from a highly rational, hierarchical view of the system—explained the options of the voice-mail system through a vocabulary linked to their view of the phone system: a logically programmed sequence of steps that can be carried out in a well-defined manner. Even their definition of *menu* had only one meaning:

a top-to-bottom movement of logic from one flow chart symbol to another. The developers probably thought that the term menu might be helpful to users because a software interface menu is (again, from a developer's perspective) already a simplified set of choices revealing the underlying system to a user in terms of easy-to-use categories.

Users, however, were clearly not in this knowledge space. Users did not see a menu; they saw the phone keypad and nothing more.[7] The productive knowledge that the makers of the system were trying to convey clearly had not made contact with the *knowledge of use* that users were attempting to learn. Another way to explain this is to say that the *telos* of the product was not connected to *use* as it should have been (at least according to the Aristotelian definition). Instead, the *telos* of the phone system documentation had been inappropriately aimed at the production of the system—at the technological artifact. It became the technical communicators' charge to redirect this aim and turn the *telos* of the system toward the end of *use:* toward the context within which the user would actually use the product.

The project proceeded into the drafting phrase where major changes were made by the writers to the original documents. The new user documents were so different from the originals that little connection could be seen between them. The organization of the texts, the vocabulary of the tasks, and the visual layout had been radically altered to fit users' point(s) of view.

Putting information into a user's task vocabulary is common sense among accomplished technical communicators. In addition, making information more visible and accessible through layout and organization is commonplace (Redish, Battison, & Gold, 1985). I want to point out, though, that the changes described in this scenario are *customized* changes carried out due to the user collaborating in the production process. The specifics of the changes made, and how the specifics should be integrated into the texts were a direct result of the writer-user interaction in a situated time and space. Such problems as the "top of the menu" would have been hard to recognize without the situated user feedback, and likely would have been overlooked, thus causing potential user breakdown or, as in the case of more experienced users, limited use of the greater voice-mail system.

In this particular project the system developers knew of the changes because the class was consistently in contact with representatives of the development and/or implementation team throughout the project. Midway through the project, the client (the telecommunications director) contacted the vendor of the voice-mail system and told them of our documentation project. The vender was curious enough to send two managers from California to discuss what we were doing. At a final meeting, we met with the now multiple clients and provided them with recommendations for changing not only the documentation, but also some system features. Although I do not pretend to believe that the vendor implemented many system changes, it was clear that collaboration between writers and users had at least some impact. The writers had clearly become advocates for the users, and the users, in turn, had provided the writers with knowledge that could be used to argue for design changes. Further, students in the class were able to experience some theory at work. We did not follow formulaic recipes in this project; rather, we used flexible methods of observation, discussion, and interaction with users throughout the production process. We did not focus on counting user keystrokes or timing reaction speeds. Instead, we involved ourselves with the users (and with the clients) to negotiate an outcome based upon *use* of the voice-mail system.

SCENARIO 2: LOW-FIDELITY PROTOTYPING AND ONLINE DESIGN

It is often argued that usability testing is expensive. Systems developers, project managers, and even technical writers often dismiss, or at least downplay, the importance of usability because user testing and evaluation do not fit into the "bottom-line" of a given project cycle. Given a product that must get out the door, or a product that must be constantly debugged before it can be shipped, software developers are often faced with the reality of short-term outcomes. Such a reality, though, is locked into a short-term view of technological development; a long-term price is paid if a product goes out of demand and finally is nudged out of the market. It is true that us-

ability cannot solve the short-term problems. There will still be unreasonable deadlines, and the products will never be fool-proof. However, writers working closely with users can provide some benefits. The next scenario demonstrates how this can be accomplished—not only in print-text production, but in interface design—through *low-fidelity prototyping.*

Low-fidelity prototyping is an invention of interface designers determined to conduct inexpensive yet fruitful usability testing early in the interface design process (see Nielsen, 1990). The concept is surprisingly simple. A team of usability specialists (e.g., writers, human factors specialists, and/or interface designers) essentially play the role of a computer while a user walks through an "interaction." The materials are very low budget—a room with a table and chairs, scissors, paper, pen or pencil, and some tape. Consider the following example of a low-fidelity prototyping session conducted at Miami University this past year. This project, similar to the voice-mail documentation project, was a student-conducted, client-based assignment, but it was done as an independent study instead of with a scheduled class. Three graduate students who had some experience with usability methods conducted the project, and I served as their advisor.

The client for the proposed user interface was the Career Placement and Planning Office (CPPO) at Miami. One of the major responsibilities of the CPPO is scheduling interviews for graduating seniors with companies that visit the campus throughout the year. The interview scheduling process at the time of this project consisted of students reviewing the names of the visiting companies and then filling out paper documents stating the students' interview requests. These print documents were then entered into a computer database by CPPO staff. The scheduling process had become extremely cumbersome as more and more students used, and the CPPO staff was pressed to keep up with, data entry. Consequently, the CPPO decided to develop an online scheduling system that could be used directly by students.

The three technical communication graduate students who conducted the independent study had all been involved with the development of the new computerized CPPO scheduling system through a computer science class the previous semester. The computer science instructor had agreed to help the CPPO by having his students program the new CPPO system. The three technical writing students asked early in the semester if they could take charge of developing the user interface. The instructor agreed but remarked that the "interface will only take an hour or so to slap together." Once again, we were headed into a project with little appreciation for the use of the artifact.

Because the system was to be run on either an Apple Macintosh or a Microsoft WINDOWS graphical interface, it was possible to use the low-fidelity prototyping technique. Before the prototyping session began, the usability specialists (the three students in the Master of Technical and Scientific Communication program) prepared some basic "pieces" of the interface by cutting paper into shapes that resembled interface elements (pull-down menus, buttons, arrows, etc.). On some pieces of paper they wrote essential vocabulary that the interface must have, like the items on a pull-down menu. With these rudimentary elements, they constructed a skeletal representation of the interface on a table at which the user would sit during the session.

During a typical session, one of the usability specialists played the role of a prompter: someone who asked users what they would like to do. Metaphorically, this person was also "enacting" the computer because prompts he or she gave replicated commands of the computer program for which the interface is being designed. For instance, a user might be asked, "Which interview schedule would you like to see?" Then the user might respond, "The February schedule," at which point a second usability specialist would put an already prepared February schedule on the interface (by interface I mean on the table top). Meanwhile, the third specialist, who served as the primary observer of the session, took notes and managed the tape recorder and even a video camera.

The overall goal of these low-fidelity sessions was to construct a paper representation of what the actual user interface might look like. Therefore, as a session progressed the user and the usability specialists built an interface collaboratively yet were free of the constraints of program coding and debugging. In other words, there was no system-produced breakdown, which often causes permanent disruptions in usability projects.

I would argue that this separation of the usability from the actual programmed structure of the computer system allowed the usability specialists to more pointedly reveal the knowledge that users brought to the situation. The user in these low-fidelity sessions is unconstrained by the system and instead could concentrate on what he or she wanted to do with the system. This process of taking actual knowledge of technological use from the user's perspective, *and then giving it back to the programmers,* is an interesting turning of the tables, so to speak. This puts the burden of production on the ingenuity of the programmers to create a usable system—an artifact that has its *telos* in use, not merely in the efficiency of the system. Theoretically, such "turning of the knowledge tables" could help alleviate the idiot-proofing mentality that has driven the design of interfaces from automobile dashboards to personal computers.

In the Miami CPPO sessions, the technical writers took the feedback from six users and then produced a mock-up of the proposed interface using a computer-aided graphics development tool (in this case, TOOLBOOK, but HYPERCARD, MACROMIND DIRECTOR, AUTHORWARE, or other products could easily be used). This technique of interface and screen design was new to us and, consequently, the project provided us with a number of interesting insights. For instance, direct, early, and efficient feedback from users was very pertinent. Decisions about placement of graphical objects and order of menu information could be made relatively easily because users were "interacting" with a facsimile that closely represented the potential interface. Also, the improvisational quality of the activity appeared to form a close bond between writers and users. There was a lot of talking, questioning, and honest feedback—possibly due to the play-like atmosphere of these fictionalized sessions.

Beyond the innovative technique of low-fidelity prototyping, we found user knowledge of the *entire* interface to be an invaluable tool in the design process. The correct procedure for logging on to the CPPO system already existed in a print brochure, but the developers wanted the new system to be independent of print instructions. Users, however, perceived a link between the existing CPPO print documents and the new online information they were required to use. For instance, the low-fidelity prototyping revealed that students were unaccustomed to the initial log-on procedures, and, thus, they had difficulty even accessing the opening CPPO screen. During the low-fidelity prototyping session, the instructional brochure was available to users. Users repeatedly referred to the brochure, especially when they had difficulty logging on.

Developers had wanted users to give up their knowledge of print documents and enter a new knowledge space; this view of electronic media might be called the "paperless-office-late-age-of-print syndrome." Users, on the other hand, demonstrated in the prototyping sessions that they wanted to use print documents, at least for orientation to the opening screens. In the end, their knowledge of the use of print technology assured a greater chance of success with the online technology. The idea that the online interface would have been self-sufficient was, in our view, a fallacy, and this was revealed through user-technical communicator collaboration.

BEYOND USER ADVOCACY: INVOLVING USERS IN DEVELOPMENT TEAMS

As we have seen, users involved in usability evaluation and testing can help technical communicators make design decisions. In the voice-mail project, users drove the organization and content of the print user documents. They also had some effect upon the internal structure of the voice-mail system itself. The student users of the CPPO system provided information about what types of media (print and/or online) are best in particular situations. Through low-fidelity prototyping, users (and technical communicators) even played a direct role in the design of the actual user interface.

Interaction between users and writers also might have contributed to audience or user awareness among some systems developers. If this is so, then it is probable that writer-user interactions lead to stronger advocacy for user-centered design of computer products: a goal all technical communicators should strive to reach. The technological knowledge of users can be a powerful force, but only if we give such knowledge an outlet so that it can become part of the technologies we construct.

Beyond advocacy for users is the problem of actual user involvement in processes of technology pro-

duction. We cannot hope that just by arguing for "user awareness" we can have a strong enough impact on technology development processes *or* technology products themselves. At this point, we really must enter the realm of politics and ethics as it seems only proper to employ users in the development of products that they will be using. The consequences of involving users, however, are not so readily apparent. There can be political ramifications that can relegate users to defensive postures, or writers can be blamed for inefficient work procedures if users' knowledge leads them down dark pathways where little profit or "value-addedness" is immediately realized. Nevertheless, recognizing the depth and breadth of user or audience knowledge is an important first step if technical communicators want to involve users in the writing process. Bringing users to the table with writers and developers is necessary if we are to do more than just represent the fictional user in technologies or in texts.

INVOLVED AUDIENCES AND COMPOSITION PEDAGOGY: SOME PARTING THOUGHTS

As I mentioned above, within the realm of technical communication the concept of the involved audience may not be so surprising. Technical communicators work with "real" audiences on a daily basis. Teachers of technical communication and their students also connect with audiences through client projects like the ones I have described. But what might be the implications of involved audiences for the greater community of composition studies? Let me conclude with a few thoughts on the implications of involved audiences for the teaching of writing in a wider context. In so doing, I hope to begin the process of turning the discussion of involved audiences toward a new disciplinary arena.

Possibly one of the most exciting aspects of involving audience in discourse production is the wide range of genres this involvement could bring to composition classrooms. Audiences who actually receive the intended document can have interesting effects on a writer's conception of what needs to be produced. At times, the writer might be just plain wrong about the genre the audience needs. At other times, a single genre might not be enough to satisfy audience needs. I have already given examples of instructional texts, and although these are not the general fare of most composition classrooms, students could nevertheless experiment with these texts in any writing class. In addition, documents required by various organizations or institutions in local communities could be revised in writing classes and then evaluated by outside audiences.

For example, students can write informational documents for a local community on the importance of recycling. Actual members of the community who would be recycling can be brought into the classroom at various stages of the project to help plan, design, and, eventually, provide feedback on the final products. I have conducted such projects in undergraduate writing classes, and the results have been quite satisfying. Students in these classes become attuned to their writing in interesting ways as a result of their interaction with potential receivers of their writing. One group of students, for example, defined the recycling problem in terms of composting and eventually produced a multigenre document that argued for composting, described the essential items needed for carrying out composting, and even included instructions for composting in the backyard. During the project development, students interviewed local residents about their attitudes toward composting, eventually testing document drafts with the audience as test subjects. What could have been just an assignment became a real product for a real purpose: a purpose the audience helped direct and define in collaboration with the writers.

Finally, not only does the involved audience literally bring audiences "into the open," but these actively sought out and valued members of the discourse production community engage students directly in the public sphere. Here students can read about pollution or diversity or any number of social issues and then directly join these experiences with their in-class discussions and their writing projects. Audiences actually in the classroom and in the collaborative processes of writing: imagine the possibilities.

PART 3

PHILOSOPHIES AND THEORIES

While work in contemporary technical communication relies in important ways on rhetorical perspectives, the essays in this section demonstrate the rich diversity available within that general framework. In the first piece in this section, David N. Dobrin takes up the fundamental—and vexing—issue of defining the term "technical communication." After critiquing several different existing approaches to answering the question, Dobrin argues that "technical writing is writing that accommodates technology to the user." In their essay on theoretical movements within technical communication, Charlotte Thralls and Nancy Roundy Blyler describe and categorize different strands in the general rhetorical framework that gained prominence in technical communication during the last quarter of the twentieth century. Thralls and Blyler compare definitions of and work in three social approaches to technical communication: social constructionist, ideologic, and paralogic hermeneutic. They do so by looking at the key conceptual areas of community, knowledge and consensus, discourse conventions, and collaboration. In the following essay, Mary M. Lay details the contributions feminist theory can make to technical communication theory. In addressing a host of traditional focal points of theory and practice—ranging from objectivism through collaboration—Lay introduces an important set of approaches that enrich and widen the field in crucial ways. From the field of communication theory, Jennifer Daryl Slack, David James Miller, and Jeffrey Doak analyze three models for describing and understanding the technical communicator. These authors critique models of the technical communicator as passive transmitter or translator of information from specialist to user, arguing for a model of technical communication based on articulation, the contingent selection and arrangement of different strands of meaning in specific contexts. In this articulation model, technical communication is understood as a more robust, epistemic activity. Johndan Johnson-Eilola also examines the role of the technical communicator, analyzing problems inherent in the traditional service role so often ascribed to technical communication. Using the emergent job category of symbolic-analytic worker, Johnson-Eilola outlines technical com-

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What's Technical about Technical Writing?

DAVID N. DOBRIN

Most writing dies quickly and deservedly. It lives only when readers, not authors, keep it alive. Thank you, editors and Oxford.

Should it have died? Reading it over, I wonder. The piece ought to have been leaner, and it ought to have gone farther. I can see, as well as remember, that the ambitious young author wanted tenure at MIT a little too badly. Robert Graves says that an inauthentic voice is at the bottom of all bad writing, and in this case, he is certainly right.

When you compromise your integrity as a writer, it is usually the reader who suffers. Google "Dobrin" and "What's Technical," and you'll find hundreds of postings to classroom bulletin boards from baffled students, all containing some variant on "I thought technical writing was supposed to be clear."

It could have been clearer. I was not happy with the knee-jerk definition of technical writing—"Technical writing is writing about technology"—so I looked for a more illuminating substitute. I wanted something that told us more about what technical writers do, and what they do is write or ghostwrite manuals and reports.

The reports and manuals appear when there is a technology, a writer, and readers who want to use the technology. When the pieces succeed, they act as a kind of semipermeable membrane that lets understanding leak through at a controlled rate. Once the understanding gets through, I noticed, the membrane disappears. This is not Jane Austen, folks; once the readers get the technology, they drop the manual.

