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**A rhetoric of boundaries:  
Living and working along a technical/non-technical split**

**by**

**David Paul Clark**

**A dissertation submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
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## CHAPTER 1: INTRODUCTION

*...whatever appears as universal or indeed standard is the result of negotiations, organizational processes, and conflict (Bowker & Star, 44)*

### INTRODUCTION: STUDYING CATEGORIES

People categorize, and supporters of post-structuralist theory have frequently made their primary task deconstructing those categories. Foucault's late career, for example, was spent articulating the inconsistencies and constructions underpinning arbitrary discursive categorizations like sanity/madness, criminality/responsibility, and nature/culture (cf. *Madness and Civilization* and *Discipline and Punish*). When I first began to acquaint myself with post-structuralist theory, I made the mistake that many do of assuming that the implication of Foucault's and related scholarship is the *destruction* of these categories, the elimination of the center. But the implication is far less severe than that; most frequently this work simply recognizes that categories like our peculiar Western division of "nature" and "culture" are *constructions*, not necessary or truth-bound or transcendent.

To these works, I am sometimes tempted to respond "I get it, already! The distinction is arbitrary!" Yes, categories dissolve on close inspection, and yes, much important work has been done by pointing out the fallibility of other people's categories (for example, work in rhetoric points out the false distinctions Ramus, among others, made between style and substance, rhetoric and "content"). But so much work has been focused on what I'll call "hybridization," on merging seemingly distinct categories, that readers can easily forget that categories are both (1) unavoidable, as Jo Freeman argues in "The Tyranny of Structurelessness" and (2) useful and worth investigating on their own

merits, as Bowker and Star argue in *Sorting Things Out: Classification and its Consequences*.

Bowker and Star point out that the attempt of postmodernists to identify the fallacies of these splits, while it serves a valuable purpose, fails to eliminate the splits or explain why they are so prevalent and powerful both in the culture at large and in our scholarship: “Few have looked at the creation and maintenance of complex classifications as a kind of work practice, with its attendant financial, skill, and moral dimensions” (5). Doing so is important because none of us are above or free from any of these categories. We live in a world where splits like “technical” vs. “non-technical,” although they’re constructs, *exist* and do real work. The ideological concerns that lead us to energetically deconstruct these categories might be applied just as effectively to examine how and why categories like “technical” and “non-technical” are so ubiquitous and powerful.

I propose in this dissertation, therefore, to follow the lead of Bowker and Star, Gary Downey, and other social scientists and historians in seeking not to prove the unreality of a conventional categorization like “nature/culture” or “technical/non-technical,” but to investigate the day-to-day operation of the category and the way that it is devised, constructed, deconstructed, problematized, actively used, acknowledged, and hidden by the people it affects most directly in a given context. Specifically, I propose, through an ethnographic study of an Internet startup company (SecureCom, Inc.<sup>1</sup>), to study what I’ll refer to hereafter as the “technical/non-technical split,” the arbitrary but

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<sup>1</sup> “SecureCom” and all participant names have been changed to protect company and participant anonymity.



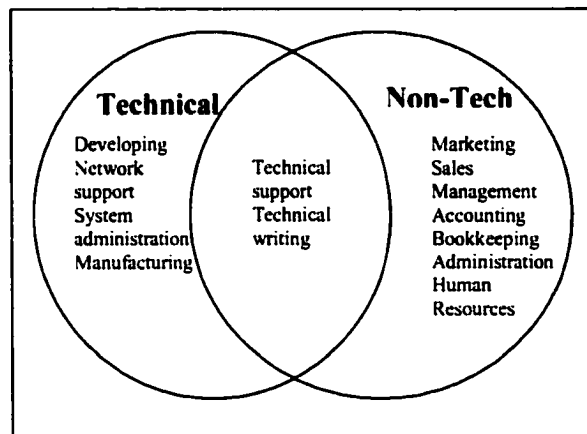
powerful separation of “technical” work from other, “non-technical” work. I choose this separation to examine partly because it is so powerful, because it is so commonly used to engender prestige for some over others and to distribute and re-distribute various forms of capital. My point in studying this separation is to acknowledge and demonstrate from a rhetorical standpoint the power of articulation, to describe and discuss the discursive force inherent in our linguistic decisions to label things as “this” and “not this” as a means to achieving conscious and unconscious sociopolitical goals. In the remainder of this introductory chapter, I define my use of my terms, justify my selection of “technical/non-technical” over other categorical schemes I could have studied, and explicate my specific research questions. I conclude with a forecast of the rest of the dissertation, including a brief overview of each of the five chapters that follow.

#### **THE TECHNICAL/NON-TECHNICAL SPLIT**

I begin by defining my use of “technical” and “non-technical.” I don’t propose to define “technical” and “non-technical” in any sort of permanent or Platonic sense; I suggest here only that a common split exists in the way that people (including myself) use the terms on a day-to-day basis, and I rely on the articulations used by my participants both in demonstrating the existence of the split and in discussing the impacts of that split. After all, a technical/non-technical split is not natural or a given. That is, people or objects are not inherently or exclusively “technical” or “non-technical,” except as they are defined through human articulation. In fact, as I discuss below and in my literature review in Chapter 3, a significant line of scholarship argues that technologies and technologists are not exclusively “technological,” but are in fact technosocial,

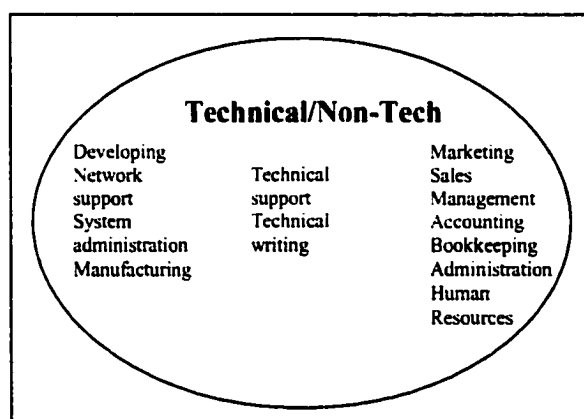
constructed and given status and meaning as “technical” *only* within social contexts. When one considers this argument—with which I agree—it is difficult to maintain the common, day-to-day separation between “technical” people and objects and “non-technical” people and objects that is my focus here; even those not familiar with this argument can be easily persuaded to see the problems with this simplistic dichotomy.

For example, in the interviews I conducted in my SecureCom study, I asked participants to elaborate on their concept of what “technical” meant and who they considered to be a “technical” person. The software developers I interviewed, confident in their own positions as “technical people,” began with a definition that essentially described themselves and created a continuum of “technical-ness,” tying “technical” to computer and mathematical prowess and, like Ellen Ullman in *Close to the Machine*, to the amount of interaction an individual had with the guts of machines themselves. For example, they rated a developer who works with machine code as *more* technical than one who develops the user interface, and in turn rated interface developers as more technical than a user or a help desk operator, both of whom must use and understand the machine but don’t program it. The developers saw technical writers and technical support personnel as boundary crossers, neither completely technical nor completely non-technical. However, they were hesitant to see people who worked farther from machines (in this case, desktop computers) as “technical”; the marketing director, after all, wasn’t very proficient with her e-mail software, and the VP couldn’t always keep up in technical conversation. This initial participant division of the technical/non-technical is shown in Figure 1-1.



**Figure 1-1: Initial Participant Definitions of Technical and Non-Technical Work**

When pressed even slightly, however, participants' definitions broadened significantly to resemble the division shown in Figure 1-2; the SecureCom accountant was technical because he worked with numbers, as the firm's technical writer I was technical both because I worked with technology myself and because I possessed a "technical" understanding of the way language operates, and even the marketing director was technical because she possessed carefully honed knowledge and skills from a



**Figure 1-2: Rethought Participant Definitions of Technical and Non-Technical Work**

specialized discipline. In other words, when challenged, their stock notion of “technical” was easily broadened to the point that it barely held on to their original meanings and certainly allowed them none of the initial prestige they seemed to draw from the term. “Technical” quickly moved from “connected to the machine” to “having specialized skills.” Thus, even for people who have a significant stake in the hierarchy implied in their use of the technical/non-technical boundary, the boundary is easily permeable, and, finally, few people and objects are not seen as both technical and non-technical. Nonetheless, the technical/non-technical divide is pervasive; my participants were surprised by how easily holes could be poked in their definition of “technical,” but they were equally surprised that I’d even questioned their definition. The conventional definition of “technical” had been naturalized to the point that it was part of everyday conversation, and, therefore, did not need to be defined.

“Technical” is used every day by SecureCom workers to differentiate their work, their machines, their understandings and those of others. “Non-technical,” by contrast, is a less frequently used term that in most cases means, simply, the lack of technical. “Non-technical,” too, is a highly contextualized term, although my participants (and I) seldom think of it that way. An engineer who works on generating power from hydraulic dams would doubtless be considered “technical” in a general sense, but, lacking specific skills that would enable her to get close to the machine, could have only a “non-technical” role at SecureCom. “Non-technical” workers are almost never referred to as “non-technical”; their work simply lacks the prestige “technical” tag that would (as we will see) cause it to be more highly valued within the organization.