"Writing that accommodates technology to the user" still seems to me a clever formulation of this.

So why isn't "What's Technical" only a page or two long?

Then, as now, teachers of technical communication were paid by humanities departments to perform a function that had little to do with the departments' mission. Humanists teach students to think and to love literature. Technical writing teachers teach students skills and conventions they will need on the job. The humanists assume, perhaps correctly, that teaching technical writing is pretty easy and that there are lots of people who could do that job who could not do theirs.

Humanists want aspirants to colleagueship to be deserving. Their academic articles have to be learned and contribute to knowledge and all that guff; so, therefore, do academic articles by technical writers. I accepted this, and in "What's Technical," I tried to create something that

From *New Essays in Technical and Scientific Communication: Research, Theory, Practice,* edited by Paul V. Anderson, R. John Brockmann, and Carolyn R. Miller, 227–250. Farmingdale, NY: Baywood Publishing Company, 1983. Reprinted by permission of Baywood Publishing, Co., Inc.

would strike these readers as appropriate and worthy. I did not realize at the time that I had donned a yellow armband.

I now see that this desire for economic security affected every single word of "What's Technical." I only wish I had noticed it then. I was not alone, after all. Most technical writers produce stuff that is deeply affected by economics that are essentially invisible to the reader.

The economics usually hurt their pieces, too. Technical writing should accommodate, and writers try to accommodate, but the accommodation often fails. Why? Look at who is paying for the writing and who is paying to use the technology, and you will see.

At the time, I did have more than my own example in front of me. It was just then that clothbound, three-ring computer manuals made their appearance. These excrescences were anything but accommodating. Never read, they were a colossal waste of hundreds of millions of dollars and thousands of working lives. "Are these manuals technical writing?" I might have asked. But I didn't.

If I had had the clarity and common sense to see how much of my own time and effort I was wasting, perhaps I could also have seen what was wrong with these pieces, and I might then have written an article that would have killed these things off sooner. That article would have deserved to live for twenty years.

David N. Dobrin

It is a peculiar question. Similar questions with this form (what's medical, what's legal) have a trivial answer (nothing) because the words "medical" or "legal" designate a clearly defined discipline. To the extent that the question is meaningful for these words, the adjective has the force of a noun: medical writing is writing about medicine. There is, however, no discipline of technics. "Technical," rather, has the force of an adjective; there is something about the writing itself which is technical. The conjunction of adjective and noun actually brings out the ambiguity in "writing": it can be a thing (a piece of writing) or an activity (an act of writing). In the first case, "technical writing," the technicality is in the piece; in the second, the adjective shades off into an adverb: one doesn't write technics but "writes technically."

An adequate answer to the question, "What's technical about technical writing?" is a definition of technical writing, and, quite naturally, there have been many of them. Interestingly enough, the problems of previous definitions turn on the linguistic ambiguity of the term. Some definers choose to define "technical writing," some to define "writing technically." The choice, whether conscious or unconscious, determines the definer's project.

TECHNICAL WRITING

Common sense gives an obvious way to define "technical writing": collect many pieces of technical writing and find the characteristics they share. This is Fred MacIntosh's method in "Teaching Writing for the World's Work." [1] Originally speaking to English teachers interested in technical writing, he wishes to impress upon them the importance and variety of technical writing, so he lists some forty different purposes and forms of technical writing. He could list more. The bulk would be warranted if the list were exhaustive, but it is not. Writing only from his (admittedly large) experience, he does not include what he does not know. The result is unwieldy, yet incomplete; after reading this article, if we wish to resolve whether a piece of writing is technical, we're still best off asking Macintosh.

If one does not list all the characteristics of these pieces, one must describe the determining characteristics by dividing them into large categories. A natural grouping is format, style, and content. (Some choose only one of these as the defining characteristics [2–4].) After examining hundreds of pieces of technical writing, John Walter uses precisely this di-

vision. According to Walter, each piece of technical writing he saw:

1. Had specific rhetorical modes and formats which were pitched to specific readers. (FORMAT)
2. Had a specialized vocabulary and an objective style. (STYLE)
3. Had primarily technical content. (CONTENT) [5]

Patrick Kelley and Roger Masse use the same categories, but conflate them, primarily because they overlap:

> Technical writing is writing about a subject in the pure sciences or the applied sciences in which the writer informs the reader through an objective presentation of facts [6].

Their definition may seem to cover only content, but Kelley and Masse make clear elsewhere that "objective presentation" and "inform" refer to style and format. Both definitions speak to people who know less about technical writing than the authors, Walter's to those less experienced than he, and Kelley and Masse's to technical writing students. Both have enormous intuitive appeal. They are simple. The categories are familiar. They are the sort of definitions we give to friends who want to know what it is we do.

The trouble is that they are simple because they define a difficult concept in terms which are equally difficult and then leave those terms undefined. Any gritty tackling of technical writing must surely decide what "objective" is, what "facts" are, what "technical" is, and what "presentation" (as opposed to "argumentation") is. In what way are the formats and readers "specialized"? But neither Kelley and Masse nor Walter grapples with these terms; they simply refer us for examples to the technical writing they have encountered. Without distortion, neither definition would count environmental impact statements as technical writing (because their subject is nonscientific and they are by law directed toward any reader), but both would count fraudulent scientific works such as Velikovsky's *Worlds in Collision* (highly technical, informative, and directed toward astronomers). The authors would surely resolve the case of Velikovsky not by redefining "objective" but by returning to their experience and then adding "truth" as a characteristic to the definition of technical writing. Again, this elaboration seems obvious. Yet a piece of technical writing, like natural speech, contains much that is neither true nor false: indicators of structure, hypothetical statements, recommendations, and even statements made in good faith but untrue. This criterion of truth requires yet further elaboration, or reference once again to authority, before it can be understood.

The definitions all break down, apparently because their authors have not explained themselves sufficiently. Yet I do not think further elaboration would prove fruitful. The method is faulty. The definers of technical writing don't collect systematically. Instead, they rely on a vast experience to govern the formulations they give us: they use a retrospective, intuitive, conservative procedure. They assume that something called technical writing exists, that it will change slowly, and that the bounds of their experience approximate the bounds of the corpus. They assume, in other words, that their experience is sufficient to comprehend (in both senses of the term) the texts they assemble and that those texts are in fact what technical writing is. But there is no reason to believe that their experience is complete, nor to believe that we can get at their experience in its totality with a few well-chosen words. So why should we depend on that experience for a definition?

WRITING TECHNICALLY

The definers of "technical writing" look at texts; the definers of "writing technically" look at the encounter which produces the texts. The aim of this method is straightforward: to find whatever is unique about the way the mind grapples with a technical subject and then converts that grappling into writing.

There are many such definitions [7–11]. I will discuss three, the most sweeping of which is John Harris's:

> Technical writing is the rhetoric of the scientific method [12, p. 135].

Thus, whether writing is technical is determined by its own way of handling a subject, "quantitatively rather than qualitatively, and objectively rather than

subjectively." [12, p. 135] A closely related definition, indeed a metaphorical restatement without the gestures toward rhetoric and science, is Charles Stratton's. A technical writer in

> a particular art, science, discipline, or trade . . . helps audiences approach subjects [13, p. 10].

Thus, a technical writer should render his own act of writing invisible because technical writing is communication, not self-expression, and the information itself is far more important than the writer's attitude toward it.

In both definitions, what is unique about the act is its objectivity. Bringing a reader close to a subject is the result of objectivity, and handling information quantitatively is a way of gaining objectivity. The objectivity desired is of two kinds: the formal (the collection of such linguistic devices as impersonality with which a speaker performs an objective role) and the epistemological (the mental processes which formal objectivity conventionally designates). Neither Harris nor Stratton distinguishes the two.

Sharing these assumptions is a third definition of writing technically. Earl Britton, however, adds one very interesting criterion. Not only must writing technically be objective, it must be univocal.

> The primary, though certainly not the sole, characteristic of technical and scientific writing lies in the effort of the author to convey one meaning and only one meaning in what he says [14, p. 11].

Furthermore, while both Stratton and Harris would admit as technical writing something which is linguistically dense, Britton would not. He explains why in an analogy which appears frequently in his writing. For Britton, writing is like music. If one wants complexity in a piece of music, one writes a symphony; if one wants to wake up soldiers, one plays reveille on a bugle. Literature is a symphony; technical writing is a bugle call.

The three definitions say technical writing is a noble vocation. The technical writer speaks with the care of the scientist, the humility of a saint, the clarity of a bugle call. Frankly, I suspect more flattery than truth. Partly, it is because the definitions, like much flattery, are difficult to pin down. Their language is imprecise. I have difficulty understanding what Harris means by "rhetoric" and "science," what either Harris or Stratton means by "objective," and how technical writing is like music.

RHETORIC, SCIENCE, AND TECHNICAL WRITING

For Harris, technical writing is the rhetoric of the scientific method. Yet recent work in the history of science (by commentators ranging from Popper to Kuhn) provides a fairly accurate distinction between scientific and technical writing. Scientific writing makes a truth claim; technical writing does not. Moreover, the truth claim of any individual scientific statement is only provisional, and the statement is presented as such. In technical writing, on the other hand, the individual statement can be certain, because the whole is unconcerned with truth. Let me explain. A scientific statement presents itself to a self-regulating discourse, which as a whole makes a truth claim. The statement is provisional because it asks to be evaluated in terms of the rest of the discourse (which includes not merely other statements, but the methods of experimentation, the modes in which data are constituted, the means of confirming theses, the epistemological models underlying the theory, and the conventions of nomenclature). If the statement is satisfactory, it is accepted, and once it is accepted it ramifies the claim of the whole. So situated, the claim of the statement is always universal, never contingent. To invalidate the statement, "Table salt is more stable than free sodium and chlorine," requires a refutation of the whole system in which "salt," "stable," "sodium," and "chlorine" mean something. With the refutation, all the words and statements, procedures and theories, must be reformulated. On the other hand, a technical statement, like "Nut A fits on bolt B," does not refer to all the rest of the discourse. If the statement were found to be invalid (but how would one invalidate it?), the rest of the discourse would still stand. The statement is ineffective rather than invalid; the failure is in the quality control department, not in the discourse. If the statement about salt were found in technical writing (I doubt it would), it would still not make a universal truth claim; it would be contingent, referring only to this salt at this time in these circumstances.

I do not mean by this distinction to imply that science is either logical or true. If it were, Harris's Comtian leap—claiming that something based on science is scientific—might be justified. But most philosophers of science are unwilling to make either claim for it. Science can only be logical or true if it provides some purely logical way of resolving the question of whether a scientific observation should be admitted to its discourse, that is, if there were a scientific method. Apparently there is not. Instead, a claim for admission is rhetorical, and scientists are *persuaded* to admit a particular observation [15]. Now Harris seems to have this understanding of science, or so his use of the word "rhetoric" indicates. But if he does have this understanding, there's no warrant for his belief that technical writing is scientific. Worse, his definition hides an important distinction between scientific and technical writing: that each has its own modes of demonstration. The modes of technical writing are concerned with the instrumental and contingent, those of science with the discursive and universal. Since they have different modes and make different claims, the yoking is very weak; the claim that the scientific method defines writing *technically* is simply cooptation.

FORMAL VERSUS EPISTEMOLOGICAL OBJECTIVITY

Perhaps the most obvious link between the scientific and the technical is that they both appear to be objective, a fact that all three definers of writing technically seize upon as crucial. For all three, both kinds of objectivity—the formal and the epistemological—are necessary to technical writing; no definer distinguishes the two. Yet the relationship is merely conventional. Being objective does not require me to use the linguistic devices which often designate that objectivity—such as not using "I" or using the passive voice. I find it troubling that all three seem to think it does. In writing, a subjectivity mediates audience and content. It seems to me that to disguise the mediation by using formal objectivity requires a warrant from the reader. He or she must know and accept both the fact and the nature of the mediation. To imply that formal objectivity confers epistemological objectivity on the subjective mediation is naive and dispiriting. Worse, it encourages unwarranted uses of formal objectivity. Naive audiences might believe a statement so couched. But even if the reader is ready to warrant formal objectivity, I'm not sure how ready the technical writer should be to take the reader up. Why should a subjectivity disappear from technical writing? If the visible presence of a subject automatically moves the audience "farther away" from the object of the discussion, why do human teachers like myself still present themselves to students as they present the subject? The stipulation of objectivity as a form in technical writing is merely another way of coopting the authority of science.

UNIVOCALITY

The last "scientific" stipulation is Britton's requirement that technical writing be precise: ideally each speech act has "one meaning and only one meaning." Britton's notion requires some stringent limitations of what is to count as meaning, which his analogy does not provide. Britton assumes that complexity inheres in speech itself—symphonies or poetry are complex, technical writing or bugle calls are simple. But surely complexity is an agreement on interpretive procedure; one agrees with the author that one will seek certain sorts of meaning in certain sorts of situations. Reveille performed in a concert hall is to be complex; Beethoven's Fifth played over loudspeakers at Fort Bragg is simple. So if Britton's writer wishes to mean one and only one thing, he must specify the procedure; moreover, that specification must itself be unambiguous.

We can identify some elements of that interpretive procedure. For one, it must be able to enumerate meanings, fitting apprehension into discrete categories. Words have primary and secondary meanings, implies Britton, or, to continue his metaphor, primary tones and harmonics. The procedure separates the two. The meaning of the word "rock" can be only that thing on the ground, once the procedure has been applied. The procedure enables us to identify and eliminate other meanings such as those established by the speaker's experience ("rock" from a geologist doesn't mean quite the same as "rock" from a child), the cultural context ("rock" before 1953 has a different flavor from that of "rock" now), the philology of the

word, and the sound of the word. The soldier hearing the loudspeakers at Fort Bragg is told to listen only to the message, "Wake Up," and does so, according to Britton. He does not hear the other messages in the bugle call: the insistence that each listener is uniform with respect to the speaker; the affirmation of a continuing authority; the promise and provision of a visceral reward when the listener cedes his individuality.

Obviously the soldier—or the technical reader—at least picks up the secondary along with the primary tones. To separate the two requires special equipment—assent in the first case or a heightened attention in the second—as well as instructions from the author to use this equipment. Yet even if we are instructed to move into an information processing mode and we are capable of doing so (and how technical writing tells us to treat it as information is worthy of much study), I wonder if we actually can do so. Language is not information. The image of language as discrete units comes from our picture of the dictionary, in which each word has "*n*" meanings. But dictionaries exist to describe language; their descriptions cannot be substituted for a particular word as if a sentence were a mathematical equation. Those who have attempted to treat language as lexically determinate, to treat the sentence as a concatenation of dictionary definitions, mostly developers of artificial languages and computer translation equipment, have failed [16–18].

Exactly how we do understand language is not at all clear. But it is clear that the procedure which can find the "one and only one" meaning works by placing the word into various contexts to see if it fits. The ways we discover context are, however, extraordinarily complex. When I come up to a STOP sign, it seems that I am being confronted with a univocal message. It's not that simple. To decide what the word means in this situation, I must look at its physical location to see if it applies to me: "You stop here." I must consult the current usage of the sign. STOP in Massachusetts is a suggestion, not an order: "You should consider stopping here." I must decide whether STOP has been superseded by other rules: "You should consider stopping here unless there's an ambulance in back of you." The message grows as I apply contexts. For the message to be univocal and unequivocal, therefore, the procedure should specify the contexts I bring to the interpretation. It can't. There are too many contexts; they can be applied in too many ways. We do understand messages—we generally stop at stop signs—but not because the communication has specified how or because the author of the stop sign has intended only one meaning. We understand because we apply an experienced intuition to make pretty good guesses. And when we do so, we are frequently guided by those secondary meanings which Britton wishes to eliminate.

Apparently Britton is actually recommending a high level of specificity in technical writing. By "one and only one meaning" he means that we should distinguish which of several plausible meanings we actually do mean. If I say that a pen is easier to use than a pencil, I should specify whether I mean physically easier to grasp, psychologically more restful to me, or generally more responsive as I attempt to make smooth, graceful lines. If I mean all three, I should say so. It's hard, however, to tell how to apply Britton's recommendation. If he is enjoining us to write so that we're unlikely to be misunderstood by a good reader, his injunction scarcely applies only to writing technically. If the special characteristic of technical writing is that it always specifies, the injunction is a recipe for ponderousness. Surely preferable to a labored specificity is a grace which risks ambiguity. But even if ponderousness is the choice, that choice is made in all other kinds of writing besides the technical. Examined critically, Britton's specification is not specific enough.

UNIVERSALIST VIEW OF LANGUAGE

Thus far, I have been criticizing the definitions of "technical writing" and "writing technically" on many different grounds: that the definitions by inspection are imprecise, that experience limits such definitions, that various definers fail to distinguish technology and science, linguistic and epistemological objectivity, or the meaning and use of an utterance. The definers could probably reply to me by articulating more carefully what relationships they think hold between language, thought, science, technology, and reality. That they have not troubled to discuss these matters, however, is symptomatic of

their underlying position on them. They do not think these relationships are problematic. I do. At the heart of our disagreement is a disagreement over language. They hold what George Steiner calls the "universalist" view of language; in this essay I argue for the opposite view, the "monadist." [16] Those taking the universalist view believe a sentence can mean a particular thing and that precisely that meaning can be understood; those taking the monadist believe that what someone means is indeterminate and can never be precisely understood. The universalist might describe language as a collection of data: the monadist a group of adumbrations.

Carolyn Miller has described the technical writing version of the universalist view as the "windowpane" theory of language, and she suggests that the theory comes from logical positivism, whose foremost exponent in English was A. J. Ayer [19]. In fact, the definers of technical writing and writing technically do inherit some of their attitudes from Ayer, but it is important to realize that he is no primogenitor. Both positivism and the windowpane theory spring from the tradition of Cartesian rationalism, which is hundreds of years old. Among their forefathers are Bacon, Locke, Burke, Spencer, Russell, and the early Wittgenstein. The assumptions that the definers hold are actually part of a system of assumptions held by all these men, a system which (in its barest possible outlines) is as follows: One, the world is out there. Two, by properly applying our minds, we can know it. Three, there is a best way of knowing the world (a "privileged access") which the nature of the world dictates. The world is an open book; the world is legible. Four, this best way of knowing the world is available to any intelligence. Five, it is thus independent of language and human quirks. Six, language is a way of using and telling this access, a coding of the world, but the decoder is operated by a prelinguistic knower. Seven, we are able to distinguish between correct and incorrect (true and untrue) uses of language because our way of knowing is independent of language. Eight, so distinguishing is difficult and we often fail at it. Nine, if we can purify language and our consciousness, we can formulate a perfectly correct language, a universal language, in which we would not make mistakes. Ten (often unstated), it is our responsibility to do so.

Only by assuming that the world is out there can the definers of "writing technically" believe that there are subjects out there to which readers can be brought closer. Only because they assume that the world is legible and that it can be coded in language can they believe that writing is capable of "help[ing] audiences approach subjects" (to use Stratton's terms). And only by believing that there is a best way of knowing the world, which is independent of language and human quirks, can they believe that the world can be known objectively. Finally, only by believing that the way can be coded in a perfectly correct language can they hope to rid technical writing of subjectivity. The assumptions held by the definers of "technical writing"—for whom it is the encounter with the text, not the world, which is problematic—are a subset of these. To see how, just substitute for "world," "text." The text exists independently; it can be read correctly and it is through this experienced reading that these definers can identify texts that genuinely belong to the corpus of technical writing.

Underlying the universalist position (and the definitions of "technical writing" and "writing technically" that it informs) is a profound dissatisfaction with language as it is now practiced, a dissatisfaction that is particularly evident in points eight, nine, and ten in the list of assumptions given above. The universalist, wishing to stand back and interrogate the world without implicating himself, finds himself frustrated at every turn by a degraded language, and by the fallen man who uses this language. (For the universalist, the failure of language and the failure of man indicate each other, so purifying language is a moral, as well as an intellectual imperative.) The best way to relieve the frustration and purify language is to divide it into objective and subjective, primary and secondary, fact and opinion, and eliminate the second term. Hence, the thrust toward objectivity, precision, and neutrality, which we have seen in the definers thus far, a thrust toward moral grace as well as intellectual honesty. Hence also their lack of concern for interpretive procedures, for once language is purified, interpretation will not be problematic.

It is this moral fervor which all those who have tried to build a universal language share. Perhaps inevitably, their architectural strategy has been much the same. All have sought to guarantee a sound moral

base for their language by choosing to build upon some preexisting language form which for them had some moral cachet. The Gnostics, for instance, chose to reconstruct the language at Babel. Numerological analysis of Biblical phonemes being out of favor in the eighteenth century, rationalists built a language from the infallible signs of appearances, which were simultaneously made available to man and validated by a rational God. Again, in the twentieth century, a new attempt and a new language: this time, mathematics. Interestingly enough, the enemy for all was the fecundity of language, and that fecundity was a sign of man's fall. For the Gnostics, the fecundity stems from the failure at Babel and so is an actual relic of the fall. For Swift, on the other hand, it is not fecundity itself but man's ability to be untrue to appearances and speak "the thing which is not" which distinguishes him from the soft, rational Houyhnhnms. For Russell and Wittgenstein, the endless extent of language made their project too vast for merely human capacities; again, it would take something better than man to make the language [16, pp. 49–235].

Ayer's logical positivism is an attempt to solve Wittgenstein's problem by limiting what is to count as a meaningful statement to statements derivable by formal procedures from statements about sense impressions. Statements such as "This pillow is good" are meaningless to the extent that "good" is not reducible to "soft" and "blue." The idea is obviously appealing to definers of technical writing; it probably accounts for the extraordinary word "data" in Harris's description of technical writing as a "data retrieval mechanism." [12, p. 137] But another offshoot from Wittgenstein and Russell has had an equally profound impact on thinking about technical writing: information theory. The power of this is not so much in the philosophy it provides as in the example. Computers and computer languages clearly use something which looks like language, which is based on the procedures of mathematics, and which transfers the language from donor to receptor perfectly. Technical writing should be so good. This example probably accounts for the "retrieval mechanism" in Harris's phrase; it certainly accounts for those flow charts for technical writing we've all seen, the ones with the boxes for the transmitter, channel, receiver, and noise. This seems to be what we do: write down information and have someone else pick it up, albeit imperfectly, because of the noise.

But the metaphors logical positivism and computer science provide the definers with are only metaphors and indeed rather unconvincing [20]. (Think about it. Even though a person may receive information from technical writing—so that the effect of technical writing is information transfer—does the nature of the effect in any way determine the way it is produced, that is, make information theory applicable to writing? The effect of art is pleasure, but that doesn't give us a theory of art.) That we do not criticize them for being only metaphors is perhaps not surprising. To the extent that the definitions have ever had any power to convince, it is because they participate in a drama now hundreds of years old, the drama of Western man confronting a malevolent other, the universe, and seeking the language and the tools to subjugate that other. It is a drama whose end—failure—is known. The universalist definitions account for that failure: language itself has broken under the weight of knowing placed on it. The definitions prescribe a remedy, make language stronger by making it like the currently fashionable theory of truth, in this case science. (It is well to remember that scientific writing, though it deals with scientific subjects, is not thereby made scientific any more than writing about music is musical.) Thus, it is easy for the definitions to justify their remedies by appealing to common sense, a common sense they need not question. The result, and it has been so at least since Descartes, is that such definitions suspect the experience and language of man.

If the universalist tradition could realize its project and create a universal language, then such suspicion would be warranted. Yet, as even the universalists acknowledge, it may not be possible. There are only two possible ways to build it up: start from existing formal languages or start from the universal constants of language behavior. As we've seen, science and mathematics might be such formal languages, the languages of sense-data. But most philosophers of science believe that they are not in fact formal, and even if they were, Quine has shown that they can't be built up [21]. A universal language might be built by finding the basic Chomskian deep structures which

are actually wired into the brain and putting them together in the right way. Unfortunately, the available evidence suggests that there are no such structures. No language structure seems to be biologically inherent, the way the number of noses is.

If no universal language can exist, then the value of "purifying" language in its name should be reassessed. If we take each word only insofar as it contains information and refer each piece of information to other such pieces, we set up a clumsy interpretive system for ourselves. We must assert procedures for specifying context; we must account for and identify linguistic noise; we must write a technical lexicon. Moreover, we must accept preconditions for the project—a deracination of language, an implicit belief that man is fallen, and an automatic separation of epistemology and language—which are morally and pragmatically costly. And to what end?

THE MONADIST VIEW

The monadist alternative is to see language as it is actually used, rather than as a formal system, by readmitting its "tonal qualities" (Steiner's term).

> The directly informative content of natural speech is small. Information does not come naked except in the schemata of computer languages or the lexicon. It comes attenuated, flexed, coloured, alloyed by intent and the milieu in which the utterance occurs (and "milieu" is here the total biological, cultural, semantic ambience as it conditions the moment of individual articulation) [16, pp. 220–221].

The study of language becomes historical; it must ultimately take in each moment of being and the pressures shaping it. This seems sensible enough; we study technical writing by looking at how technical writers think about technical writing, but the preconditions for this study—the monadist ideology—are difficult to those of us brought up in the Cartesian tradition. The monadist does not separate knowledge and language; he argues that one knows in language. Since there is no way of knowing without language—a human construct—there can be no privileged access to the world. Since language creates knowledge of the world, it is not fruitful to suspect language nor to diminish it. And since language is not suspect, neither is the man who makes it; man is not fallen. Each language use is a "rich expression of articulate being," a being which simply is [16, p. 51]. No preexisting language form is likely to be better than the one we have; formalized languages are useful in special situations, but they are not extensible. Interpretation, consequently, is very difficult, and meaning can never be fully understood. What we mean depends on our consciousness as we speak; "all communication 'interprets' between privacies." [16, p. 198]

What motivates this view of the world? Why shouldn't we try to distinguish between knowing and speaking, when so much of our intellectual apparatus depends on making such distinctions? To answer these questions, we must again look back, this time to Giambattista Vico, an eighteenth-century professor of law and science. It is Vico's great clairvoyance, says Steiner, that knowing and speaking are inseparable, "that man enters into active possession of consciousness, into active cognizance of reality, through the ordering, shaping powers of language." [16, p. 75] To believe this, of course, requires a radical reorganization of what one wants to count as real. Vico made such a reorganization. For him, what is real or true is what we make (the doctrine of *verum factum*). Thus laws, language, or history, which we make entirely, are the primary objects of knowledge, and the natural world, which we do not make, is entirely secondary. After all, Vico argues, what we know of the natural world we know through experiments, which we make. There is no uninterpreted knowledge of the natural world.

Vico's doctrine was not accepted by his own century, whose dispositions were elsewhere. It took the Romantic preoccupation with the past's constituting of the present and with the individual voice to create a world in which Vico made sense [16, pp. 49–235]. In that world, even the father of linguistics, Humboldt, could say that language and knowing were reciprocal. Steiner summarizes his ideas: "Language does not convey a pre-established or separately extant content, as a cable conveys telegraph messages. The content is created in and through the dynamics of statement." [16, p. 82] To Humboldt, this idea is inescapable; nothing else explains the variety of languages and the difficulties of translating them. So,

too, for the twentieth century American linguists Edward Sapir and Benjamin Lee Whorf, the explanation of the differences in language was that "different linguistic communities literally inhabit and traverse different landscapes of conscious being." [16, p. 89] Whorf's most famous example is the Hopi language, in which, he claims, the Indians actually think time not as past, present and future, but as time-distance. Vico's thought, however, does not have its greatest consequence in linguistics. Coupled with the problem of how consciousness comes into being through language is the problem of how consciousness makes itself aware of the products of other consciousnesses, the problem of interpretation. Those who have grappled with this problem form a European tradition as distinguished as the universalist, but less familiar to Americans. The heirs of this tradition, Heidegger and Merleau-Ponty among others, have much to say about interpretation, which they view as the fundamental human activity [16, pp. 49–235].

Our version of Cartesian rationalism elides such radical problems of language production and interpretation by establishing pragmatic systems of interpretation and justifying them in common sense. For the monadist, however, the canons of common sense are what Steiner calls "axiomatic fictions," "conventions about 'reality-contents' of language . . . and about the accessibility of memory to grammatical coding." [16, p. 138] Axiomatic fictions claim to be absolute, but actually they provide a limited, indefensible view of the world. The descriptions of "technical writing" and "writing technically" which I have discussed are attempts to articulate these fictions. They are thus a description of language practice (including interpretive practice), not a formulation of the essential nature of technical writing. They bear the same relationship to a definition of technical writing as a description of Coach Woody Hayes' strategy has to a definition of football.

Such descriptions are, of course, definitive guides if everyone is playing Woody Hayes-style football. Even if the philosophic grounds for axiomatic fictions are crumbly, the group's decision to base its practice on them lend them a certain sturdiness, and make the group's injunctions on practice seem like common sense. My job in arguing a monadist view of technical writing (where the view seems quite out of place), is to show how the present axiomatic fictions do limit everyday practice—how they damage it or cause internal contradictions. I must ask what of value is left out by the prescriptions that make natural language resemble formalizable language. What, in other words, is the language so prescribed unable to do? If I cannot answer this question, my philosophical objections are irrelevant.

ALTERNITY

I cannot give a full answer here: yet the form of my argument and the people I refer to do indicate where a full answer can be found. I only have room to show that the prescriptions limit the vitality of the language used, thereby limiting the creativity of the writer and forcing us to establish in the writing human relationships which are mistaken and false. These prescriptions (objective, quantitative, univocal) propose to cure writing by eradicating ambiguity. What they actually do is confuse ambiguity (a property of denotations), vagueness (a confused intention) and what Steiner calls "alternity." [16, 21] Alternity is a characteristic of any language statement. It designates the fact that any statement, as it states what is, also brings into the domain of consciousness what isn't. Alternity is a source of vitality and creativity, because it means that using languages is always playing with the possible.

We play in several different ways simultaneously. As we use a word, for instance, we do not merely denote something, we also call up some of the linguistic history of the word, its associations, the way it is habitually used. More than that, we also call up a domain of words which are not used; when we say "red," we may also mean "not blue," or "not polka-dotted" (but we certainly don't mean "not elephants"). As we put words into sentences, we open up a world, which is rich because of its alternatives and unique because of what we deny. This sort of play is not merely important in literature or on some arcane philosophic plane; it is crucial in technical writing. As we write, we construct a way of looking at a thing which precludes other ways at least temporarily, announcing that this is the privileged access to the thing. We write design specifications and

document maintenance procedures in part to ward off such illegitimate ways; we must, if only for legal reasons.

More fundamentally, we play as a way of becoming in the world, to exercise our human will. When I speak and believe it to be true, it can only be the truth because I know how to lie; I have considered the alternative; and I have chosen to behave in this way toward others and toward myself. No machine can speak the truth; it can only speak, because it does not make this choice. Our language also lets us play frequently with conditions other than the actual which are neither true or false, and so play with our hopes and fears. The past, the future, the conditional, and the hypothetical are constantly being set against the present when language is being used. (Note the orchestration of conditions in that last phrase "when—is—being—used.") Of course, as we play with these conditions, we do not necessarily involve others in it. Some of the play is private. I may associate a certain word with a friend who used it and so strain to use it myself just that I may remember or imitate. A word may surface from a private discourse, an internal expression of hope or hate. This privacy gives strength to the writer and to the listener, who rarely fails to appreciate it when a voice becomes individual or when a word strikes one of the listener's private chords. Perhaps a technical writer can indulge too much in private play, but strangely, the instrumental purposes of technical writing are rarely so finely tuned that it matters. In most technical writing, there is no editorial reason to choose between "squeeze between the palms" and "compress in the hands." The actions resulting will be the same. Yet for me the first image is more satisfying to write or think, and having it makes my job easier and less alienating.