In this dissertation, my definitions of “technical” and “non-technical” rely on my participants’ conventional uses of the terms. Why do these conventional definitions matter? Because even though, as I have shown, the definitions are arbitrary and easily challenged, as Bowker & Star, Downey, and others argue, they do significant work in organizations. At SecureCom, the technical/non-technical split worked in collaboration with writing to determine the way the company grew, both defining the way writing was used and itself being defined by company writing practice. Early on the split was active for my participants—all of whom were “technical people”—impacting the ways they decided to develop the company in that their own understandings of “technical” vs. “non-technical” drove the ways they divided labor, space, and writing tasks. Those divisions in turn created and perpetuated the split on a company level, as the human actors enlisted writing as a technological tool, as a means to help them create the desired network for building and selling their technology. Over time and through the development of the company and the split, writing was also enlisted to serve a regulatory function, serving to further create and perpetuate the split as it was technologized to enforce both official and unofficial social arrangements. In all cases, writing was used as what Star and Greisemer refer to as a “boundary object,” an artifact plastic enough to be adaptable across multiple viewpoints, yet maintain continuity of identity. In the case of SecureCom, writing sat on the boundary of the technical and the non-technical, providing both the distinction itself and the means for perpetuating the distinction.

## **WHY STUDY THE TECHNICAL/NON-TECHNICAL SPLIT?**

I suggest that studying the technical/non-technical split is important for two key reasons: (1) because the split has an impact on organizational life and culture, and (2) because the split is a central topic of much scholarship in rhetoric and professional communication and other fields.

### **The Split has an Impact on Organizational Life and Culture**

Many (even *most*) U.S. organizations have highly developed technical/non-technical splits that have enormous impacts on day-to-day life and work within those organizations, and the so-called new economy of the information age has stabilized and accelerated the formation of the split. As more and more work shifts from manufacturing to service and “symbolic analysis” or “knowledge work” (Reich, Dertouzos), work for many has been de-hierarchized (Drucker, Davenport and Prusak). As workers have moved from assembly lines where they simply took orders and carried out simple tasks thought to require little intellect (e.g., repetitively twisting the same bolt over and over on an assembly line) to skill- and knowledge-driven work with technologies that empower them by providing access to information and allowing independent decision-making, they flatten traditional organizational hierarchies by eliminating much of the Fordist/Taylorist middle management that existed only to manage that information and make those decisions (Negroponte, Gates, Dyson).

At the same time, this restructuring has tended to reify other structures; the technical/non-technical split, for one, is alive and well in organizations as new “technical” divisions have been formed both in educational institutions and in

corporations that exist to supply the technological infrastructure necessary for this knowledge work. As before, “technical” schools train students in trades like truck repair, system administration, and computer programming, and increasingly, universities offer similar programs. The corporate world mirrors these structures in that virtually all corporations now have a “technical” side, an information technology department responsible for upkeep of the organization’s computer systems. Further, a service industry of hundreds of companies has organized solely to provide consumers and other businesses with now-essential computers and software.

And many companies have a mature technical/non-technical split that structures their work and reward systems. In software firms, computer programming departments are physically isolated from others in the company to avoid distractions from the more non-technical work of other workers; at one local company here in Ames, developers were physically separated by a door that required key-card access, at another, non-developers were allowed in the development area only during “morning zoo” hours first thing in the morning, after which they were required to leave the area. The split also structures work in smaller but equally tangible ways. At SecureCom, for example, development’s “technical” interns were routinely hired at \$10/hour with technical experience but without college degrees; technical writing and marketing interns were hired at as little as \$7/hour and were obliged to fight for increases after obtaining degrees that—according to company intern policies—should entitle them to raises. The justification was the self-fulfilling prophecy of market forces based on the split, the notion that “technical” jobs should and would be more highly rewarded because of the

availability of personnel (despite the relative ease of finding technical employees so close to a university of science and technology).

The result, as I suggest through my data analysis in this dissertation, is the re-distribution of capital, which in Pierre Bourdieu's terms suggests not only monetary capital but also social, symbolic, and cultural capital (*Distinction*) that determine the value placed upon an employee's work and the freedom and autonomy an employee has within her/his job. I suggest that this capital distribution is worth studying as it argues against the implicit valuation of "knowledge work" suggested by many economists, social scientists, and pop culture theorists. For example (as I discuss in Chapters 4 and 5), at SecureCom technical writers and marketers—"knowledge workers" by all assessments—had limited freedom to choose their tasks, were bound by their job categories to address and embrace the ideologies of the products and services they supplied, and were relatively poorly rewarded for their work. SecureCom's "technical" workers, by contrast, had more freedom, had the luxury of isolating their work from the politics of their products, and had access to far more resources. The very articulation of "technical" work, I suggest, is worth investigating because it creates a new category of privilege, a dichotomy that excludes others to the benefit of the "technical" few.

### **The Split in Scholarship**

The technical/non-technical split is also important to study because it is alive and well in rhetoric and professional communication scholarship, as we can see from the very existence of subspecialties like the "rhetoric of science" and the "rhetoric of technology," specialties that focus specifically on scientific and technological contexts as opposed to



non-scientific and non-technological contexts. These fields of study are relatively young, and are still in development; in fact, the rhetoric of technology has only existed as a category for a few years, formed in opposition to what scholars saw as the limited ability of rhetoric of science to approach technological contexts.

After all, the numerous discursive skirmishes (e.g., the Sokal affair) that are known in rhetoric, history, and the social studies of science as the "science wars" and are the primary focus of those scholars have focused, not surprisingly, on science (Latour *Pandora's Box*, Gross and Levitt, Sokal and Bricmont). Scholars in science studies and the rhetoric of science handle technological contexts only by conflation, via the assumption that adding "and technology" to "science" is sufficient to broaden the scope. In fact, until recently, many scholars have treated technological contexts as simply extensions of the scientific realm, accepting the assumption that studies of and about scientific contexts covered technical realms as well by default.

But in the editor's introduction to the July 1998 special issue of the *Journal of Business and Technical Communication*, an issue dedicated to the rhetoric of technology, Dorothy Winsor identifies a significant new gap by suggesting that the "and technology" so often tacked onto the end of "science" in scholarly discussions may be connected to a misleading understanding of technology as an "afterthought" to science (286). Scholars in science and technology studies (STS) seek to work in the opposite direction, deconstructing what they see as an unnecessary dichotomy between science and technology by claiming that science and technology use the same processes and function in the same way. For them, this work collapses a problematic distinction; they have long recognized the dissimilarities between science and technology and now gain theoretical

benefits from moving towards a merger. But for rhetoricians, the movement is necessarily towards reestablishing the distinction in order to avoid simplistic conflation of science and technology to which scholars in the humanities may be prone because they see science and technology as equally foreign others.

For example, Carolyn Miller works to reestablish the distinction by problematizing our understandings of technology as an “afterthought”; she presents four models of the complex ways science and technology inform each other. Charles Bazerman problematizes the conflation of technology and science by pointing to differences in the ways they are practiced in some of their most common forums (corporate workplaces and academic institutions, respectively). For example, scientists have the luxury and, arguably, necessity (due to the now-rigid expectations of others in the scientific community) of considering their work clearly split from other, overtly cultural spheres. The work of workplace technologists, however, is by its nature dependent upon constant and conscious interaction with other cultural enterprises such as business, management, computer science, engineering, and technical writing (Bazerman, “Production” 383).

Why is drawing this science/technology distinction important, particularly when it is a distinction not embraced by many scholars in other fields? Because Winsor's, Miller's, and Bazerman's work points to key differences between science and technology, pointing us to questions “settled” in the rhetoric of science that should be asked again in the rhetoric of technology. For example, much recent work in the rhetoric of science draws on scholarship in science studies that illuminates the Enlightenment-born segregation of scientific work from the messiness of non-scientific social forces. This

revision of the scientific realm into what Sharon Traweek calls the “culture of no culture” (162) rendered scientific work transcendent, granting scientists a cultural authority known by few others in our culture. Rhetoric of science scholars seek to demonstrate how this science/non-science split is a rhetorical construction, arguing that not only is the absence of rhetoric sought by scientists itself a rhetorical stance, but that the very foundations of science are rhetorical constructions devised to, among other things, further the social goal of creating and continuing the dominance of the scientific method (cf. Bazerman *Shaping*, Myers *Writing*).

But as Bazerman suggests, technological contexts are far more overtly integrated in and inseparable from other social spheres and are, therefore, more overtly structured when they are forced into a technical/non-technical mold. They thus deserve investigation in their own right and in very explicit technological terms. I suggest that while the technical/non-technical split has been an implicit subject of discussion of much scholarship in rhetoric and professional communication, our scholarship could benefit from a more explicit address of the type that has long since occurred for science in the rhetoric of science.