The cause of this alternity, the reason it has developed and survived, is that it has specific functions within a group. Alternity makes participation in a group—at all levels—a dynamic activity. Alternity does this by making a language act both inclusive and exclusive, both shield and sword. At the level of consciousness, using a word (which is never our own) has admitted the other. Perhaps a better description, as autistic children know, is "has let the other invade." At best, accepting an outside word and using it is distressing. (We all know the turmoil of being unable to find the "right" word and being forced to accept another, and we know the attendant loss and denial.) Alternity defends against this invasion; it creates a zone of selfhood where we may become ourselves as we become the other. At the level of articulation, the inverse process occurs. As we use a word which others hear, we simultaneously enter the group (which of us has not felt relieved upon finally having talked at a party) and individuate ourselves. We give the words to the group, and yet they remain ours. Beyond these activities within a group, alternity allows our language acts to include members of the group and exclude the others. Language acts in this sense are like discussing baseball with the new one in a prisoner-of-war camp. Using the correct word shows we belong and tests whether he does. Does alternity operate in this way in technical writing? Take for one example, jargon, a sin to technical writers and technical writing teachers who wish that technical writing were not a collection of Balkan states. But is it a sin? Jargon may be owlish to us, but to students or engineers who use it so delightedly it is a ticket of admission to a group which they set against our own and prefer. Creating, employing, and preserving jargon is a means of self-preservation, not simply the mode of aggression we usually condemn it as.

According to the monadist view, alternity makes any group vital. Perhaps at the highest levels this is the most clear. Surely we agree with Orwell that a language rich in possibility commits us to democratic freedoms and threatens arbitrary authority. Such speech lets us find dissatisfactions and think of alternatives. That is why political repression aims at limiting speech, either by suppressing it entirely or by making it sere, vague, mechanical, unthinking, endlessly univocal.

How does ignoring the property of alternity affect the descriptions of technical writing? In three ways. First, because the descriptions ignore the delicate modes of group cohesion entailed in technical writing, they misconstrue the difficulty of interpreting one group to another, for instance engineers to managers. Writing for a lay audience, as another example, seems only to involve substituting the general for the precise word, the metaphor for the equation. In fact, it requires the translator (for that is what he or she is) to inhabit two groups at once, testing the prac-

tices of each against the other. Second, the definitions fail to give technical writing the responsibility it should have or to invest it with the consequent creativity. The belief that the world is legible largely accounts for this. When a technical writer places something before a group, he or she determines how it will be seen. (What reader of a John Deere manual would use a tractor for a backstop, as I saw some boys doing one day.) That determination is trivial if there is only one best way to see something. Third, the definitions fail to account for or even to describe a slackness in technical writing which is due to the fact that it is written to a limited future. Assuming that technical writing should disappear as it is read or acknowledging that it will disappear soon after gives a writer a few ways to play with it and little reason to establish selfhood in it.

The belief that technical writing should disappear has a graver consequence, because sometimes it shouldn't disappear. We tend to think that technical writing gives access to information about the world; a universalist holds that the access should be quick and efficient—usually logical. But in situations where the audience is going to be using the writing for a long time, it is not at all obvious that efficient access is paramount. Take access to streets in a city as an example—and as a metaphor for much technical writing. Generally speaking, street names and addresses are laid out systematically on a grid, so that residents or newcomers can find any place and the route to that place quickly. So it is in Los Angeles, where I come from. In cities like Boston, the street system is older than the idea of access, and the streets seem laid out randomly, at least to a newcomer. The result is chaos and confusion, occasionally, but also an increase in what city planner Kevin Lynch calls imageability [23]. According to Lynch, a city is highly imageable if it presents itself to the mind as a complex whole, which is understandable in many ways at once. A highly imageable city enriches the experience of the residents, for we learn its life as we learn to get around. I know that in Boston, Lynch's example of a highly imageable city, learning the city's ethnicities and history is part of learning the addresses. And in Boston, even physical access is humanized, for the only practical way of getting around is to get pretty close and then ask somebody. In a less imageable city, like Los Angeles, you can get no hint of the Korean neighborhood on 3rd Street from the map; street names record only the quirks of developers. Access, of course, is very simple: driveway to driveway. I came from Los Angeles to Boston, and Boston's system was difficult at first, and frustrating. But now I am grateful to it, for it gives contour to my experience.

A NEW DEFINITION OF TECHNICAL WRITING

I am not suggesting that we abandon methodical parts lists and label parts whimsically. I am not suggesting that we write precious ambiguities or take up obscurantism. I am suggesting that the injunctions of clarity, precision, logic, objectivity, and univocality, the injunctions which we have accepted in deference to and imitation of the technology we imagine our writing gives privileged access to, are not absolutes but axiomatic fictions of a particular group. What is technical about technical writing is technology, to the extent that technology defines certain human behaviors among certain human beings and defines a group. Hence I suggest the following definition of technical writing.

> Technical writing is writing that accommodates technology to the user.

The key word is "writing": it should be understood in the monadist sense as a way of thinking and establishing human relations in a group. The word "accommodate" also suggests the invasive quality of technology (even to technologists) and the self-effacing role technical writing plays. ("Accommodate," curiously, allows its indirect and direct objects to be inverted with only a flick of the eye; in an invasion, who is accommodating whom, invader or invaded, technology or user, depends on the power of each.) "User" is appropriate rather than "reader," because technology is meant to be used; moreover, "user" reflects the fact that technical writing exists within a system which measures actions, people, and things by the criterion of use. "Technology" is more than an array of tools or procedures. It extends to the

way human beings deploy themselves in the use and production of material goods and services. One may speak profitably of an economic strategy or an administrative formation as a technology.

The idea that by technology we mean a way that people, machines, concepts, and relationships are organized is crucial to the definition, but at first glance it seems strange. We usually associate the word "technology" with machines or the ability to make machines, as in "computer technology." But this usage narrows our attention unnecessarily; the ability we speak of surely cannot be confined to a design, but must also include all concerned with creating and implementing the design. It is symptomatic, and I think instructive, that in its section on technology management the *Encyclopedia of Professional Management* argues that "private companies—multinational companies—are likely to be the most effective mechanisms for the spread and development of useful technology." [24, p. 1154] For the *Encyclopedia* a certain system of control is appropriate to technology; for me the two are a part of each other.

A second idea is that technology makes an essential difference to technical writing. Technical writing doesn't just happen to occur alongside technology; it is a technological product, a residue of technological management. Managers know this. It does not strike the editors of the *Encyclopedia* as odd, for instance, that they cross-reference "Research and Development Management" to "Writing for Business." Technical writing as a profession is a result of such management logic. It was invented after World War II in the aerospace and electronics industries, when very large tasks required extensive documentation, particularly in the proposal and design stages, and managers decided that these tasks could best be performed by separating the technical and writing functions. It may be argued that separation of difficult tasks is a natural response of any large organization, not something special to technology. But in fact, it, or even the less salient separation of the writing and engineering functions in a single job description, is the product of technological organization; the separation comes by analogy with the assembly line.

There are large organizations also concerned with the manipulation of the natural world in which the distinction is much less clear. I am thinking of academic science. In the scientific community, it would be considered an evasion of responsibility for a scientist to leave his or her writing to a scientific writer. (The only professional writing having to do with science, per se, is science writing, a species of journalism.) The organizational distinction, then, is very large; technology sees its technical writing as a thing to be quantified, controlled, and managed; academic science simply requires such competence to be part of the professional's tools. The distinction I made earlier between science and technology perhaps explains why. Scientific readers, engaged in a search for truth, are highly motivated, and they have a small arsenal of ways to test the writer's truth claim, the self-regulating mechanisms in the discourse. Technical readers have less exacting methods of testing a statement (they are not concerned with a writer's truth claim) and also make very different demands on it. The relationship of reader to text or writer to writing is thus like a loose joint, and so must be controlled and managed.

Under the universalist view, the fact that a group organizes its writing in a certain way does not say anything about the writing itself. In the monadist view it does, because the language practice of any group sets forth the limits of the group, the aims of the group, and the relationships that go on inside it. Technology, like any group, has particular ways to model the activity of human beings, particular categorizations of experience, particular modes of responsibility and control. Let me give an example. Most of this article was written while I was sitting in a Steelcase desk chair; the rest in an old-fashioned swivel desk chair which I got from a chairmaker. The Steelcase one came with a manual. The chairmaker did not provide one. Steelcase's manual is of more than semiotic interest, though that alone is considerable. (The manual proclaims the technology of chairmaking, but so does the chrome and synthetic fabric. High-technology chairs do not sell unless they look technological.) The existence of the manual indicates more than a habit of documentation run wild, though this, too, is important. (I get the feeling the manual was included because everything before distribution had been documented, so why stop now?) The manual is not simply something to use if I need help. Its existence defines a particular relationship with me

and projects a particular power over my experience. First of all, it proclaims the right to penetrate my experience, as it accomplishes the penetration. It models me as isolate. If I have trouble raising the chair, I should not turn to the mechanically minded professor next door or to my own common sense, I should turn to it. (True, I may be isolate, but that doesn't change my point.) Similarly, the manual also takes a certain line of responsibility and drops another. If I have trouble with the Steelcase chair, I go to the manual. If that fails, or I fail it, I then must take on the Steelcase Corporation. On the other hand, if I have trouble with the craftsman's chair, I first turn to myself or to a nearby friend. But I can always fall back on calling the craftsman, who I know will take responsibility. A principle of limited responsibility informs technological organizations; their writing enforces and establishes that principle.

Technology, in sum, not only uses language but employs its own axiomatic fictions; not only uses logic, but sets forth a rationality; not only perceives, but has its own way of knowing. The idea that technology has an ideology is difficult only because how technology thinks seems so obvious, so commonsensical; the idea would be easy if we were Hopi and studying technology from outside. Why has the ideology of technology become common sense? I find the most useful answer in the work of Herbert Marcuse and the Frankfurt School of philosophy. Several parts of the argument in Marcuse's *One-Dimensional Man* are particularly relevant to this discussion [25]. Marcuse argues, for instance, that the co-optation of science we have seen in some definitions of technical writing is integral to technological discourse. The key features of the scientific method as it was developed in the seventeenth century—they include the adoption of a value-free "objectivity," the constitution of the world into quantifiable and interchangeable things, qualities, and relationships (positivities), and the description of positivities in operational or instrumental terms so as to enable the manipulation of matter—the key features together form a discourse of technics, a *techno-logy,* which had no great authority in social and economic relations until the early nineteenth century, when it was brought into the discourse of production. Technological discourse then converted all things, natural or human, into functions, so that it could dominate man and matter simultaneously, using the same discourse to bring man into complicated systems of control and organization as it used to bring matter into complicated systems of manipulation. The conversion seemed like applying scientific logic to human beings, but the point of it was power for those wielding the logic. Marcuse thus calls it the "logic of domination."

Consider, for instance, how the logic of domination has coopted the idea of "objectivity." I have been arguing that in the definitions, no distinction has been made between epistemological and formal objectivity, when there is no necessary connection between the two, when the formal seems unnecessary and perhaps irrelevant and the epistemological seems problematic. Why then is objectivity so often stipulated in technical writing? Because technology demands a third kind of objectivity—instrumental objectivity or fungibility. If writing can speak with a single, third-person voice and pretend that this is the voice of everyman, the writing is likely to be uniform, and thus interchangeable.

The logic of domination operates in every such stipulation, whether it be objectivity, a scientific demeanor, or univocality that is stipulated. It must. We would probably not submit to such mechanization of our being, even though it brings us extraordinary material benefits, if the interchangeability of man and machine, the belief, for instance, that the question "will machines replace us?" makes sense, did not permeate our discourse. Thus Britton's dictum—convey one meaning and only one meaning—is not merely a guide to current practice in technical writing; it intends a subjugation of writing and writers. Dicta that remind the writer of the richness of language, whatever their truth, are very inconvenient in a testing laboratory. Alternity invests the writer with responsibility, responsibility which technology requires be in the hands of the manager. Alternity valorizes complex, personal communications, just the sort of thing to decrease productivity. Alternity makes quantifying language production silly. Yet how is one to plan, if one cannot set an output level?

Marcuse argues that most of technology's success comes from its ability to hide terms of the discourse which might be threatening to the discourse itself, terms like alternity. But his argument extends to the

way technology is organized, and he thus explains the separation of functions described earlier. That there be a profession of technical writing is certainly one term of technology, and it is certainly an important one. Yet technical writers are pretty low on the corporate totem pole. They are not well paid nor held in great esteem. If a technical writer wants to get ahead, he or she tries to move as quickly as possible into management. Technical writers are production people. Yet technical writers must often get to know far more about what they write than anyone else. To do this, they perform managerial functions. They oversee the work of other sections, communicating frequently with many different areas of a company. They make frequent and discerning judgments about the products or processes. On the basis of these judgments, they frequently make *de facto* policy. They have power. Yet neither they nor management seem to be aware of this. Why? The belief that language is transparent and that there is a privileged access to the world clouds the issue. What a technical writer does is obvious and easy. Judgment, which is given to the manager, is a higher faculty than perception.

THE TRANSFER OF TECHNOLOGY

Technical writing moves outward—from designer to millwright, from engineer to manager, from distributor to customer. At each point, the reader is a user. (People do not read technical writing for fun but because they need to do a task.) At every point, the technology must be accommodated to the user or the user must be accommodated to the technology. Previous definitions call this process giving access to the user, but "accommodate" is more accurate. The ambiguity of the word "accommodate," as observed earlier, sets forth the mutuality and mutability of the power of relationships established by technical writing. Moreover, "accommodate" suggests that conversion of thing to function which is crucial to the discourse of technics. Technical writing appears to be concrete, but it is only concerned with the concrete. In fact it makes the concrete abstract; it replaces the obdurate thing with the manipulable concept. It thereby makes the strange, invasive, expensive, or inefficient into the familiar and useful. Most important, "accommodate," unlike "give access," reminds us that technical writing and the movement of technology are human relationships, with all the attendant feints. Viewing technical writing as access makes us blind to its rhetorical quiddity.

The criterion of use—put it in only if the reader can use it, read it only if I can use it—is the most important single governor on technical writing. In it are the grounds for Britton's confusion of meaning and use (the meaning of a bugle call and symphony may be different, though their use is the same). The word "use" is as difficult to understand or use as we have seen the word "meaning" is; yet in descriptions of technical writing it has been used in an equally simplistic, Gradgrindian sense. The use of the writing has been what the writing lets the user do efficiently. The criterion of use thus accounts for the barrenness of technical language. What is the use of fripperies in language, after all? But "use" need not be so demeaning. Can't joy in language communicate itself, and can't men or women on the job use joy? The criterion of use is one more gesture toward science, but in fact it reveals once more the difference between the two. If the criterion of use informs the structure of technical writing, then it undermines technical writing's ostensible status as the privileged access to a legible world. Technical writing gives what is useful, not what is known. The first question a technical writer asks is "Who is the reader?" not "What is the world?" and the answer to the first determines the answer to the second. Thus, the barrenness of technical writing is actually ironic. The gesture towards science gives technical writing a thirty-weight flavor, but technical writing's greatest success comes when it is swallowed easily and digested quickly.

THE IMPLICATIONS OF THIS DEFINITION

It may be charged that my definition evades the title question by displacing "technical" onto "technology." I criticize the other definitions for leaving fuzzy boundaries around "technical," yet the boundaries around "technology" are by no means distinct. I admit this charge. My claim for the definition is not that it is ultimately accurate; it is that the definition shifts attention to where it should be shifted, to tech-

nological practices. The boundaries of that group cannot be distinct; the boundaries of no human endeavor are. Science and technology overlap; law and technology overlap; work and technology overlap. Yet even though they are fuzzy, the boundaries are more precise and more useful than the previous ones. The definition resolves problematic cases more accurately than the earlier ones: Velikovsky is not technological and not useful; environmental impact statements emphatically do accommodate technology to the user. Moreover, the definition does not let the boundaries be decided by one person's large experience. Technology is the subject of many disciplines: law, political science, history, management. The definition permits and even demands that we use such findings as they provide. The definitions we have seen are rules of thumb which serious and dedicated people have found useful for many years. My definition does not deny those definitions so much as it places them in context.

By questioning the philosophic basis of the prescriptions for technical writing, I am actually making my title question less meaningful. The title implies that language can be defined; my views of language say that such definitions are problematic—and mutable. The title implies that a procedure, presumably scientific, can be developed to answer the question; my criticism of previous definitions suggests that such procedures are misguided.

The definition suggests a different procedure for looking at technical writing. In this procedure, the piece of technical writing or the act of writing technically are two of several foci, which must also include the practice of the groups which the writer is writing for, writing for, and writing from, as well as the practices of the group in which the writer has located himself or herself. The procedure is in effect a natural history of technical writing. It looks at each thing in its domain both as an organism (which has a history) and procedure begins where someone conceives the need to accommodate, adducing the relationships of power and perception which generate it; and the procedure must end where the accommodation is completed. Along the way, the procedure follows the need and its traces in human relationships. Such a procedure is very difficult, for penetrating groups which you are not a member of requires learning a new way of thinking. It is likely that this new way will not be easy to generalize. The way they handle technical writing at Kodak is very different from the way they do at Corning, and each way is tied up with the corporation's organization, its self-image, its decisions about what is acceptable behavior, its valuations of judgment and knowledge, and so on. Despite the difficulties of this procedure, it provides the only means by which we can develop a full response to the question, "What's technical about technical writing?"

People come into technical writing from two directions; either they are technicians who are asked to write or writers asked to gain technical skills. As technical writers, they are likely to ask themselves what they are and what they do: obvious and necessary questions. The answers function as a definition of technical writing, and that definition helps the definer find an internal equilibrium and some direction for the future. The previous definitions of technical writing worked well to that end; they could make us feel very comfortable with technical writing, what it is and what it does. This definition does not. It questions the value of what we do; it suggests that our common sense misguides us much of the time. As a remedy, it requires that we abandon deeply held assumptions about how we know and write the world. Asking us to suspect ourselves leaves us without much equilibrium and with an uncertain future. But perhaps that future will give us writing which is more responsible, more creative, and more fulfilling.

NOTE

This essay could not have been written without the help of many people. Jim Paradis, John Kirkman, and Bernard Avishai generously gave me meticulous and critical readings of various drafts, and the essay would greatly indebted to Hubert L. Dreyfus, who of course is not responsible for any philosophical gaucheries in the piece. The technical writing group at Miami University in Oxford, Ohio, taught me much of what I know about

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The Social Perspective and Professional Communication

Diversity and Directions in Research

CHARLOTTE THRALLS AND NANCY ROUNDY BLYLER

I am delighted at the opportunity to reflect on "The Social Perspective and Professional Communication" essay. Nancy Blyler and I enjoyed a rich and productive collaborative partnership for many years, and of the half-dozen or so published pieces we coauthored, this one is my favorite. A primary reason is the genre, which I call the mapping essay. I have always liked the intellectual activity the genre requires: taking an influential movement or concept in order to unpack underlying assumptions, chart trajectories or transformations, and tease out distinctions and implications.

Such an exercise is especially useful at a time of rupture—or rapid change—in a discipline. Certainly, those were the conditions in the early 1990s when we wrote this essay. A social approach to communication and culture was well into its ascendancy, having largely supplanted the prior dominance of traditional cognitive science. Although distinctions between these two major camps had been thoroughly rehearsed by composition and professional communication scholars, distinctions *within* a social theoretical orientation were far less clearly delineated. Nancy and I wanted to make these distinctions more explicit. In so doing, our goal was not to provide readers with a detailed account of individual theorists but rather to develop some broad theoretical categories around which major strands of socially based research in our field seemed to coalesce.

Looking back on the essay, I am reminded of the hazards and limitations of mapping work. Writers have to decide what to map, in what detail, and according to what criteria. The results are thus inevitably selective, incomplete, and even reductive. Certainly, in our case, some positions and camps did not get represented. Important distinctions were also lost. In our efforts, for example, to map the theoretical terrain on a large scale, our emphasis on commonalities—lumping bodies of research into broad categories—meant subtleties within categories would be effaced. You can see this effacement most obviously in the ideological category where research informed by theorists as disparate as Marx, Habermas, and Foucault are lumped together without much differentiation.

Despite such limitations, I remain convinced that mapping essays such as "The Social Perspective" serve a useful function in our scholarly literature. For readers a decade ago, our essay

From *Professional Communication: The Social Perspective,* edited by Nancy Roundy Blyler and Charlotte Thralls, 3–34. Newbury Park, CA: Sage, 1993. Reprinted by permission of Sage Publications.

helped characterize research trends and provided a heuristic for sorting out those trends. For today's readers, the essay has a more retrospective function. As a historical document, it helps give newcomers a sense of the enormous impact "the social turn" had on professional communication research, and it underscores how recently ideas—so commonplace today—have infiltrated our thinking. The essay also provides a baseline for comparing research trends at the early phases of "the social turn" with the subsequent evolution of those trends. In this regard, the map Nancy and I posited, in some ways, still holds up. Many of today's research studies continue to (1) describe communicative practices in order to facilitate enculturation (our social constructionist category), (2) critique communicative practices and power relations in order to promote agency and change (our ideological category), or (3) highlight the relational and situated nature of communicative interaction (our paralogic category). In other ways, however, these categories are no longer adequate. Descriptive studies, for example, now routinely acknowledge the political as well as the paralogic nature of discourse. This hybridization is the result, at least in part, of a whole range of more recent social and cultural theories—for instance, actor network theory, activity theory, and articulation theory—now influencing professional communication research. All of which leads me to believe the time is probably ripe for an updated mapping essay—a broad-scale study that will help us see what the social (cultural) perspective looks like today.

Charlotte Thralls

The 1980s have seen a growing interest in socially based research, for both composition (Nystrand, 1989, p. 66) and professional communication. In conjunction with this increased interest, writing theorists have attempted to articulate the shared assumptions that underlie what Faigley (1985) termed the *social perspective.* Perhaps most binding is the fundamental rejection of positivism and the windowpane theory of language. According to positivism, knowledge is a direct apprehension of reality, where the human mind acts as a mirror reflecting the outer world, and ideas are true to the degree that they correspond with the world. The function of discourse, therefore, is to transcribe, as clearly and accurately as possible, what the mind as windowpane has apprehended. (For a fuller discussion of positivism, see C. R. Miller, 1979.) Social theorists reject these positivistic notions, arguing instead that reality is unknowable apart from language.

Because social theorists further hold that language and culture are intimately related, they share a belief in the importance of the communal. Faigley, for example, claimed that research employing a social perspective examines "how individual acts of communication define, organize, and maintain social groups" (1985, p. 235) and that writing "can be understood only from the perspective of a society rather than a single individual" (1986, p. 535). Echoing Faigley's emphasis on social groups, Carter (1990, p. 266) stressed that socially based research focuses on the *local*—a term borrowed from Geertz (1983) for the dependence of knowledge and writing on individual communities. Although Nystrand (1989) took social theorists to task for imprecision about the ways communities inform writing, he too shares Faigley's and Carter's emphasis on social groups (pp. 66–73).

This rejection of positivism, in conjunction with social theorists' stress on the local and communal, has led to one additional claim: the centrality of socially mediated meaning. Because there is no immediate knowledge of reality and because both knowledge and discourse are bound up with specific social groups, communications are invested with meaning only through the interactions of writers and readers in those groups. In short, socially mediated meaning—

or, to use an alternate term, *interpretation*—is central to the social perspective.

These common characterizations of the social perspective—as a departure from positivism and as a theory concerned with the local, the communal, and the social mediation of meaning—connect a social perspective on writing research with social views of discourse prevalent in a range of current theoretical movements: poststructuralism, radical feminism, and the philosophy and sociology of science. This widespread theoretical turn toward a social view of discourse has had a particularly strong impact on our understanding of the human sciences. For example, the authors in two volumes—*The Rhetoric of the Human Sciences* (Nelson, Megill, & McCloskey, 1987) and *Rhetoric in the Human Sciences* (Simons, 1989)—characterized knowledge and disciplines in terms of the communal and local, seeing field-dependent discourses as central to the definition of the various human sciences.

It appears, then, that some shared presuppositions are evolving to characterize a social perspective on writing research and that this research is a part of a larger cross-disciplinary movement to contextualize discourse within social and cultural influences. It appears as well that a primary focus among rhetoricians and writing researchers has been reiterating and elaborating on the common tenets of this perspective. This emphasis on commonality now presents us with two problems. The first has to do with the degree to which the social perspective can be characterized as a monolithic paradigm. When Faigley outlined this perspective, he indicated various directions that socially oriented research might take, but his chief concern seemed to be differentiating the social from other more entrenched perspectives—the textual and the individual (1985) or the expressive and cognitive (1986). As a result, Faigley emphasized the social perspective as a framework for uniting socially based writing research under a single theoretical orientation. Now that the social perspective has taken hold, it has become increasingly apparent that significant differences exist among socially oriented theorists and researchers. How then do we account for these different assumptions and emphases that are beginning to emerge among rhetoricians and writing researchers, all of whom claim a social foundation for their work? Stated another way, how can we begin to describe the different approaches *within* the social perspective?

A second and related problem has to do specifically with professional communication research. Thus far, we have no overview studies describing the diversity of work in this area being done under a social rubric—including important theoretical variations within a social perspective. Because these variations in social theory are now clearly beginning to emerge in studies of workplace writing, how can we map this rapidly developing body of socially based research? How can we make sense of existing research and assess the directions that socially based studies in professional writing seem to be taking?

Given these two problems, the purposes of this chapter are twofold. First, we want to describe three different and, to some degree, competing theoretical approaches that have been developing within a social perspective: the social constructionist, the ideologic, and the paralogic hermeneutic. Of course, we do not claim that these three approaches represent all the possible ways socially based research might be discussed or exhaust all the possible differences in socially based writing research. We do not, for example, account for research with alliances to other theoretical orientations, such as the cognitivist and the expressivist, or for research that embeds rather than makes explicit its theoretical presuppositions. We do, however, believe that the three approaches we discuss allow us to identify some competing assumptions about writing as a social act, thus permitting us to get at crucial issues that divide researchers operating within a social perspective. These differences are important, we believe, because differing assumptions about the *social* are leading to distinct emphases and bodies of research in professional communication.

Our second purpose is to use the social constructionist, the ideologic, and the paralogic hermeneutic approaches as ways to conceptualize some important patterns and differences that are emerging in studies of professional writing. As our discussion suggests, a social constructionist approach has dominated professional communication research, but the ideologic and paralogic hermeneutic approaches are beginning to offer important challenges to social construction. By exploring the implications that all three ap-

proaches have for professional communication research, we hope to characterize dominant patterns in existing research and point out possible directions in future research.

In the following sections we explore each of the three approaches that we see emerging within the social perspective, using four concepts: *community, knowledge and consensus, discourse conventions,* and *collaboration.* We have chosen to concentrate on these concepts because they are key terms framing discussion and debate among social theorists. To illustrate different ways these concepts are understood and employed under each approach, we cite representative studies in professional communication, and in the case of the ideologic and paralogic hermeneutic approaches, we show how these two approaches are generating critiques of research that has been informed by social constructionist principles. In the final section, we assess the major contributions of each approach, and we speculate on the challenges offered to professional communication research in light of ideologic and paralogic hermeneutic theory.

THE SOCIAL CONSTRUCTIONIST APPROACH

Social construction is perhaps the best known and certainly the longest reigning of the three approaches that comprise the social perspective. Bruffee's (1986) seminal article, "Social Construction, Language, and the Authority of Knowledge: A Bibliographic Essay," traces his social constructionist approach to such theorists as Kuhn (1970), who claims that scientific knowledge is "the common property of a group or else nothing at all" (p. 201); Rorty (1979), who rejects knowledge as representation, endorsing instead the view that knowledge is "the social justification of belief" (p. 170); and Geertz (1983), who views all knowledge as local (p. 4). In doing so, Bruffee consolidates the work of these and other theorists, summarizing their major points and discussing the implications of social construction for education in the liberal arts.[1]

The cornerstone of Bruffee's (1986) constructionist approach is the belief that knowledge is not "individual, internal, and mental" but instead is social in nature (p. 775). In endorsing this tenet, Bruffee sees himself breaking with a long-standing cognitivist tradition, rejecting epistemological assumptions that posit a universal foundation for knowledge. Instead, Bruffee (1986) and the constructionists he cites claim that knowledge is nonfoundational, emerging from a social matrix (pp. 776–777). This matrix is defined, in Bruffee's social constructionist approach, by the concept of community.

COMMUNITY

Community is central to social construction because communal entities are the sources of knowledge. As Bruffee (1986) asserts: "Social construction understands reality, knowledge, thought, facts, texts, selves, and so on as community-generated and community-maintained linguistic entities" (p. 774).

Despite the importance of community in this approach, social constructionists have yet to agree on precisely what the term means. Although Bruffee (1986, p. 784) aligns it with Fish's (1980) notion of an interpretive community, other theorists point to variations in the constructionist understanding of community. One variation, which stems from sociolinguists' concept of a speech community, designates a more specific group, whose members are often circumscribed by physical location (J. Harris, 1989, p. 14) and who share norms of behavior and communication (I. Thompson, 1991, p. 42). A second variation popular in composition and in professional communication—that of the discourse community—usually retains some of the specificity inherent in the sociolinguistic concept of a speech community (J. Harris, 1989, pp. 14–15) and describes a group whose members "acquire specialized kinds of discourse competence that enable them to participate" in the community (Faigley, 1985, p. 238).

Despite these variations on the precise meaning of community, theorists point to a common thread: the presupposition of like-mindedness on the part of community members (J. Harris, 1989; Kent, 1991). Discussed by Bruffee (1986, p. 777) as a characteristic of communities of knowledgeable peers, this like-mindedness takes concrete form in shared communal beliefs, values, and practices (J. Harris, 1989, p. 15). To social constructionists, these shared beliefs then manifest themselves as norms or standard, consensually held assumptions of community members that

shape the discourse the community produces (Rafoth, 1988, p. 140). In addition, however, to communities' shaping discourse, Bruffee (1986, p. 774) also claims that the community is, in turn, shaped by the discourse it has generated.

This constructionist concept of community has widely influenced scholarship in professional communication, where the concept of a discourse community has given researchers a way to talk about workplace writing in both industrial and academic settings. In particular, researchers have examined the normative aspect of communities, focusing on the way these regulate discursive practices. Concerning industrial communities, for example, Freed and Broadhead (1987) study a management consulting firm and an international accounting firm as discourse communities whose "institutional norms" "reign over" or "legislate" the writing done in those settings (pp. 156–157). Odell (1985) also suggests that the state bureaucracy he studied acted as a normative community, wherein shared attitudes, previous actions, and ways the organization routinely functioned were used to justify members' writing choices (p. 252). Similarly, Driskill (1989) speaks of corporate culture—values, norms, and beliefs that guide action—as the source of the "interpretive standards that affect writers' choice of content, persuasive approach, and word choice" (p. 137).