#### **SITUATING THE STUDY/RESEARCH QUESTIONS**

In sum, I propose to study the technical/non-technical split in a manner that addresses both (1) the impacts of the split on contemporary organizations, and (2) what I identify as a hole in our current scholarship. I address these two points through an ethnographic study of the technical/non-technical split as it is constructed and implemented in a small company, a study that allows me to both tap into a material

experience of the split and put our scholarship to the test. Although the technical/non-technical split, of course, has a long history of investigation by scholars in rhetoric and professional communication, it is usually only discussed implicitly, as in work that discusses, say, the rhetoric of online chat rooms while employing an unstated assumption about the rhetorical underpinnings of the technology itself. I categorize this previous work into two categories of investigation I refer to as “technology is not rhetorical” and “technology is rhetorical”; I expand on each of these categories in my literature review in chapter 3, but here is a brief but serviceable overview:

- **Technology is not rhetorical.** Scholars in this grouping tend to reify the split uncritically, ironically enough, via the claim that technology itself is not rhetorical. These studies take one of two stances: instrumentalist or substantivist (Feenberg). The instrumentalist viewpoint represents technology as having an inevitable positive or negative impact on non-technical society (e.g., classroom chat software is inherently liberatory, empowering students to deconstruct traditional classroom hegemony). The substantivist viewpoint, on the other hand, represents technology as entirely neutral, its positive or negative impacts being determined entirely by human use (e.g., online documentation software is either useful or not useful; its impact on the writing itself is dependent only on the user). In either case, rhetoric is isolated into the human realm of the “non-technical” and cannot affect the technology itself, which is either overwhelmingly negative or positive in its impact on humans, but is unquestionably distinct from the human social realm (cf. Landow, Lanham, Bolter, Selfe and Cooper, and Faigley’s early

work on computing, and also many past and present texts on technical writing that treat technologies as objects rhetorically trivial to communicative practice).

- **Technology is rhetorical.** These scholars view technology as rhetorical in one of two ways. Some view the technical/non-technical split as being rhetorically similar to other long-contested splits like "science" vs. "rhetoric" or "science" vs. "culture," splits that have been characterized by some as false distinctions due to empirical evidence of the social construction of scientific knowledge and authority (cf. McCloskey, Bazerman *Shaping*, Myers *Writing*). Others have focused more explicitly on technology, some arguing that technologies are rhetorical constructions with negotiable impacts on society; for example, Hawisher and Selfe suggest that classroom computers, although they are not (as some have argued) inherently ideologically suited to liberating pedagogy, can through critical thinking become compatible with our educational goals. Others explicitly use rhetoric to crack open black boxes and re-negotiate technological impacts; for example, Selfe and Selfe rhetorically analyze the computer interface with the goal of demonstrating the corporate ideologies underlying the design. The primary focus of both positions is to hybridize, to delete remaining boundaries between what is "technical" and what is "non-technical" (cf. Lay "Computer," Gurak).

In investigating the split, my study does not follow the lead of either the "technology is not rhetorical" or the "technology is rhetorical" groups. My own inclination is to agree with the second group's claim that the technical and the non-technical are theoretically and practically inseparable. However, I also believe that most people in our culture see

the technical and non-technical as separate, with writers and rhetoric as part of the non-technical. Thus, I focus instead on examining the way the split between the technical and the non-technical is enacted in a cultural context, examining the work that the split accomplishes for people whose work is defined very explicitly by the split that they live with and re-articulate daily. In doing so, I emulate sociologist Gary Downey's ethnographic work, work that "shifts the problem of analysis and participation from a priori efforts at drawing or erasing the boundary between humans and machines to figuring out how such boundaries get drawn and lived in everyday experiences" (26-7). What separates my work from Downey's is my rhetorical focus, my emphasis on studying the discursive practices that were employed and shifted to re-form and re-articulate the technical/non-technical boundary as SecureCom changed from a small, technosocial company to a larger, more formal and conventional organization with a highly developed technical/non-technical split. During my time at SecureCom the organization evolved its conception of the split, never entirely moving away from a highly conventional conception of the split but nonetheless changing the split and the company in intermingled ways.

By drawing on past and present scholarship in rhetoric and professional communication, science studies, and history of science, and in particular the rhetoric of technology, along with my own ethnographic data from SecureCom, I propose to address the following questions about the operation of the technical/non-technical split in an organization:

- How is the technical/non-technical split enacted through discursive acts and objects in daily work, and what functions does it serve?

- How does the technical/non-technical split impact workers, daily work, and growth?
- What are the larger impacts of the split on technological contexts? Who benefits, who loses, and what is gained and lost?

I focus, naturally, on investigating the rhetorical construction and work of the split, examining how textual genres are enlisted and reflect and produce the split and how the split paradoxically problematizes and yet makes technical work possible.

### **Theoretical Lenses**

In investigating the split, I rely on two seemingly unrelated theoretical perspectives that, indeed, I use very separately for different kinds of analysis in relation to different research questions. In analyzing my data to respond to my first question—"How is the technical/non-technical split enacted through discursive acts and objects in daily work, and what functions does it serve?"—discussed in Chapter 4, I rely on a version of "actor-network theory," a theoretical structure first devised by Bruno Latour. In doing so, I am answering Greg Myers's call in "Out of the Laboratory, Down to the Bay" for scholars in rhetoric to conduct actor-network based rhetorical investigations. Myers suggests that actor-network theory can help us to "demystify the boundaries drawn in social science," boundaries that we take for granted or that lead us to fail to see "organisms and technologies as part of persuasion" (36). As a result, it is a method ideally suited for my quest to examine the taken-for-granted boundary between the technical and the non-technical.

Actor-network theory, says John Law, is "a ruthless application of semiotics" that treats arbitrary dualisms such as agency/structure, human/non-human, knowledge/power, theory/practice, truth/falsehood, and technical/non-technical as *effects* or *outcomes* rather than "given in the order of things" (3). These dualisms are effects or outcomes of relations: actors achieve their form, and the relative stability of their form, as a consequence of the networks in which they are located. To use more concrete methodological terms, actor-network theory is a method of examining how actors (human or non-human) create networks by enlisting other participants (humans, texts, machines) in their causes, thus constituting themselves as "obligatory passage points" (Callon); for example, consider the creation of Microsoft's monopoly. By licensing their operating systems cheaply to hardware companies, Microsoft enlisted allies and thereby created an obligatory passage point for software developers who wanted access to the vast consumer PC market.

For an example of how this can happen, consider one of Bruno Latour's examples, that of a hotel manager. The manager, wanting to ensure that room keys are turned in whenever guests leave the hotel, enlists verbal instructions, signs, and finally an awkward, heavy weight attached to the key in order to guarantee his desired social outcome: the return of the keys. Such networks of humans, objects, and texts quickly come to seem natural to participants and casual observers. From the standpoint of a researcher, then, actor-network theory is useful in that it holds the "natural" open to scrutiny by examining such networks as they are in the process of being formed. In my ethnographic study, where I've watched a tiny, informal, virtual company evolve into a



small, more formal, traditional company, I've been in an ideal position to observe numerous networks in process (Latour "Technology").

One outcome of my position in the organization has been my own participation in the organization's activities as a technical writer, and I believe that actor-network theory can help to illuminate my own position and complicity in the creation and maintenance of the technical/non-technical split and its many impacts. Bazerman's point of the blurring of the social in technological contexts should be well taken by those of us complicit in the technological enterprise as teachers of technologists and consumers of technologies. Because, as Bazerman suggests, technological work is not even theoretically separable from other enterprises and from the market economy, an "us versus them" mentality immediately becomes untenable and we are forced to take a more complicated stance in relation to technological work. Such an overt acknowledgement of the potentially harmful politics of the participant-observer is unfortunately fairly unique in actor-network theory, which has come under attack by many more overtly political scholars than Latour, who rightly argue that it leads to a kind of ethical relativism that fails to fully recognize the impact of power and hegemony on the "stability" of network relations. My discussion of my methodology in chapter 2 takes these criticisms into account and focuses more overtly than most analyses on the relations of texts within the networked structures.

In analyzing my data to respond to my second question—"How does the technical/non-technical split impact workers, daily work, and growth?"—I rely on the sociological scholarship of Pierre Bourdieu, whose work is well attuned to assessing the value, power, and authority granted to different kinds of work. His theory, therefore,

gives me a useful lens for examining the changes in what he calls “capital” that result from the creation and maintenance of the technical/non-technical split at SecureCom.

For a brief introduction, Bourdieu suggests that individuals are inculcated from birth with a “habitus,” a “system of durable, transposable dispositions...principles which generate and organize practices and representations,” a set of deeply internalized precepts that for the people at SecureCom includes a conception of the technical/non-technical split. Bourdieu further suggests that action is shaped by the interaction of an individual’s habitus and his/her “field,” the social context in which s/he operates, defined as “a structured space of positions” in which the positions and their interrelations are determined by the distribution of different kinds of capital (14). The interaction between habitus and field is complex; a back and forth negotiation exists between the context and the individual. Moments of agency also exist, but they are structured by what is allowed. Entering a field requires accepting the underlying suppositions of that field; at SecureCom that means, in part, working within the confines of the agency and power limits of the technical/non-technical split.

Bourdieu sees power, then, as a product not simply of hierarchical structures, but of the intersection of a habitus and a field, an intersection that structures the types of capital held by individuals and the rates of exchange allowed for their capital. For example, a software developer can exchange her education (cultural capital) and the value placed on her work (symbolic capital) for a high salary (monetary capital) and/or for freedom of movement and task selection (social capital). But a marketing intern, seen as possessing less cultural and symbolic capital, usually receives less monetary and social capital in exchange. I suggest here that the technical/non-technical split is a critical, and

previously ignored, part of this equation, significantly re-shaping capital exchange possibilities at SecureCom by virtue of its position as an underlying precept of both worker habitus and SecureCom's field.

## **FORECAST OF CONTENTS**

What follows is a brief forecast of the contents of this study. I begin, as expected, with a description of my methodology and a review of relevant literature, then follow with two chapters of data analysis followed by a conclusion that ties my work back to the larger issues in our field.

- **Chapter 2: Methodology.** In this chapter, I offer a detailed description of my methodology; I address the research setting and methods, and I attempt to problematize my methodology through self-reflection.
- **Chapter 3: Literature Review.** In this chapter, instead of a traditional literature review I offer an argument. I survey past and current literature in the rhetoric of technology and categorize the literature with the goal of creating a gap into which my work fits. I suggest that past rhetorical work on technology has addressed the technical/non-technical split implicitly but never explicitly, and that my approach offers valuable new insights.
- **Chapter 4: Enacting the Technical/Non-Technical Split.** Here, I offer an extensive investigation of the history of change at SecureCom, with a focus on representing the actors and networks (humans, machines, tools, genre systems) that enabled and restricted the creation and evolution of the split over the months I spent observing. For example, I explore the ways the

organization's gradual movement from a tiny virtual company of four to a formal organization of 16 (including me; my own complicity is a crucial element here) was shaped by and shaped the split.

- **Chapter 5: Living With the Technical/Non-Technical Split.** Then, I focus on the material impacts of the split on SecureCom's workers. I discuss the way that the split caused a re-distribution of work, texts, and capital resources, including financial, symbolic, social, and cultural capital.
- **Chapter 6: Implications for Scholars and Instructors.** Finally, I close by drawing out the implications of my study for scholars and instructors of rhetoric and professional communication. I explore the impacts of my study on the rhetoric of technology and the implications of my study for contemporary understandings of the position of technical writers within organizations.

## **CHAPTER 2: METHODOLOGY**

Because the claims of my study are founded, as Gary Downey suggested, on the way(s) the technical/non-technical split gets “drawn and lived in everyday experiences,” in order to address my research questions I conducted a 15-month ethnographic study of an Internet startup company. In this chapter, I address the research setting and methods of my study, and I attempt to problematize my methodology through self-reflection, with a particular focus on problematizing my highly complex interactions with my participants. By doing so, I follow the lead of contemporary ethnographic and methodological theorists, who argue that self-reflection is critical to providing both a more accurate picture of a contextual setting and for demonstrating how my own agendas and belief systems shaped my understanding and writing of my participants’ work (Brodkey, Cintron, Lay “Feminist Theory,” Kirsch, Clough, West).

### **RESEARCH SETTING**

I spent 15 months (from January 1999 to March 2000) gathering data at SecureCom, a small company that makes Internet security products in the research park at a large midwestern university of science and technology. I got access to SecureCom through a cold call; after failing to get approval to conduct a study at another relatively small company where I was working, on a friend’s advice I called SecureCom out of the blue. They were receptive to my study and allowed me to visit and conduct initial interviews and then agreed to become my research participants, and we filled out the necessary paperwork and human subjects agreements. When I started my study, the four owner/employees—Dan, a professor of computer engineering at the university; his wife

Gina who worked full time as a tech support engineer; Susan, who worked full time as a developer; and her husband Glen, who built the hardware—were the only employees. I was very fortunate, because SecureCom was an interesting company to study due to its size, structure, and products and because they eventually became my employer (continuing to the present—I discuss the complications this raised later in this chapter); they requested that I work for them when they needed some documentation for their product, and I agreed both because I needed the money and because I hoped the work would result in greater access to the company and greater understanding of the products and services they produced.

The company's sole product throughout the time I gathered data there was ProBlocker, a hardware/software bundle designed to allow schools, libraries, and businesses to protect their networks and block access to "inappropriate, objectionable, or unproductive" sites on the Internet. This product focus led me to expect right-wing politics from my SecureCom participants, but they didn't start the company for the reasons I initially expected. They started the company because they had a "technical" idea; Dan, a Ph.D. in computer engineering who specializes in computer security, developed the patented blocking technology that underlies the product's functionality in the course of his research. The four decided to start a company to sell the product for business reasons: because they wanted to make money—an Internet site blocker was the quickest means to market for the blocking technology—and because the two women wanted jobs, particularly jobs that would allow them tremendous flexibility.

So although on my first visit Gina identified herself as a "fundamentalist Christian," the product was not particularly politically motivated, and none of the

principals was particularly in favor of the "technical" purpose of SecureCom's product; Susan in fact told me that she was opposed to their product being used for "censorship." So from the first day the company opened, the company was in an ideological bind, forced to either consciously labor for a cause about which they were ambivalent or sequester their work from the politics of their product. Fortunately, as I discuss later, the technical/non-technical split sequesters much of their work for them, making the vast majority of their work "technical problems" rather than ideological; when you spend your days trying, for instance, to make a button connect to the proper function, it is easy to lose sight of the larger social implications of your work.

Sales and buzz about the product were strong enough that the four principals were able to interest investors, and in the course of my study SecureCom acquired venture capital, moved into new office space, and hired 12 more employees. These changes were highly significant to my developing research questions that focused on the technical/non-technical split and were crucial to my being able to answer those questions. At first, SecureCom was a "virtual" company; the four owner/employees were almost never all in the same place at the same time, and the work of all four encompassed the non-technical as well as the technical; all were self-defined "technical" people who were nonetheless responsible for all the (to their minds) non-technical aspects of running a business (sales, marketing, accounting, customer service, etc.). Initially, SecureCom did not offer much to study in the way of a technical/non-technical split. The company office was a 10 x 10 room, and the work was divided so that very little interaction was required; I quickly gave up any lingering illusions I had of being "complete" in my account—I had no way

to get in on many company discussions, which occurred in private off company time over beers and loud children.

But as the company grew and became more formal and conventional, I was able to watch the formation of the split in action, as new hires, new work, and new texts became necessary and were carefully structured and enlisted to meet expectations of the corporate genre (or, as my participants put it, “the way things are done”). The growth of SecureCom was a stroke of luck that enabled me to form and address the research questions I listed above. Through careful applications of the methods I now discuss, I was able to create a new understanding of the technical/non-technical split that problematizes both mass-market and scholarly conceptions.

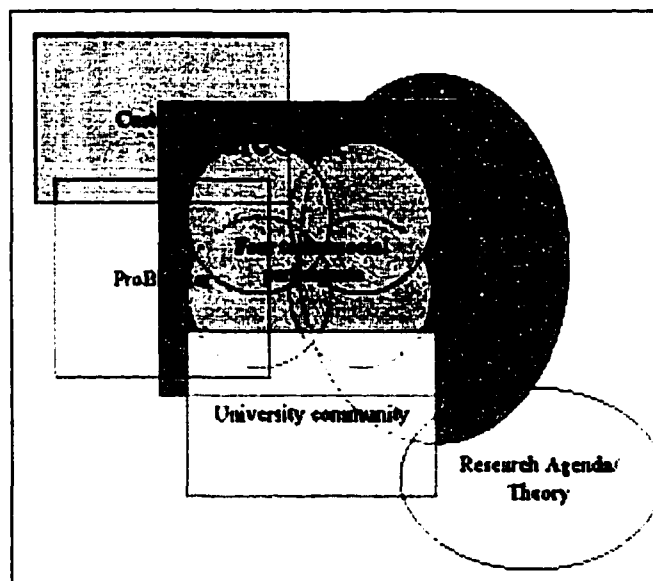
## **METHODS**

In very practical terms, I gathered data through thick description of observation and through job shadowing, through multiple participant interviews, and through document collection. But nothing was simple or straightforward about my data gathering and analysis, which were problematized by my shifting relationship with the company and my participants, by the changes in the company itself, and by the formation and solidifying of my research questions. In Figure 2-1, I demonstrate my belief that all ethnographic research (all *research*, for that matter) is participant-observer research, meaning that, as numerous researchers argue (including those I cited in the introduction to this chapter), the very act of research implicates researchers because their writing work and their presence in the context impacts the representation of the research. For that



reason, the researcher circle encompasses not only my own research agenda but also the company itself, the participants, and the university community that they and I inhabit.