Concerning academic settings, Myers (1985) examines the proposals written by two biologists, concluding that both proposals were shaped significantly by the expectations of reviewers, expectations that caused the proposal writers to fit themselves within the discipline's consensus about acceptable research (p. 237). In their study of student writers, Anson and Forsberg (1990) find that students making the transition from the classroom to the workplace must also develop "strategies for social and intellectual adaptation" to the contexts provided by different discourse communities (p. 202).

In addition to examining the normative influence of communities, researchers in professional communication have studied the way industrial and academic communities are in turn shaped by their discursive practices and the discourses they generate. Doheny-Farina (1986), for example, examines the collaborative writing of a company's business plan, finding that the writing process helped to resolve the power struggle, shaping the social reality of the top management of the company" (p. 178) and altering the way the company viewed its authority structures. Similarly, Journet (1990) studies the case histories written by two neuropsychiatrists, concluding that by incorporating narration into the more traditional, analytic modes of neurological writing these professionals expanded the definition of what it meant to be a neuropsychiatrist (pp. 179, 182–183, 194).

Thus the social constructionist approach has made community an important focal point in professional communication research. In particular, community is both a normative force, the origin of the shared values and beliefs that shape and even regulate communication, and subject to being shaped by the communicative process and discourse the community generates. The shared values and beliefs of community members then take on additional significance because these values and beliefs define the community's consensus about knowledge.

KNOWLEDGE AND CONSENSUS

In Bruffee's social construction, knowledge results from a community's consensus about what it will call true, rather than from a universal that will ensure truth. As Bruffee (1986) asserts: "There is no such thing as a universal foundation, ground, framework, or structure of knowledge. There is only an agreement, a consensus arrived at for the time being by communities of knowledgeable peers" (pp. 776–777). Following Rorty, Bruffee (1986) then terms such consensual knowledge socially justified belief (p. 780).

This concept of knowledge as a consensually held, socially justified belief has influenced research in professional communication by shifting attention away from universals that ensure truth and toward the means by which such beliefs are incorporated into a community's knowledge store. One such means is interaction among community members, which researchers suggest can lead to widely shared agreement. Spilka (1990), for example, studies engineers in a large corporation, concluding that orality—"the process of transmitting ideas via any conversation or message between project participants that involves [illegible] means of achieving "a

corporate consensus" concerning, among other things, the contents of documents (p. 45). Similarly, in examining the *Challenger* tragedy, Winsor (1990) points to the impact that more effective communication among engineers and managers might have had on incorporating ideas about the faulty O-rings into the managers' knowledge store (pp. 17–18).

Winsor (1990) asserts that interaction enables consensus by offering the opportunity for community members to come to mutual understanding (p. 18). At the same time, however, interaction may have a regulatory effect, limiting what will be admitted into a community's body of knowledge. For example, in two studies of engineers, Winsor examines the role of inscription—a term borrowed from Latour and Woolgar (1986) to describe the "encoding of experience in socially validated symbols" (Winsor, 1989, p. 271)—in the social construction of knowledge. Concluding that "knowledge equals text," Winsor (1989, p. 284) points to the way in which the texts engineers consult and write, act as intertext, constraining the knowledge generated. Similarly, Berkenkotter and Huckin (this volume) posit that a framework of accepted knowledge, as revealed through citation, provides essential intertextual support for a claim to scientific discovery. Without this support, Berkenkotter and Huckin suggest, such a claim will not be admitted as knowledge. And finally, in a study of physicists' reading habits, Bazerman (1985) discovers that the physicists' interactions with other research and their judgments of it influence and constrain "the course of the whole community's knowledge" (p. 15).

This focus on knowledge as consensual agreement and the means by which beliefs are incorporated into a community's knowledge store has enriched the constructionist understanding of the functioning of communities by indicating how knowledge might be maintained and, to some extent, how it might grow. Concerning this growth, however, researchers in professional communication have paid more attention to the slow accretion of knowledge through interaction than they have to radical changes or shifts in a community's beliefs. Following Rorty, Bruffee (1984) links such changes to *abnormal discourse,* or discourse challenging the prevailing community consensus about knowledge (p. 648), but few studies in professional communication have followed Bruffee's lead in examining such challenges. Instead, researchers in professional communication have focused on knowledge in relation to Bruffee's (1984) *normal discourse,* or the discourse that members of communities most often write (p. 642). In constructionist theory, this normal discourse can be identified by the conventions the community endorses.

DISCOURSE CONVENTIONS

Discourse conventions play a central role in social construction because, according to Bruffee (1986), communities are constituted by the language their members employ (p. 779). Thus communities are defined and set off from one another by their discursive practices, which allow them to justify their beliefs socially and arrive at consensus about what they will call knowledge (Bruffee 1986, pp. 778–779).

Because communities are constituted by language and because beliefs are justified socially through language, the discourse conventions characterizing communities have received much attention in professional communication research. Perhaps the simplest form this research has taken is the study of the conventions that identify various communities. Herrington (1985), for example, examines two chemical engineering classes, determining that these "forums" were "constituted by distinct intellectual and social conventions" (p. 405), which students could then learn. Similarly, in studying the discipline of engineering, C. R. Miller and Selzer (1985) note that engineering discourse uses classical *topoi* or topics specific to genres, to organizations, and to the discipline as a whole, which are related to "community-specific conditions of successful argument" (p. 311). Finally, by examining the introductions of articles written for several different interpretive communities within psychology, Walzer (1985) concludes that "a writer's audience should be thought of in terms of the conventions of the discourse" of those communities (p. 157).

On a more complex level, however, professional communication research has been concerned with discourse conventions as indices of community membership. In particular, researchers have noted the relationship of conventions to communal norms. In a study of auditors' writing, for example, Hagge and Kostelnick (1989) determine that negative politeness

strategies were a response to the norms of the tors' firm. Similarly, Brown and Herndl (1986) find that professionals in 15 corporations used nominalizations and narrative structures because "these language features had acquired . . . powerful and favorable significance as signs of group affiliation" (p. 13). Researchers, however, have also noted the regulatory effect discourse conventions can have, delineating the parameters of the community and constraining its members. To Lipson (1988), for example, internalized conventions of discourse reinforce the values of a profession and thus serve to perpetuate it. "Through language specialization," Lipson (1988) claims, "the professional internalizes a control of behavior that reminds the professional of the value of adhering to the special norms of the specialized group" (p. 9).

This constructionist view of discourse conventions places the utmost importance on language as the means by which communities are constituted. Because discourse conventions are thus intimately tied to communities and community membership, Bruffee and other constructionists have stressed ways nonmembers can internalize both community norms and language and acquire membership. Bruffee has focused specifically on collaboration as a means to facilitate these goals.

COLLABORATION

Social construction posits collaboration as both the social process implicit in all writing and a pedagogic tool for teaching writing. As a social process, collaboration refers to what Bruffee (1984) calls "the conversation of mankind," whereby "thought is internalized public and social talk . . . and writing of all kinds is internalized social talk made public and social again" (p. 641). As "internalized conversation reexternalized" (Bruffee, 1984, p. 641), writing thus is not a solitary but a communal and collaborative act. Writing is learning to participate in conversations by fitting one's talk to the demands of knowledgeable peers, those "who accept, and whose work is guided by, the same paradigms and the same codes of values and assumptions" (Bruffee, 1984, p. 642).

For Bruffee and other social constructionists, collaborative writing projects—is a tool for students to learn how to participate in the conversations of these knowledgeable peers. Organizing students into peer groups, Bruffee maintains, can model the normal working of discourse communities and the social nature of authorized knowledge. Giving students collaborative tasks that require them to use the normal discourse of groups can further enable students to learn the conversational values that will effect their transition into professional communities. Bruffee also expresses interest in collaborative learning and writing as methods for de-centering authority in the classroom and for promoting democratic decision making, but his primary concern with collaborative pedagogy is its acculturative value.

Although Bruffee's vision of collaborative learning is only one of many influences on collaborative pedagogy as it has emerged during the 1980s, Bruffee's emphasis on collaboration as facilitating acculturation has had a significant impact on collaborative work in professional communication, providing an important rationale for collaborative instruction and research as well as grounds for a cooperative relationship between academe and industry.

In terms of classroom collaborations, many researchers have examined how collaborative writing projects can help acculturate students to their academic disciplines and professions. In their early work on collaboration, for example, Forman and Katsky (1986) argue that collaborative writing projects in management communication courses teach students how to talk within "frameworks" of their disciplines, thus enabling them to become effective members of marketing, finance, and business economics groups (p. 32). In a more recent study, Rogers and Horton (1992) examine the importance of face-to-face collaborative interaction in order to foster the "'talk about talk' that Bruffee deems necessary for individuals to learn the discourse of a community" (p. 122).

The idea that collaboration can facilitate students' transitions to the communication demands of professional discourse groups has lead to an even greater body of research on collaboration in the workplace. Arguing that collaborative writing is a norm in business and industry, many researchers (e.g., Farkas,

studied collaboration in nonacademic settings to determine the types of collaborative arrangements and strategies employed in the workplace, with an eye toward incorporating this information into the classroom. The underlying aim of this research thus is largely acculturative: Studies of workplace collaboration yield knowledge about professional practice that can then be used to prepare students to function effectively in their jobs.

Because collaboration viewed as an acculturative activity has been used by many teachers and researchers to link the classroom with the workplace, a constructionist approach to collaboration has helped establish—or, at minimum, reinforce—the possibilities of a cooperative relationship between academe and industry. Seen as an area of mutual interest, collaboration in the classroom and collaboration in the workplace become complementary activities, with classroom collaborations fostering interpersonal skills that will help students make effective transitions to the workplace.

To summarize, the social constructionist approach focuses on community, viewing communal entities as the sources of knowledge maintained by consensual agreement; as the repositories of discourse conventions by which communities are defined and shaped; and as the bodies to which nonmembers must—through collaboration—be acculturated. The ideologic approach focuses on political issues downplayed in constructionists' ways of conceptualizing community, knowledge and consensus, discourse conventions, and collaboration.

THE IDEOLOGIC APPROACH

For those reacting to and critiquing social construction, social theory has generated renewed interest in rhetoric as ideology. The emphasis here must be on *renewed* because attention to rhetoric as a political act is, of course, not a new concern in writing research. Expressivists (i.e., Elbow, Murray, Coles, Macrorie), have been, for example, deeply interested in the rhetoric of power and the responsibilities of individuals to challenge established institutional order. More recent scholars, such as Berlin and Myers, share the expressivists' interest in issues of power but reject as romantic expressivists' tendencies to view individuals as separate or free from the social and institutional forces that shape individual identities. Current scholars interested in the ideological dimensions of rhetoric see writers and the aims and intentions of writing as socially structured by ideology because, in Berlin's (1988) words, "notions of the observing self, the communities in which the self functions, and the very structures of the material world are social constructions" (p. 488).

Because of this emphasis on community and the role of discourse in constructing reality, current scholarship that takes an ideologic approach should be understood as an extension and elaboration of, rather than a major departure from, Bruffee's constructionist theory. Scholars interested in the ideologic dimensions of discourse see themselves factoring ideology into the tenets of social construction as a way of correcting crucial oversights in constructionist theory. More specifically, these scholars believe that Bruffee and his followers in writing research have separated the social conditions of writing from questions of power and control, and thus constructionists have tended to characterize knowledge making as a benign and apolitical process. Scholars such as Myers, Berlin, and Trimbur are concerned that when ethnographic studies and empirical surveys merely describe how writing practices shape and are shaped by social forces within academic and business communities, these studies represent community standards and values as normative, already-in-place, even unauthored givens to which new members must be assimilated. Such studies thus risk misrepresenting social arrangements as normal and natural, rather than as practices kept in place by power structures within institutions.

As a corrective, scholars taking an ideologic approach wish to extend social inquiry to include the ideologic frameworks that shape language practices and thus thought and identities within professional communities. By pointing out the systems of power and the means of production that authorize knowledge within discourse groups, these scholars wish to demystify the structure of authority behind knowledge-making processes. They also wish to advance a liberationist agenda: to empower members of communities to shape the discourse of their groups

rather than to be passively shaped by the discourses of those controlling the production and distribution of knowledge.

Because this ideologic approach calls into question some of the research and pedagogic practices in professional communication as well as the values of the commodity culture underlying many business and scientific communities, only a handful of scholars identified with professional communication are looking directly at rhetoric and professional communication practices through an ideologic lens. For the most part, ideology-based scholarship is coming from rhetorical theorists such as Berlin, Myers, Miller, Bizzell, and Trimbur, all of whom, to some degree, have been influenced by postmodern thought and leftist literary theory. Together, these scholars, by critiquing and extending constructionist concepts of community, knowledge and consensus, discourse conventions, and collaboration, are opening new avenues for research in professional communication.

COMMUNITY

An ideologic approach is concerned with the authority structures that enable communities in business, industry, and the professions to maintain and legitimize social orders and practices under the auspice of tradition and custom. Leftist critics refer to this self-legitimizing function of communities as *reproductive ideology*—a term derived from Marxist theory to describe the process whereby communities control and perpetuate themselves. According to Myers (1986), whose work since 1986 has taken an overtly ideologic turn, academic and corporate communities are powerful mechanisms of reproductive ideology because structures within communities tend to distribute power in ways that protect practices supportive of empowered social and economic groups. In protecting these structures, communities create dominant ideologies which, Trimbur (1989) argues, normalize "hierarchical relations of power (p. 603)," reducing "the authority of knowledge to a self-legitimizing account" (p. 609) of community practices. Academic and professional communities thus create, Trimbur concludes, "monopolies of knowledge" that privilege and reproduce "the meritocratic order of credentialed society" (p. 611).

Communities as products and reproducers of ideology have been the focus of considerable research in general education and composition. Bartholomae (1985), Freire (1968/1983), Giroux (1983), and Knoblauch (1988), for example, show how traditional reading and writing instruction is an entrenched pedagogic practice in academic communities, reproducing and perpetuating patterns of authority and social class. In contrast, research in professional communication is only beginning to examine the ideologies of corporate cultures and the role that pedagogy and research can unwittingly play in reproducing the values and ethics of dominant groups.

Feminist critics in professional communication and organizational culture, for example, are scrutinizing the way in which academic and business communities reproduce sexism and hierarchical social arrangements. Acker (1991), in her study of organizational culture, shows how a gendered substructure is reproduced through the written work rules, labor contracts, managerial directives, and other documents communities use to describe and evaluate jobs. Lay (1993) examines how these gendered and hierarchical values are reproduced in professional communication classrooms through reproductive educational theory that reinforces gender distinctions and male dominance.

C. R. Miller (1989) issues perhaps the strongest critique of professional communication pedagogy and research as sources of reproductive ideology, perpetuating the ethics of commodity culture. Miller, for example, questions the ideology that is reproduced through emerging "industry-university collaboration" (p. 19) and through research on work-related writing. Uncritically importing into the classroom the communication processes and practices of industry reproduces private corporate interests, making students the tools of capitalist ideology. This reproductive process, Miller argues, allows corporate ethical and political values to be absorbed and passed on without students reflecting on the impact that private communities may have on the good of the larger public community.

As these studies suggest, a leftist critique of *community* is leading researchers to a more self-conscious examination of the larger cultural and economic contexts in which professional communication research

and pedagogy take place. An ideologic critique also, however, calls for careful scrutiny of the internal workings of communities and the production apparatus that enables communities to control and perpetuate themselves. For those taking an ideologic approach, this production apparatus is consensus, which supports the prevailing knowledge.