But at this point, my “insider” status was still tangential and I did not work with the company’s products or customers. For the first two months of my study, I was strictly a researcher and not an employee, the company was a fairly stable if virtual structure, and I had only a general sense of my research agenda (as is common in ethnographic research [Agar]). At the time, I believed that my eventual focus would be on SecureCom’s status as a virtual organization. My presence was odd and unsettling for my participants, who were perfectly willing to participate but not entirely sure what to do with me. Gina seemed excited to have a visitor in the 10 x 10 room, and we talked about subjects seemingly unrelated to my research most of the day. Susan, who worked out of her home, was at first concerned about inviting in a stranger, and we initially met in a

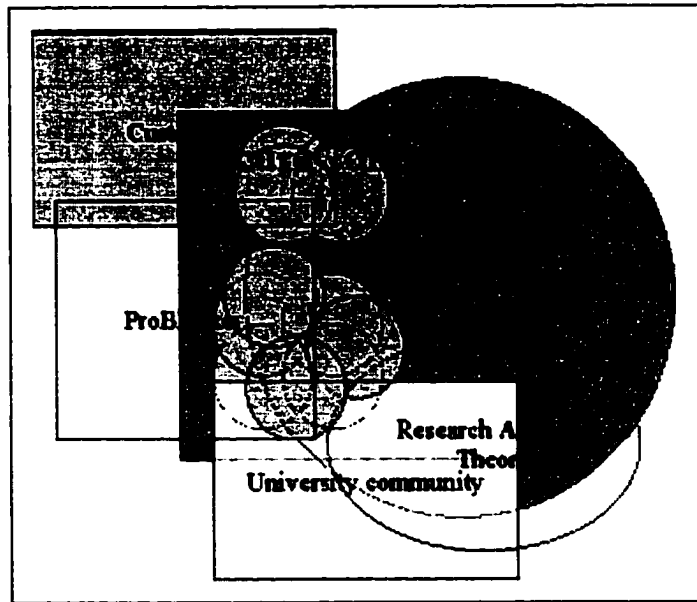


**Figure 2-1. Early relationships between researcher, researched, and context**

coffee shop before she invited me back to the house. For my part, I felt grateful to my participants for allowing me to begin the study.

During this period, I made 2-3 visits a week to the work spaces of the four owner/employees, including the 10x10 room and Susan's house, where I sat on a futon in her office (her college-age daughter's converted bedroom), sneezing as her cats crawled on me. I averaged about 10 hours a week of observation time, during which I took detailed field notes on environments (ending up with roughly 100 pages of field notes), on work practices, and on the infrequent telephone calls. I also conducted daily ad-hoc interviews about the day's work and collected documents and e-mail messages, primarily on the basis of what my participants found interesting and useful enough to share. My own research questions had not yet fully developed, so I allowed my participants to shape my research with their contributions. They (and I) knew little more during this early stage than that I was studying "communication," and they would frequently volunteer work and documents they felt I would find interesting. I, in turn, *would* find the documents interesting because the participants thought they would be interesting.

After this initial period, however, collection and analysis quickly got more complicated. Although my data-gathering methods did not change significantly in practical terms, my collection and analysis were layered with new complexity. As shown in Figure 2-2, my sphere of influence and complicity as a researcher grew to include indirect interaction with customers and direct interaction with the product, as well as interactions with other new hires. The four principals, for their part, moved their work more into product development as new employees were hired to handle customer and other external interactions; their work became more and more "technical" and the work



**Figure 2-2. Later relationships between researcher, researched, and context**

of others more “non-technical,” a development that definitively shaped my research agenda.

My being hired by the company increased my complicity in *all* of its activities; I became involved with customers and with the development of the product. This complicated my data collection and analysis in two ways. First, while I believe that all research is participant-observer work, this participant observation was of a different degree and kind than what I’d anticipated or what I’d done previously, as I became a definite part of the story I’d come to report. Any claim to “objectivity,” which would be doubtful to begin with (Cintron, Brodkey, Clough), was completely enervated by my going to work for SecureCom. Additionally, being hired made my access to data easier, but also created ethical complications. My status as a consultant, then as an employee of SecureCom, made me fully complicit in the activities of the organization, thus complicating easy conclusions but also making negative critique substantially more

difficult, should it be necessary. At least initially, I thought it might; before I'd developed research questions that focused on the technical/non-technical split instead of explicitly on the ideology of the ProBlocker product, I felt the need to critique the company as engaging in practices that in many ways I disagree with, as censors of content in educational institutions. Failing to tell these stories would mean risking uncritically "reproducing the social structures, ideologies, and subjectivities" (Herndl, "Teaching" 353) of SecureCom. Fortunately, due to the nature of the questions I found myself interested in asking, my interest and focus on the product itself was minimal; I was more interested in a larger critique of the systems in which the company was immersed than in a critique of the company itself or its principals. However, as one of the earliest hires of the company during its growth phase, I was a participant in the very structuring of the company that I now chose as my research subject, the technical/non-technical split. SecureCom's hiring of additional staff and restructuring of the company changed the nature of all employee work, particularly relationships with customers and the outside world, and changed the nature of my research agenda, which now focused on that very restructuring, how and why it occurred and its consequences. I became a complicit participant in the construction of the technical/non-technical split, and as a result must take care throughout to acknowledge that complicity.

Second, my working at SecureCom problematized my relationships with my participant/coworkers in the following ways: through making informed (not seduced) consent more difficult, and through building their trust for me and making them more likely to share with me things they might not otherwise have shared. My position as a company employee made my position as a researcher harder to keep in mind, neutralizing

for my participants the potential political threat of my research. In what follows, I explore these relationship problems in more detail.

### **PROBLEMATIZING PARTICIPANT INTERACTIONS**

In his CCC article, "Simple Gifts: Ethical Issues in the Conduct of Person-Based Composition Research," Paul V. Anderson suggests that our responsibility as researchers of human subjects is not only to meet the *minimum federal guidelines* for the ethical treatment of our participants (currently, the NCTE doesn't require even these minimal steps) but also to engage in disciplinary reflection about how much further we need to go. This sort of reflection has long been a part of disciplinary discussion in psychology, sociology, and anthropology, all of which have had formal codes of research ethics for many years. But as Ellen Barton notes, a debate about ethics in qualitative research has really just begun in the last five years in composition and has, in Anderson's assessment, just begun to touch on issues critical to our treatment of our participants' rights, dignity, and privacy (64).

This situation is particularly acute in workplace research, which has been examined with far less frequency than the ethics of classroom research. Workplace research ethics have rarely been discussed in their own right, and discussion of ethics in composition research has, not surprisingly, focused in and around the composition classroom, studying on-campus teachers, students, and administrators. For instance, the new NCTE research guidelines address only the ethical use of *student* writing. Researchers, therefore, have difficulty finding guidance from our discipline about how to

negotiate the very different power dynamics and researcher responsibilities involved in workplace research.

Carl Herndl suggests a common frustration with workplace research in his “Teaching Discourse and Reproducing Culture,” when he expresses his frustration with the “largely descriptive focus of professional writing research from the perspective of radical pedagogy,” because “in teaching discourse we may be merely reproducing the social structures, ideologies, and subjectivities of the various communities we study” (353).

In essence, I have always thought ethics were crucially important when researching composition contexts and far less important when researching workplaces. This was partly because our research of corporations has frequently been conducted at a distance, often through textual analysis, enabling us to be negative without raising too many ethical questions. But in participant-based workplace research, I should have worried more, because I’ve long agreed with Sullivan’s and Porter’s stance that “research ethically begins (or should begin) with the involvement and personal commitment by the researcher to research participants” (ix). But my worries were quieted by a key assumption: workplaces and workplace research participants have substantial sociocultural power. This power means that any research time granted is an easily retractable *gift*, not a result of the oft-cited power differential between composition researchers and the students they study. Workplaces and their participants cannot be coerced or implicitly threatened into letting researchers say things they don’t want said, and at any point they can pull the rug from under us. The danger is not, I assumed, that we’ll be too negative at the expense of our subjects; the danger is we won’t be allowed to

critique at all. And at any rate, if I am working to critique corporate structures, in the long run what I am saying will be for the good of my participants, right?

But these assumptions fail to recognize the complexity of workplaces and workplace participants. First, workplaces are not enormous, faceless corporate bureaucracies that exist only to promote evil globalism. Many are small, many are non-profits, many are struggling, and none of these really qualify as having enormous sociocultural power. And second, regardless of the status of the workplace, these workplaces are full of people with complex and nuanced relationships to their employers: some are cofounders, some have put in years and years of service, many have intense loyalty, and many more have stock in the company and are as concerned as any boardroom bureaucrat with how their organization will be portrayed. None of these complexities matter much when we are just attacking corporations from a distance, but as we increasingly spend time in organizations as part of our research, we have to begin to ask the tough questions about our ethical responsibilities to the people who work there.

SecureCom is an obvious example of such problems. On previous, non-ethnographic research projects, during which I relied primarily on textual accounts and anecdotal evidence about corporations, telling negative tales about SecureCom would have been a relatively easy, unreflective task. But the process of my participant-observer ethnographic research, which I hoped would complicate my data gathering and writing in interesting ways, also complicated them in ways I did not anticipate. As I anticipated, the year I spent studying SecureCom taught me a lot about communication in a small and evolving organization and taught me that the people who work there have complex and nuanced relationships with their own products and company structures, problematizing

any easy conclusions I might have reached about their political agendas and commitments. And I also anticipated that my work there as a technical writer made me fully complicit in the activities of the organization, making it hypocritical for me to then excoriate my participants for their participation.

But I failed to anticipate that the time I spent at SecureCom would also allow me to get to know and form friendships with the people who worked there, making it far more difficult to pass judgment on their work, a stance that also complicates easy conclusions but simultaneously makes it substantially harder to be negative, should that be ethically necessary. The two key issues with which I found myself wrestling are articulated in Thomas Newkirk's "Seduction and Betrayal":

- **Informed (not seduced) consent**, I suggest, is a necessary illusion in workplace ethnography, where researchers enter rapidly evolving contexts with little sense of what they will research and encounter participants who frequently have little knowledge of or interest in the research work.
- **Trust building**, I argue, is in varying degrees a feature of all research, because without trust it is difficult to learn anything from participants. In workplace ethnographies, trust building enables initial access, but also eventually reduces the ambiguity of a researcher's position in an organization, minimizing participant hesitation and making negative critique difficult.

In what follows, I describe these issues in more detail and then analyze and problematize their application in workplace contexts as exemplified in my work at SecureCom.



### **Informed (Not Seduced) Consent**

This problematizing of informed consent is an important step and makes good ethical sense in composition research, where we encounter participants who either share our interests (our colleagues) or who are required to share our interests (our students). But Newkirk's evolved sense of informed consent is difficult to achieve. First, because ethnography is dynamic, we must struggle with the difficulty of fairly and ethically representing rapidly evolving projects. Further, in the workplace we must ethically explain these evolving projects to participants who frequently don't share our interests and have little time, inclination, or reason to take the time to become "informed."

*"Oh, did I tell you we are moving to a new office tomorrow?"—Gina (software engineer)*

**Ethnography is dynamic.** Ethnographic work unfolds over time, and many ethnographers in our field and others advocate entering a research context without a preconceived agenda or ready-made research questions; questions should instead emerge from the context (Moss 157; Doheny-Farina and Odell 510; Newkirk 132). At SecureCom, I began a year-long period of data gathering with little more in mind than that I wanted to study the communication practices in what was at the time a four-employee "virtual" organization, in which only one employee reported daily to the office, other employees telecommuted, and communication was almost entirely via e-mail and the phone. My participants signed their consent forms with the understanding that I was interested in studying their virtual environment, and I spent several months observing work in the eight foot by ten foot main office and in the private home office of one of the

developers. I developed pages of potential research questions all focused on "virtuality": Was their virtual work similar to that represented in popular texts about virtuality? How was it better? Worse? Different?

But over time, the organization changed dramatically, and so, necessarily, did my research interests. The organization obtained venture capital, which allowed it to move one of its telecommuters into their new, larger office and hire (over several months) several new employees including additional developers, a manager, a technical support specialist, and an administrative assistant. The virtual company I was researching had disappeared, and with it my research questions. I was now presented with the opportunity to study something that was (to me) more interesting: the process by which a small, seat-of-the-pants startup evolved, becoming the type of formal, structured organization that the participants hoped would draw further investment and promote growth.

This dynamism in the organization was interesting and significant but presented me with an informed consent problem in addition to the headache of scrapping my existing research questions and developing new ones. I had gained entrance to the organization describing one sort of ill-formed study and had communicated about the study to my participants as I moved along, but I now had five new participants and a new ill-formed study that I didn't yet know how to represent to them. Further, as I had formed relationships with and gained trust from the four initial participants, they too participated in the representation of my work to organizational newcomers; a part time administrative assistant was told, with tongue in cheek, that I was the "resident spy," and that if I were typing on my desktop machine, I was working for them, but that if I was typing on my

laptop, I was "spying," and she should ask me what I was saying about her. My working for SecureCom as a consultant further complicated future interactions with new employees, in that I was represented to them first as a technical writer and second as a researcher, thus immediately subordinating my research agenda and establishing a non-research purpose for my presence, mitigating any hesitance new participants might have legitimately had about participating in my study.

*"Is that all it takes to get a Ph.D. in your department?"—Waldo (software engineer)*

**Participant lack of knowledge and interest makes "informed" consent difficult.** These concerns, however, are not alien to ethnographers who research the classroom or other non-workplace contexts. Further, just as in much composition research, participants in workplace ethnographies have little concept of what we research. What is different is that workplace participants often expect, quite understandably, they'll get something productive out of the research. Despite my efforts to explain my political (and largely anti-corporate) agenda and research interests, most people at SecureCom assume that my research will ultimately be beneficial and interesting to them, which is a reasonable expectation that cannot possibly be filled by all of the topics that are of academic significance. At SecureCom, the newly hired manager assumed, despite my explanations, that my research of "communication practices" would payoff for the company through my helping them make their communication better and more efficient. This assumption makes a good deal of sense, given that my other role in the organization is eminently practical—technical writing—and it is difficult for them to imagine my

research work being, from their perspective, less than interesting and useful. Which is flattering, in a way.

What is less flattering is that upon actually hearing about or reading my work, an activity I (and Newkirk and Kirsch) believe is necessary in gaining responses and co-interpretations, participants frequently lose interest in hearing more about or responding to my work, which more than one participant has referred to as "academic mumbo jumbo." In composition research, many of our participants are other academics, people who place a value on the work presented at our conferences and published in our journals, and who are concerned about their own representation in this work. And our other primary participants, students, often have little choice but to participate and respond as directed.

As happens, one of my participants is a university professor, but to even my most academically inclined workplace participants, much of the work in our profession is not unimportant, but is uninteresting and largely "fighting over scraps," waging pitched rhetorical battles over scant resources in a highly theoretical (read: impractical) fashion. Some responses to my work have included "whoosh!" (hand sweeping over the top of the head), "is that all it takes to get a Ph.D. in your department?" and the damning "well, that sounds interesting." And unlike students who are the subject of composition research, these participants have unequivocal power to disregard future attempts to get them to listen about or read drafts, let alone get them to respond or co-interpret. Workplace researchers, then, often have an incredibly difficult time answering the call to include more participant speech and response in our research (Blakeslee, Cole, and Conefrey).

### **Trust Building**

Perkins notes that since researchers have stripped ethnography of its “assumed shroud of objectivity” (69), all ethnographers are recognized as “participants,” not as “observers” who simply report what they observe. This recognition problematizes ethnographic ethics; when ethnographers could imagine themselves as simply reporting factual observations, their relationships with the observed were largely irrelevant. Recognizing ethnographers as “participants” makes the relationship between the “participant-observer” and the “participants” central to the research project: Virtually everything researchers learn about a context depend on the trust, or lack of trust, that they establish with their participants. During my own research work at SecureCom, I developed trust largely through working many, many hours as what I will call a “technical writing consultant,” although I was really an organizational communication jack-of-all-trades. I began working for them when they asked me—I was there solely as a researcher, and they needed a new manual for their product and knew that I both understood the product and had written manuals before. My role gradually increased to the point where I also created online documentation, added to the Web site, worked on the corporate business plan, created forms, wrote release letters, and edited other documents.

All these activities got me better and more complete access to the activities of the organization, but also, I thought, problematized my theoretical distance as a researcher, making my work a constant struggle against “going native” (a struggle I now feel I lost). But as I’ve continued my work and begun my data analysis, I’ve realized that an

additional danger to my immersion in the context was that immersion's impact on my participants, who, without provocation or good reason, moved from being highly suspicious of my work to being fully trusting and accessible. Over time, I became a far less ambiguous and strange presence in their midst, and I became far less of a political threat to their work. The result was their sharing with me things they might not otherwise have shared.

*"Oh, you can show those to Dave. You can trust him"—Gina*

**To participants, researchers become less ambiguous.** Brueggemann (1996) suggests that participant-observers necessarily "traverse the hyphen," always in between, never wholly a participant/member of the community and certainly never an objective, detached observer. It is a balancing act, and in my own work, I often found it difficult. When I was working for the company, it was easy to forget to be a researcher, and vice-versa. I frequently found myself having to carefully segment my time in order to balance my responsibilities, all the while being careful to jot notes about interesting observations while working and pay attention to work responsibilities and information while researching (thus, the separate keyboards I talked about in the story above).

But this sort of researcher ambiguity is fairly well traversed ground (cf. Dauterman). What has been less explored in our literature is the manner in which participant-observer status changes the perception of the researcher among participants. In the course of the many months I spent at SecureCom, I never stopped researching, which (I sometimes had to remind myself) was always my primary reason for being there. But for my participants, I evolved from being a stranger with an odd academic

interest in their work to being their technical writer to, finally, being a friend and colleague who chatted with them about the company, the weather, their children and dogs, etc. For participant-observers, the constant presence of researchers and the increasing normalcy of their work relations with participants makes it easier and easier for participants to forget they're researchers and begin to share things with them they might not otherwise share if they consistently remembered their dual role in the organization.