KNOWLEDGE AND CONSENSUS

In the ideologic approach, consensus is an instrument of power and exclusion. In associating consensus with exclusion, ideologic critics depart from Bruffee's analysis of consensus—what Myers (1986) calls "the weak point" (p. 166) of his theory. At issue is Bruffee's willingness to concede almost complete authority to the accepted knowledge of community members while minimizing the discourses that are silenced or excluded in the consensus-making process. For Bruffee (1986), conflicting views and individual differences can be explained either as views that must be eliminated or as views that can be reconciled through rational negotiation and thus be absorbed into a prevailing consensus (pp. 647–649).

For those adopting an ideologic approach, consensus so narrowly construed masks community conflict and heterogeneity—egocentrism and gender, individual and class differences—and downplays the fact that "knowledge and its means of production are distributed in an unequal, exclusionary social order and embedded in hierarchical relations of power" (Trimbur, 1989, p. 603). In short, some interests are suppressed while others dominate. Consensus thus is not so much an index of agreement as an exercise of power, resulting in what Habermas (1970, p. 205) calls a "systematically distorted communication" (a false consensus) and Bachrach and Baratz (1962) term a "mobilization of bias" (p. 950).

Influenced by such analyses of consensus, researchers in rhetoric and writing and in organizational culture are now attempting to demystify consensus by situating it within the larger context of conflict, contradiction, and difference. Myers (1986) argues, for example, that "we need to see consensus . . . as the result of conflicts, not as a monolith" (p. 166); while Mumby (1988) argues for a perspective that will examine "the underlying structural conditions that produce situations of consensus or coercion (or coercively produced consensus)" (p. 48). Trimbur (1989) has labeled this perspective a consensus of "opposition" or "dissensus" (pp. 609–612). As a critical strategy, dissensus foregrounds voices that are left out or suppressed in the control and distribution of knowledge. A rhetoric of dissensus, Trimbur (1989) explains, would "open gaps in the conversation through which differences may emerge" (p. 614) and identify the "forces which determine who may speak and what may be said" (p. 612).

An ideologic critique of consensus has important implications for research and pedagogy in professional communication. For example, a consensus of opposition challenges constructionist-oriented studies that suggest that the disciplinary practices of biologists, lawyers, engineers, and other professionals reflect consensual agreement. Consensus, J. Harris (1989) maintains, is not necessary in professional communities (p. 20) and not necessarily, Trimbur (1989) argues, the norm in business and industry (p. 610). A consensus of opposition further challenges the notion that professional documents reflect consensus when, in fact, such documents may reflect power struggles and contradictions that prohibit consensus.

Wells (1986) is among the few researchers in professional communication to address the myth of consensus in industry and the professions. Through her analysis of manual writing in an industrial setting, Wells illustrates how conflict can actually impede consensus, and she suggests how awareness of these conflicts may revise traditional conceptions of technical documents and the technical writer's role. By illustrating how these conflicting interests result in three separate documents that suppress and segment information, Wells points out the extent to which technical documents may reflect and even preserve competing claims to authority.

As Wells's study and Trimbur's concept of dissensus suggest, an ideologic approach to knowledge and consensus is directing attention away from constructionists' notions of this concept as indicating agreement among community members and toward the relations of power that authorize some knowledge claims and exclude others. In so doing, an ideologic approach also redirects the analysis of discourse con-

ventions because, if consensus is the production apparatus for reproducing communal values, discourse conventions reflect and reify that consensus.

DISCOURSE CONVENTIONS

An ideologic approach identifies discourse conventions as complex semiotic systems or symbolic orders that signify and sustain the relations of power implicit in consensual knowledge. Scholars adopting this approach wish to deconstruct this symbolic order, to lay bare the struggle between dominant and "socially disenfranchised discourses" (Bizzell, 1986, p. 43)—to show how textual norms and ways of reasoning can demarcate insiders and outsiders, privilege what can be said and how, and exclude or marginalize alternate discourses.

An ideologic approach to discourse conventions has significant implications for the direction and focus of professional communication research and pedagogy. Perhaps most important, this approach shifts focus away from constructionists' preoccupation with conventions as identifying both communities and community members and toward the ideologies that underlie discourse and the ways in which conventions socially construct relations of domination. Researchers in professional communication are beginning, for example, to examine how text conventions in technical documents can be used to serve dominant ideologic interests. Thus, in their study of environmental impact statements (EISs), Killingsworth and Steffens (1989) illustrate how the mandated discourse of EIS reports, while ostensibly a "democratizing rhetoric" (p. 170), actually protects the interests of the government bureaus, thereby preserving the dominance of this group.

Other researchers are looking at even more subtle ways that seemingly neutral discourse elements can mask ideology. Barton and Barton (1993), for example, "'deconstruct' the innocence of maps." By outlining "rules of inclusion" and "rules of exclusion," Barton and Barton illustrate how maps privilege and reproduce the interests of dominant groups at the same time that maps naturalize the relationship between signifier and signified and thus "dissimulate" the fact of privileging. In addition, Lauer and Sullivan (1993) argue that validity and reliability "are not

[illegible] reveal studies' theoretical assumptions and hence betray ideology.

Finally, an ideologic analysis of discourse conventions is leading researchers in professional communication to reevaluate marginalized discourses and assert the legitimacy of alternate, excluded patterns of reasoning and writing. In separate studies, for example, both Brodkey (1987) and Rogers (1989) have called for a reevaluation of narrative in professional discourse. Thus Brodkey addresses the suppression and exclusion of narrative in academic research, with its predilection for data gathering and analysis, arguing for greater reliance on narrative in ethnographic and qualitative research because of the "lived experience" (p. 40) that narratives provide. Rogers makes a similar argument in her study of automobile dealer contract reports. Although official guidelines for these reports recommend against narrative as an organizational pattern, Rogers shows that narrative is preferred by managers and better fulfills evidentiary requirements of the company.

Taken together, many of these studies represent a shared point of view being advanced by an ideologic analysis of professional discourse. Killingsworth and Steffens (1989), and Brodkey (1987), for example, emphasize what Barton and Barton call "the perspective of the traditionally disempowered" in order to encourage alternative and more heterogeneous discourses. At issue for these authors is resistance to reproductive ideology and empowerment of those voices and vocabularies slighted by conventional and privileged ways of speaking and writing. This concern with resistance and empowerment also informs an ideologic approach to collaboration, marking important factors that ideologic critics find missing in social constructionist pedagogy.

COLLABORATION

Influenced by the educational and political theories of Freire (1983), Giroux (1983), Habermas (1970), and others, scholars in rhetoric and composition are attempting to broaden the constructionist agenda for collaborative writing and learning. Collaboration, these scholars argue, should demonstrate to students not merely that knowledge is socially con-

bur's (1989) words "change the social character of production" (p. 612). In other words, collaborative learning should enable students to participate in decision making and thus be empowered to control their situations.

Knoblauch (1988), for example, has advanced Freire's concept of problem posing, a critical strategy that would help students become aware of the shaping influence of interpretive communities "without subordinating themselves to entrenched ideas about their proper place or function within the institution of 'literacy'" (p. 135). Trimbur's dissensus—modeled after Habermas's (1970) ideal speech situation, a utopian ideal—would rearrange collaborators' interactions to achieve relations of nondomination. For ideologic critics, collaboration thus is a way to transform the classroom: to break down authority structures so that teachers and students collaborate with shared authority, to foreground the voices that are lost as student collaborative groups merge their collective views in writing projects, and to draw out the hegemony implicit in prevailing ideas about appropriate discourse in various disciplines and professions.

This concern with the ideologic dimensions of collaborative activity is beginning to emerge in professional communication, constituting what Forman (1992) calls an important "new vision" for collaborative writing research (p. xvi). In their studies of workplace writing, for example, researchers like Trimbur and Braun (1992) and Locker (1992) are starting to look at the distribution of power and authority among co-authors and within collaborative teams. In studies of collaborative pedagogy, meanwhile, researchers are addressing how power might be distributed more equitably among students in collaborative groups and between students and teachers in technical and business writing classrooms. In their study of engineering course collaborations, for example, Flynn, Savage, Penti, Brown, and Watke (1991), build on Ede and Lunsford's (1990) hierarchical and dialogic modes of collaborative interaction to show how these modes may be gender marked and linked to the distribution of power relations. Associating a hierarchical mode with dominance and oppression (male collaborative style) and a dialogic mode with equality and balance (female collaborative style), Flynn and co-authors argue for the more equal distribution of power that the dialogic mode provides. They also introduce a third mode of collaborative interaction—asymmetrical—designed to account for the different responsibilities of group members and to protect against devalued responsibilities, particularly those that may be assumed by women.

Other researchers are examining how new technologies might help students better understand, and possibly even dissolve, hierarchical structures in collaborative interactions. For example, Rymer (1993) shows how videotaping a writing group during the planning stage of its collaborative work can empower students by allowing them to witness the conflicts and power struggles involved in their movement toward consensus. Many researchers are also finding great promise for egalitarian reform in the computer-supported collaborative classroom. Separate studies by Arms (1987), Selfe and Wahlstrom (1989), and Duin (1991), for example, suggest that computer-supported classrooms allow for flexible authority structures, transforming teachers into coaches and collaborators and student collaborators into empowered evaluators. In their study of computer networking (electronic bulletin boards and teleconferencing), Kiesler, Siegel, and McGuire (1988) conclude that networking fosters democratization because the anonymity of networking interchanges eliminates many cues of status and authority.

Technology in the collaborative classroom is itself, however, being subjected to an ideologic critique. Recently, for example, Hawisher and Selfe (1991) have cautioned that, although computers have the potential to "help us shift traditional authority structures" (p. 62), computer networking systems could ultimately help reproduce repressive structures by allowing the instructor to monitor and control students' collaborative interchanges.

In summary, ideologic critics have differed significantly with the social constructionist understanding of community, knowledge and consensus, conventions, and collaboration by pointing to the tendency of communities to reproduce their ideologies and thus to suppress difference and by examining the pedagogic implications of and alternatives to existing structures of authority. Paralogic hermeneutics, a third social approach and one that has only recently made itself felt in writing research, also departs from

social construction. The disagreement voiced by paralogic theorists, however, is more fundamental than the disagreement voiced by those following an ideologic approach, because paralogic hermeneutics reinterprets in profound ways many of the tenets on which social construction is based.

THE PARALOGIC HERMENEUTIC APPROACH

Paralogic hermeneutics, which has sparked interest among a small number of writing theorists who argue with current views of discourse production, derives its name from its concern with the interpretive, or hermeneutic, act. Of course, paralogic hermeneutics is not alone in this concern with interpretation, because both the social constructionist and the ideologic approaches also endorse the social mediation of meaning. Unlike these approaches, however, paralogic hermeneutics stresses the uncodifiable—and hence the paralogic—nature of interpretation. (Kent, 1989, should be credited with linking the term *paralogic* to hermeneutics, p. 25.) This uncodifiability derives from what has been called *externalism* and a subsequent emphasis on the primacy of communicative interaction.

Paralogic theorists claim all interpretation and hence all understanding arise directly out of communicative interaction. These theorists, therefore, reject what they identify as a central presupposition of most writing theory and research: the *internalist* presupposition that a Cartesian split exists between the human mind and whatever is outside of the mind—a split that must be mediated by "some sort of epistemological network" internalized and employed to gain knowledge of reality (Kent, 1993a, pp. 97–126). In rejecting this internalist idea, paralogic theorists also reject what they see as a central constructionist tenet: the notion that, because communities are constituted by their languages, being a member of a community and internalizing the communal language are prior requirements for understanding (Kent, 1993a, pp. 97–126). Citing a long philosophical tradition, paralogic theorists assert that "no split" requiring mediation "exists between an inner and outer world" and claim instead that understanding develops out of "the give and take of communicative interaction" [illegible] 1992, pp. 97–126). This view of the relationship between the mind and reality has been called externalism.[2]

Because paralogic theorists believe that understanding comes through communication, the interpretive or hermeneutic act can never be outlined in advance of an interaction. As Kent (1989), based on the work of Davidson and Bakhtin, asserts, this act is open-ended and dialogic (pp. 25, 37) and, therefore, cannot be determined by the language practices of communities. For paralogic theorists, the hermeneutic act is truly uncodifiable (Kent, 1989, p. 25).

Because paralogic theorists essentially reject tenets they see as central to social construction and its ideologic critique, paralogic hermeneutics constitute a major departure from these approaches. Thus paralogic theorists posit alternate conceptions of community, knowledge and consensus, discourse conventions, and collaborations—conceptions that would significantly modify research in professional communication done under a paralogic rubric.

COMMUNITY

Paralogic hermeneutics' most fundamental critique of social construction involves its concept of community. According to paralogic theorists, this constructionist concept leads logically to the claim that the shared bodies of beliefs constituting communities are internalized by community members as ways of organizing experience existing before and mediating understanding. Based on the work of Davidson, paralogic theorists term these ways of organizing experience *conceptual schemes* (Dasenbrock, 1991, pp. 9–11; Kent, 1991, pp. 425–426; Kent, 1993a; Kent, 1993b).

Paralogic theorists claim that the constructionist concept of community, which appears to entail conceptual schemes, cannot account for certain commonsense notions we hold. If, for example, a community's socially justified beliefs form a conceptual scheme or framework endorsed by the community, then beliefs must be entirely relative to communities, and no belief can be said to be truer than another (Dasenbrock, 1991, p. 10; Kent, 1991, p. 426). In addition, if beliefs as conceptual schemes are essential because they enable people to understand one another, then members of a community can only know the unique conceptual schemes that shape their lives. [illegible]

sions of social construction are problematic because we clearly do hold statements to be true and we clearly do understand others who live in different communities (Dasenbrock, 1991, pp. 10–12; Kent, 1991, p. 426; Kent, 1993b). Thus, citing Davidson, these theorists claim that the social constructionist understanding of community as an entity defined by a conceptual scheme must simply be incorrect (Dasenbrock, 1991, pp. 10–11; Kent, 1991, p. 428; Kent, 1993d). At the same time, the ideologic understanding of community, where its norms would be broadened to include marginalized voices, is also incorrect (Kent, 1991, pp. 439–441). Instead, in order even to recognize communities and understand their discourse, communicants must hold some views in common—views that cannot be relative to the conceptual schemes of the communities to which communicants belong.

Paralogic theorists, then, object to "the very idea" of the constructionist discourse community (Kent, 1991), focusing instead on the rapport experienced by communicants as they interact. This paralogic reformulation of the concept of community, with its insistence on the primacy of communicative interaction, has major implications for professional communication research. Specifically, because paralogic theorists do not believe that communities' conceptual schemes regulate discourse in advance of an interaction, research would no longer examine the ways communities determine communication by means of their shared values, beliefs, and norms. Instead, researchers would focus on the uncodifiable nature of communicative interactions. Paralogic theory also mandates that researchers abandon attempts to make binding generalizations across interactions or arrive at totalizing theories about communities, such as Bruffee's constructionist theory of communities as peers who share socially justified beliefs or ideologic critics' theory of reproductive ideology. To paralogic theorists, all such attempts at totalizing generalizations serve to codify and reduce to a system a hermeneutic act that is essentially uncodifiable. Hence, although descriptions of the way interactions occurred in a management consulting firm or an academic discipline would be possible and even helpful, such descriptions could not be used to derive theories that might then be applied to explain other

Finally, paralogic theory would resist research that attempts to arrive at definitive rules for effective communication within social groups. Basing this resistance again on the uncodifiable nature of the hermeneutic act, paralogic research might offer suggestions about what appeared to be useful strategies within specific interactions—what Kent (1993d) terms background knowledge about writing—but paralogic theory would preclude codifying these suggestions as requirements for good writing that could be applied before communicative interactions. This focus on communicative interaction and the uncodifiable nature of the hermeneutic act also informs the paralogic concept of knowledge and consensus.