The ambiguity (not objectivity) that we fight to maintain as researcher/participants melts away for our participants. I've been told interesting stories and learned things about SecureCom that I won't use in my research for fear of compromising the company or my participants, and I've learned these things because of the evolving perceptions of me among my participants. One of my participants, for example, initially regarded my presence in the organization with a good deal of suspicion; many of my initial conversations with her while watching her work were peppered with her questions about how I would hide her identity and the identity of the organization, a task she thought was ultimately impossible given the small number of their competitors. Recently, however, during a discussion of an internal argument over e-mail, the same participant told another that they could share the gossip with me because "you can trust him." This came not from any explicit sharing on my part, but from my extended presence and trust building. As a researcher, knowing what to do with this is difficult; should I therefore not use this information, because it didn't come to me through "pure research" but through a subtle, unintentional coercion of my subjects? Or is this simply the way ethnographic research operates?

*"I just wish you'd checked with me before you called an all-company meeting."*—

*Evan (SecureCom COO)*

**Trust- and relationship-building neutralize the political threat of research.**

The same process by which my position in the organization became less ambiguous for my participants built significant trust among my participants. This sort of trust is crucial to conducting research; without a certain level of trust, I would still be fighting to learn much of anything about my participants and their work. But this same level of trust is simultaneously damaging to my ability to communicate my political agenda and the potentially negative possibilities of my research.

Because at the beginning of, and indeed throughout, my project I knew very little myself about the potential negative impact of my work, not yet having a clear agenda or questions, representing the serious nature of my work to my current and new participants was difficult. The level of trust that had developed was helpful to me in gaining further access to the organization and to new employees, but at the same time the very teasing nature of the representation of my work as the "resident spy," together with my near-constant presence in the organization as a participant in day-to-day work, made current and new participants have difficulty imagining my work as having negative impact on their interests. I increasingly became for them not "the researcher" or even "the technical writer" but simply Dave, who was an integral (and, by the end, long-standing—I had "seniority" over all but the four principals of the organization) part of the organization.

Even when I made attempts to make my research work obvious to my participants, they worried little about the impacts of my work. Before presenting a paper



about my work at a conference, I presented it to the staff of SecureCom. On the day before the presentation, I invited everyone to come watch, and then that morning, I reminded everyone and they dutifully filed in to listen. I talked about everything that's in this chapter—about potential political threats, about my research agenda—and the response was utter silence and disinterest. The only reaction I got was from Ed, the vice president/general manager (who had not been present when I extended the initial invitations), who called me into his office to complain that I'd called a full-company meeting without checking with him and suggested that my work would be better discussed "over a beer on Friday afternoon."

Clearly, in this instance, the level of trust and relationships I had with my participants mitigated the kinds of fear and obliged interest they would have felt—or at least displayed—to an external researcher. Just as important to my research is the way that relationship building affected my ability to talk about the company. The trust of and relationships with the members of the organization increased the difficulty for me as a researcher to engage in the sort of critical analysis expected in academic work on corporate organizations. I found having the sort of critical take to which I was accustomed increasingly difficult, despite my difficulties with SecureCom's corporate structure and politics. Part of that was good—through my ethnographic process I'd been forced to greatly complicate the simple belief in corporate evil I'd had when I entered. I'd found myself engaged with corporate people who, despite their very overt and honest focus on money making, were complex and interesting and, above all, with whom I had built trust and who might, given the right subject, feel upset, betrayed, and alienated by my critiques of their work, regardless of how early in the process I presented them. The

easy answer is to not care, and nothing in our current ethical frameworks or from our review boards would stop me. But not caring is difficult after spending a year with people rather than just surrounding by a mound of primary texts.

What does this extensive self-reflection mean for my dissertation? I hope that this chapter has achieved more than navel-gazing, by demonstrating both the biases and agendas I had when beginning my ethnographic study at SecureCom. It has also shown the various ways in which my presence and work within the organization has impacted both the organization itself and my participants. By discussing these issues, I hope that I have, first of all, made clear the ways that the complicated nature of my study make what follows both more comprehensive and ultimately more persuasive. I hope, too, that in reflecting on the research situation I have complicated the context of my study sufficiently to make clear the issues about which I must be careful in the remaining chapters of this study.

### CHAPTER 3: RHETORIC OF TECHNOLOGY AND THE TECHNICAL/NON-TECHNICAL SPLIT

A large number of frequently articulated splits shape Western culture: between nature and culture, between truth and falsehood, and of course between what is considered to be “technical” and what is considered to be “non-technical.” Gary Bowker and Susan Leigh Star point out that the attempt of postmodernists to identify the fallacies of these splits, while it has served a valuable purpose, fails to eliminate the splits or explain why they are so prevalent and powerful both in the culture at large and in our scholarship. After all, even as over-educated intellectuals, academic rhetoricians are not above or free from any of these splits. Our sociocultural advantage as scholars in the humanities enables us to pop open and deconstruct technological “black boxes” (Bruno Latour’s term for technological artifacts, which once constructed are often assumed to be value-free and uninformed by ideology). But we live in a world where splits like “technical” vs. “non-technical,” although they’re constructs, *exist* and do real work. Pretending otherwise accomplishes little.

For my part, I revel in the “purely technical.” Some people, like my father, like to watch action movies to “escape” (those people frequently find my constant ideological analyses infuriating: “Yes, we *know* it is horribly misogynistic; find me a movie that’s not!”). I prefer to plop down in front of one of my many black boxes and spend a couple of hours skimming along the surface of a technology, never thinking about the “social implications” of setting up my Linux machine as a networked MP3 server that can broadcast all over the house. I do it because I can, because (to me) it is fun, and because

sometimes it is a lot easier to socialize with my computer than with people, even when I am using the computer to communicate with others.

I am sure anyone who has spent hours downloading new screensavers or playing *Myst* knows what I am talking about. Part of the built-in joy of technology is its ability to allow us to pretend it is purely technical, to ignore its impact on us beyond simple enjoyment as we spend more time with it than we spend on housework or with our dogs. But of course we are socializing and being socialized as we use it: Many have argued that we are being trained to think in a rationalistic, gendered fashion (cf. Lay "Computer") and that, increasingly, we are being trained to be "better" (read: more responsive, purchase-happy) consumers. What is important for my argument here is that, as countless scholars have noted, machines are *social*, not *purely technical* as we tend to/are trained to think; they simply have a type of embedded social that is radically transparent, invisible to most of us (much like the often-denigrated "social skills" of the techies who make them: not lacking, just different).

That transparency is significant to the power of technology and the technical/non-technical split. Technical artifacts are persuasive precisely because while being seen as a-social, they manage to be so compelling that we are sucked into their social world, a world that's often about right and wrong answers, about rigid consistency, about precision. In short, it is a hegemonic, western, white male dream come true, precisely the sort of world that allows black and white contrasts like "technical" vs. "non-technical," and it is both a product of and contributor to the Enlightenment-based scientific philosophies and rhetorics that govern the structure of academic scholarship.

Given the hegemony of these contrasts, no one should be surprised that much of our scholarship in rhetoric, as well as that in science studies, technology studies, history of science and technology, and also popular science and technology, embraces the "technical" vs. "non-technical" distinction, often even as it seeks to critique it. In this chapter, I examine the scholarship that most directly discusses science and/or technology, exploring the varying ways that scholarship articulates the split. For simplicity's sake I employ my own categorical structure, exploring authors who articulate these views:

1. **Technology is not rhetorical.** Texts in this genre either represent technology as having an inevitable positive or negative impact on non-technical society or represent technology as being entirely neutral, its positive or negative impacts being determined entirely by human use. In either case, rhetoric is isolated into the human realm of the "non-technical" and cannot affect the technology itself.
2. **Technology is rhetorically constructed and situated.** Texts in this genre represent technology as a rhetorical construction with a negotiable impact on society. In some of these texts, rhetoric is used to crack open black boxes and re-negotiate technological impacts. In others, the integration of society and technology is assumed; the primary focus is to delete remaining boundaries between what is "technological" and what is not.
3. **Technology and society are inseparable and distinct.** These texts focus on boundary investigation. Most recent rhetorical scholarship in technology follows the lead of my third category in continuing the attempt to erase differences between technology and non-technical society. These texts instead, like sociologist Gary Downey, investigate the construction and day-to-day operation

of arbitrary boundaries between what is considered technical and what is considered non-technical in the nonacademic realm, where the impact of recent science vs. rhetoric debates is minimal and where much boundary work is conducted.

I focus throughout this chapter on the scholarship within rhetoric, but I also reference, where relevant, texts from other academic fields and from popular discourse that make similar claims, provide foundations for rhetorical claims, or counter rhetorical claims. In narrower terms, I focus on scholarship in our discipline that explicitly addresses technology, most specifically computer/information technology, both because those technologies are my primary interest in this study and because it was only with the advent of those technologies that our technology discussion really began. While historical scholars (cf. Ong) discuss writing and writing tools (even the pencil) as technologies, and while contemporary scholars (cf. Faigley, Haas, Hawisher and Selfe, Lauer and Sullivan) discuss technologies in the larger Foucauldian sense (referring, for example, to our research publications as "disciplinary technologies" [Faigley]), a widespread discussion of technology began in our discipline only with the wide adoption of computers in our classrooms and offices.