KNOWLEDGE AND CONSENSUS

Paralogic theorists also disagree with social construction's understanding of knowledge and consensus, claiming that knowledge cannot, as social construction appears to believe, be viewed as consensually held values, beliefs and norms internalized as community members' conceptual schemes. In place of this constructionist understanding, paralogic theorists assert that knowledge is an agreement reached with other communicants through the process of interacting.

In order to reach this agreement, communicants participate in hermeneutic guessing (Kent, 1989, p. 29), until they arrive at an admittedly temporary rapport (Dasenbrock, 1991, p. 13). This rapport is due to communicants' adjusting two types of guesses or "theories": what Davidson (1986a) calls prior and passing. As paralogic theorists, using these concepts, explain, prior theories are the beginning points for interactions, are "set[s] of assumptions about the dispositions, beliefs, and language-use" held by communicants who are interacting (Dasenbrock, 1991, p. 13). Passing theories are then adjustments to prior theories or guesses arrived at as communicants interact (Dasenbrock, 1991, p. 13; Kent, 1993b; Kent, 1993d). In Kent's (1993b) words:

> As a speaker speaks and a listener listens, they both possess prior theories that undergo modification as they speak and listen. As they guess about the meaning of one another's sentences, they together arrive at a passing theory, a unique

understand one another in their own singular situation.

When communicants come to share a passing theory, they have understood one another and achieved the paralogic version of consensus. This understanding is, however, always temporary as additional interactions will lead to further adjustments in both prior and passing theories.

As was true with the concept of community, this paralogic concept of knowledge and consensus, with its stress on the uncodifiable nature of the process by which passing theories are generated, has implications for research in professional communication. Specifically, research informed by this approach would redirect the constructionist and ideologic focus on the means by which beliefs are socially validated and incorporated into a community's knowledge store—in ideologic terms, the community's tendency to reproduce itself. Instead of this stress on knowledge as communities' social justification of belief, paralogic research would focus on the open-ended and dialogic character of the process of reaching temporary agreement, as communicants adjust their hermeneutic guesses. At issue would be the predisposition for constructionists and ideologic theorists to view the community as determining a body of knowledge, either through its consensually held norms or through its repressive authority structures, a view that, for paralogic theorists, violates the indeterminate nature of the hermeneutic act.

In addition, paralogic theorists would again argue with research that attempts to arrive at generalizations, this time concerning social justification. By implication, then, research would no longer aim at theories, such as Spilka's (1990) on the role of orality or Winsor's (1989) on inscription, about the way in which communication enables consensus. Nor would research aim at theories, such as Trimbur's (1989), that describe how consensus making can be improved. Because the interpretive process cannot be codified in advance of an interaction, no such generalization or theory can ensure that communicants will, in fact, reach agreement. Paralogic research thus would insist that the ability of communicants to converge on passing theories can only be described,

interactions of contributions about knowledge and consensus. Although such descriptions might well provide interesting and useful stories, adding to our background understanding of writing and enabling us to better arrive at effective passing theories, such background understanding should never be confused with prior rules governing communicative interaction. This same focus, which insists on the open-ended, uncodifiable nature of the hermeneutic act, informs the paralogic view of discourse conventions.

DISCOURSE CONVENTIONS

According to paralogic theorists, the constructionist and ideologic tenet that discourse conventions are entirely relative to communities makes impossible an explanation of how we can communicate (Kent, 1993a). Thus paralogic theorists do not subscribe to what they identify as the constructionist and ideologic position: that discourse conventions are prior requirements for communication, forming a codifiable system that can be mastered and known only by community members.

In place of this constructionist and ideologic position, paralogic theorists claim that discourse conventions derive meaning from their use by communicants (Kent, 1989). More precisely, discourse conventions are important as parts of the matching process by which communicants attempt to suit their beliefs about language to the beliefs of others (Kent, 1993a), thus enabling communicants who share such beliefs to reach agreement.

For example, when communicants share beliefs about such conventions as the imperative verbs found in sets of instructions, sexist or nonsexist language practices, visual cues such as boldface type or indentation and so on, these beliefs require communicants to make "fewer guesses" (Kent, 1991, p. 433) about each others' interpretations. Thus discourse conventions facilitate, but are not prior requirements for, the interpretive act. Moreover, because discourse production and reception escape codification, knowing or using discourse conventions can never be equated in advance with effective communication, but only with effective use of background knowledge (Kent, 1993d)

In a study of realist ethnographies, Kent (1993c) illustrates this paralogic view of discourse conventions by describing the way in which two conventions—the objectification of narration and of data—enable communicants' beliefs about the ethnographies they read to cohere with their previously held beliefs about the way in which realist ethnographies in general are written. In Kent's analysis, the objectification of narration and of data are integral to the hermeneutic process by which communicants interpret ethnographies and agree on meaning.

Kent's study—one of the few in professional communication done under the rubric of paralogic hermeneutics—is important in considering the direction for such research on discourse conventions. For example, paralogic theory would reevaluate constructionist research focusing on discourse conventions as constituting communities and ideology-based research on discourse conventions as vehicles of power and control. Taking communicative interactions as its starting point, studies informed by paralogic theory would focus on conventions as they facilitate, or do not facilitate, specific hermeneutic acts but not on conventions as prior to and dominating interactions.

At the same time, paralogic theory would urge researchers to resist both social construction's tendency to equate effective writing with the conventions of communities and ideologic critics' tendency to valorize resistance to the conventions of dominant interests as the means to more heterogeneous—and thus better—discourse. Although researchers might still describe effective communicative interactions, the uncodifiability of the hermeneutic act would prevent equating that effectiveness with theories about what constitutes good writing.

This reformulation of the social constructionist and ideologic concepts of community, knowledge and consensus, and discourse conventions, in light of paralogic theory, also leads to a reformulation of collaboration, as the basis of communicative interaction and as a pedagogic strategy.

COLLABORATION

Because paralogic theorists posit that the hermeneutic act is dialogic and hence essentially collaborative (Kent, 1989, pp. 36–37), they would accept collaborative pedagogy as possibly useful in the writing classroom. Paralogic theory, however, does challenge the theoretical underpinnings as well as the aims of much current research on collaborative pedagogy. At issue is social constructionist and ideologic theorists' implicit claim that collaborative groups and strategies can be used to teach communicative interactions and thus either help students produce good writing or empower them as individuals.

From a paralogic perspective, the idea that collaboration can be used to teach communicative interactions is based on the mistaken notion that communication is a codifiable system. When Bruffee, for example, argues that collaboration can be used to acculturate students to discourse groups, he appears to assume that, because communities and conventions are prior requirements for communication, good writing consists of mastering normal discourse. Similarly, when Trimbur or Berlin argue that collaboration (vis-à-vis dissensus or conflict) can help empower students by drawing their attention to the systems of power that shape their lives, these ideologic critics assume that structures of authority regulate communicative interactions.

In both instances, collaborative pedagogy is based on the notion that communities and conventions make communication and structures of authority possible and that collaborative strategies and group work can facilitate either mastery of or resistance to these conventions. For paralogic theorists, however, the hermeneutic act should be the focus of writing pedagogy and the goal of the collaborative classroom. According to Kent (1993a), writing teachers should "encourage students to think about writing as a communicative interaction and not as a skill, like riding a bike, that can be mastered and internalized." To facilitate this understanding, interaction in the classroom would take the form of one-on-one student/teacher collaborations (Kent, 1993d). As collaborator, Kent (1993a) explains, "the teacher would hold no privileged body of knowledge that the student would need to ferret out. Instead the teacher would collaborate actively with the student to learn to write as we [fellow language users] write."

Collaborative pedagogy informed by paralogic hermeneutics would significantly modify collaboration as it is currently conceptualized in [illegible]

structionist and ideologic research and instruction, requiring that teachers and researchers rethink the aims of many collaborative activities as well as the claims of much existing research on collaboration. Paralogic hermeneutics, for example, would require that teachers of professional communication no longer hold acculturation as the aim of peer editing groups and small-group writing projects because acculturation assumes that good writing can be reduced to internalizing discourse conventions. Paralogic theorists argue that collaborative group members cannot draw on a store of conventions that will necessarily translate into effective documents. Conventions are background knowledge or strategies that group members might find useful, but the effectiveness of these conventions cannot be prescribed in advance.

Because strategies for effective communication cannot be known before, but only emerge during, communicative interactions, paralogic hermeneutics also asks that researchers not attempt to codify collaborative interchanges and generalize about the relationship between these interchanges and effective or ineffective writing. For paralogic theorists, discoveries about interpersonal exchanges that emerge from empirical studies or observations of collaborative groups might be helpful in expanding students' fund of background knowledge to be drawn on when writing, but these discoveries cannot be codified to determine in advance that which will be effective for subsequent groups.

Finally, paralogic theory would ask that ideologic critics rethink the issues of collaboration and empowerment. Because Myers, Berlin, and Trimbur see structures of authority, like they see conventions, as forces that exist before communicative interaction, their understanding of dissensus and other such collaborative strategies can never truly empower individuals. Collaborative groups still remain imprisoned within norms that constrain communication. Thus, although paralogic theorists would agree with many of the political questions ideologic critics raise about collaboration and empowerment, paralogic theorists would embed issues of power within specific communicative interactions, making empowerment a possibility because communicants are no longer prisoners of prior conceptual schemes. Instead, communicants can be empowered through their sensitivity t

In summary, paralogic hermeneutics represents a major departure from the social constructionist and ideologic approaches. Paralogic theorists, for example, differ from social constructionist and ideologic theorists on such fundamental issues as the nature of both interpretation and communication. These differences, in turn, lead paralogic theorists to reinterpret the constructionist and ideologic concepts of community, knowledge and consensus, discourse conventions, and collaboration, in light of assertions about the external nature and the importance of communicative interaction and the uncodifiability of the interpretive act.

The existence of these three approaches—all social in nature but at times radically different in their theoretical presuppositions—underscores our claim for considerable diversity among theorists adopting a social perspective. In the following section, we assess the major contributions of each approach and we speculate on the challenges the ideologic and paralogic hermeneutic approaches are posing, in terms of the directions for further research.

ASSESSMENT AND DIRECTIONS FOR FUTURE RESEARCH

Any assessment of the three approaches must rightly begin by acknowledging the major contribution that constructionist theory has made to professional communication studies. Without question, Bruffee and others attempting to articulate a constructionist position deserve credit for bringing attention to key presuppositions in social theory and for showing how these presuppositions might recast conversations about writing pedagogy and research. As many of the studies in professional communication that we cite in this chapter suggest, constructionist notions of knowledge and communication as socially situated phenomena have effected a major shift in many researchers' investigations toward the culturally specific and the local contexts of communication. The result has been a widening of the research agenda in professional communication, to include qualitative and quantitative studies of the organizational, institutional, and classroom contexts in which writing occurs.

ies within the larger arena of cultural studies. Because many scholars in professional communication now share with scholars in literature and the social sciences a belief in the constructionist concept of the social nature of communication, constructionist theory has helped foster links between professional communication and other disciplines. The result has been to bolster an identity for professional communication as a cross-disciplinary field.

The ideologic and paralogic hermeneutic approaches, meanwhile, must be credited with reinvigorating discussions of social theory and with deepening our understanding of communication as socially based. Both approaches have pointed out the dangers of uncritically accepting the presuppositions and vocabulary derived from constructionist theory. By working to unpack expressions like *discourse communities, community of knowledgeable peers,* and *the social construction of knowledge,* ideologic and paralogic critics have encouraged more careful scrutiny of constructionist claims and more thorough consideration of the implications of these claims.

In so doing, both the ideologic and paralogic approaches offer important and perhaps even dramatic challenges for the direction of professional communication research. At the heart of these challenges, moreover, is the essential question: Can the ideologic and paralogic hermeneutic approaches be incorporated into existing research agendas and professional communication courses without undercutting the way in which many researchers and teachers in professional communication currently define and conduct their work?

Regarding the ideologic approach, the answer to his question is both yes and no. The answer is yes if ve take the ideologic approach to mean enlightening tudents about some issues of gender, race, and class nd the tendency for certain voices to be marginalzed in discourse situations. Researchers like Lay, for xample, give every indication that communication ourses can incorporate instruction on gender bias nd that this instruction can translate into larger cultral change, as students take more egalitarian comunication strategies to their collaborations in the orkplace.

The answer is no, however—the ideologic approach cannot be incorporated into existing ways researchers and teachers in professional communication define and conduct their work—if the ideologic approach is understood to mean critiquing and maybe even resisting the larger economic values of a commodity culture. Such critiques could significantly refocus research and pedagogy in ways that threaten the idea of a cooperative relationship existing between academe and industry and between research and professional practice. For example, by refocusing research on communication as a vehicle for serving and protecting the economic interests of dominant groups, the ideologic approach creates a potentially adversarial relationship between researchers and the very organizations and agencies that are the object of study or the sources of funding for researchers' work. This adversarial relationship subsequently calls into question the likelihood of researchers gaining access to organizations for ethnographic or empirical study as well as the opportunities for researchers to pursue questions that may be contrary to the political interests of funding agencies. Pedagogy informed by an ideologic approach could similarly threaten the possibilities for cooperation by undercutting the idea that writing in the classroom and writing in the workplace are complementary, mutually supportive activities. Rather than helping students make the transition to the communication demands of their jobs, the ideologic approach would help students understand the ways in which workplace communication practices may protect private interests and subvert the larger public good.

Because the paralogic hermeneutic approach challenges existing ideas about the codifiability of communicative processes, the approach, like the ideologic, refocuses research and pedagogy in ways seemingly incompatible with current views in professional communication. For example, the paralogic concept of communication—that communication is enabled through individual interactions rather than by communities and conventions as prior conceptual schemes—undercuts an implicit goal of many studies of workplace writing: to identify and codify effective writing practices. Denying that ethnographic or empirical studies can allow us to arrive at generalizations about the writing process, paralogic theory thus recasts research claims, holding that such studies may yield rich and interesting stories but cannot lead to larger theories about collaborative or other writing processes in the workplace.

Paralogic hermeneutics effects an even more radical shift in the pedagogic goals of professional communication courses. Again, by refocusing attention on communicative interactions and the uncodifiability of these interactions, paralogic theory undercuts traditional ideas about writing as a teachable skill. The approach thus calls for a dramatic reinvisioning of the function of professional writing classes, including the instructional techniques employed there, away from either enculturation into or resistance to the norms of communities and toward a concept more akin to one-to-one collaboration.

In light of the provoking challenges that the ideologic and paralogic hermeneutic approaches offer social conceptions of writing research and pedagogy, it is difficult to say the extent to which future research will actually be driven by either of these approaches. Clearly these approaches expand our understanding of a social perspective and open new possibilities for conceptualizing the social nature of our work. Because the ideologic and paralogic hermeneutic approaches also, however, challenge certain fundamental beliefs about our research and teaching, we can only wait to see the nature of the debate and discussion that these approaches may generate and whether they will, in fact, lead us to a more self-conscious examination of the social perspective in professional communication.

NOTES

1. Because Bruffee's articulation of social construction appears to be the most commonly cited in professional communication research, we focus here on Bruffee's interpretation of constructionists tenets. Clearly, some critics have taken issue with Bruffee's readings of these sources (see, for example, Greene, 1990).
2. It is not possible here to work out the full line of reasoning behind the paralogic hermeneutic critique of social construction and internalism. Much of this reasoning builds from such key concepts as *conceptual schemes* and *passing theories* (which we touch on in our subsequent discussion)—concepts derived directly from Davidson's philosophy of language. For additional background, see Davidson (1986a, 1986b, 1986c, 1986d).

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