*Networked writing displaces the modernist conception of writing as hard work aimed at producing an enduring object. Acts of networked writing are most often quickly produced, quickly consumed, and quickly discarded...Even more unsettling for traditional writing teachers is the vivid demonstration of the decentering of the subject in electronic discussions. (Faigley, 191)*

## **TECHNOLOGY IS NOT RHETORICAL**

In *Critical Theory of Technology*, Andrew Feenberg describes "instrumental," "substantive" and "critical" approaches to technology. Feenberg's "instrumental" and "substantive" views are familiar—they are the closest, Sullivan and Porter suggest, to mainstream perceptions of technology—and both carefully maintain a clear distinction between technology and the non-technical social realm. The instrumentalist view believes that technologies are neutral artifacts and that their effects on society are determined by the ways in which humans decide to use them. In contrast, the substantive view holds that technologies have inherent positive or negative qualities and that their introduction to society therefore inevitably has positive or negative effects; the substantive viewpoint closely aligns with what Stephen Doheny-Farina terms the "techno-utopian" and "neo-luddite" viewpoints (Doheny-Farina *Wired*).

As Gary Downey suggests, "[w]hen relying on [these] standard images, people constrain themselves to regard technological development with either an irrepressible sense of optimism or an immovable sense of pessimism. The future will be wonderful, or it will be horrible. Public debates over the impacts of new technologies regularly degenerate into confrontations between proponents and opponents" (11). And meanwhile, the instrumentalists stand on the sidelines believing that the substantivists are

missing the point by focusing on the technologies at all, because the instrumentalists believe that the value of technologies is determined entirely by the users.

But the instrumentalists and substantivists have more in common than not. In particular, they share in common that they de-rhetorize the design, creation, and use of technological artifacts. If the impact of a technology on society is either fully determined by the social realm (in the case of instrumentalism) or is pre-determined as fully negative or positive (in the case of substantivism), then technological development itself is beside the point and goes unchecked and unquestioned. The decision-making powers of managers and developers are treated as fully rational and not rhetorical, and the rest of us are left to argue about only the products of their work. And really, we are not even given that. As Stephen Doheny-Farina suggests, it is very difficult to establish any sort of middle ground in a technological debate grounded in instrumental or substantive perspectives; acceptable viewpoints are that you're either certain that the technology itself is not the point, or that you're either completely for or completely against a technology. Any rhetorical resistance to a technology, as Downey argues, leads one to be characterized as an anti-progress luddite.

None of this is particularly surprising to a rhetorical scholar; rhetoric has been consistently isolated from realms of knowledge and technology since Plato. What is more troubling in the most recent debate about technology, however, is the degree to which the de-rhetorized viewpoint has been adopted by those in our own discipline. In this section I survey a few representative pieces of work with an eye toward pointing out what they have in common—a de-rhetorized understanding of technology that fails to acknowledge the rhetorical construction of technological artifacts. In discussing these



texts, I break them down using Feenberg's two categories ("instrumentalism" and "substantivism"), while including a hint of chronology in order to do justice to scholars like Cynthia Selfe and Marilyn Cooper who have since re-thought their positions.

### **Past and Present Instrumentalism**

By instrumentalism, of course. I mean that technological artifacts are seen as entirely neutral and therefore a-rhetorical; it is only the situations into which we inject them that are political, ideological, or otherwise complicated by the social. Gary Downey characterizes this technological belief as the "Guns don't kill people, people kill people" system. In this system, instrumentalism, far from being a passive strategy used by people indifferent to technology, is frequently an active argumentative structure used to implicitly or explicitly ridicule other viewpoints, which are seen as anthropomorphizing technology "as if it had a life of its own" (12).

The sort of overt instrumental arguing practiced by, say, the NRA, is unusual in our discipline. But as I suggested earlier, implicit instrumental arguing is far more common, practiced frequently by authors and editors of practical-minded journals like *Technical Communication*, *Business Communication Quarterly*, and countless newsletters and Web sites. These publications often address the social complications introduced by a rhetoricized theory of technology by ignoring it completely, preferring instead to focus on the technology as if its positive or negative impacts were entirely due to human use and interaction, and as though the implementation of the technology was so completely inevitable that further discussion of the utility and impacts of its use is out of the question.

Take, for example, these two articles including “software” or “computer” or “online” in their titles, selected randomly from 1997-2000 issues of *Technical Communication*. In “Screen Captures in Software Documentation” (included in the “Applied Theory” section of the November 1998 issue), Hans Van Der Meij and Mark Gellevij question the lack of scholarship on how to effectively incorporate screen captures, question whether screen captures are as widespread as they seem to be (or should be), and also question how to best represent their screen captures to potential audiences for particular purposes. In short, they limit their questioning and research of screen captures to a narrow range that includes questioning how to best adjust the use of the technology to the needs of a particular audience, but that does not include questioning the rhetorical structure of the technology itself. They do not evaluate the agendas or assumptions of use underlying the construction of the software itself, with an eye toward exposing embedded ideology or toward improving the software’s readiness for the tasks of technical communicators. The technology is simply there for us to use either well or badly.

We can see a similar take on technology in Julie Fisher’s “Technical Communicators and Online Help: The Developers’ and Users’ Perspectives.” This article, which appeared in the “Applied Research” section of the August 1999 issue of *Technical Communication*, seeks to answer two questions: “Are technical communicators writing online help?” and “Do technical communicators contribute to the overall effectiveness of a computer system from the developers’ and users’ perspectives?” As these questions would lead one to expect, the article focuses first on whether technical communicators do and should participate in online help development and by extension

software development (yes), and second on how technical communicators might best contribute to the creation of online help (by leveraging their skills in making content clear and accessible). Fisher's article sticks to the "non-technical" side of the split, not acknowledging the role technology itself plays in the tacit argument of the article; technical communicators have to make bigger efforts to get involved and contribute more, of course, both because they have valuable knowledge and because they are rarely included by default. Their knowledge is considered largely "non-technical," and their "technical" skills are devalued.

I am not suggesting here that these articles must, or that all articles must, incorporate a deep rhetorical investigation of both sides of the split without fail, although acknowledgement of the tacit *theoretical* stance on the split would help foster a more critical environment discipline-wide. A great deal of immensely valuable work has focused on one side or the other, particularly articles in the more "practical" of our journals, and in newsletters, online discussions, and other smaller publications put out by our professional organizations (see any issue of STC's *Intercom*, for example). I seek here only to point out the instrumentality of the technological stance of this work and cast it in relation to other more critical work.

### **Early 1990s Substantivism**

After all, I am far more concerned with the substantivists. I think critiquing many of our profession's works on technology from the early 1990s is important, not to personally attack the authors (many, as I suggested above, have since rhetoricized their views of technology), but because these works still exist on many syllabi and

comprehensive examination reading lists and they need to be challenged as representing an anti-rhetorical and alarmingly uncritical viewpoint on incorporating computer systems into classrooms, workplaces, and research. Such critique is also important because these works closely mirror the perceptions of technology put forward in many contemporary popular texts on technology; distancing our scholarship from such widely read and cited but highly uncritical texts is a useful exercise.

Most of these early 1990s texts to which I am referring are written in the spirit of advocacy, and it is important to remember that at the time, many instructors were fighting with administrators and their own departments (as many still are) for the funding to be able to design and setup computer labs, the labs that many of us now take for granted (most sections that I've taught at Iowa State have had full-time computer access). It makes sense, therefore, that so many of the texts had an unrestrained excitement to them, endorsing new computer technologies as the means to solving numerous and ubiquitous teaching difficulties, because in many cases, these texts had as primary or secondary audiences the people who could provide funding for the systems. This is not to say that the authors did not believe their own press—a more nuanced and cautious approach to the technologies was likely unimaginable when the authors were preaching to such a skeptical, sometimes hostile, congregation. A technotopian attitude was both called for and expedient in order to accomplish rhetorical work. Indeed, we've seen similar, if less obviously technological, strategies employed in the promotion of other large movements in our discipline: Elbow's expressivism, process theory, post-process theory.

Contemporary popular texts offer a useful comparison. As I've argued elsewhere (Clark "Road"), contemporary popular texts on the information age such as Nicholas

Negroponte's *Being Digital*, Esther Dyson's *Release 2.0*, Bill Gates's *Road Ahead*, and Michael Dertouzos's *What Will Be*, among countless others, make an astonishingly uniform case for the liberating, democratizing powers of information technologies. These texts argue these technologies remake education, government, work, and culture in line with individualistic, free-market politics, and (using the substantive stance) argue that such reforms are the inevitable positive results of the technologies. I have suggested that the texts promote these politics not because, as the texts argue, they are inevitable results, but because such promotions are part of a discourse that functions to create the necessary conditions for further technological development, the realization of their visions. Such texts are part of a genre of advocacy that also operated historically to celebrate (and thereby promote) the electric light (Bazerman *Languages*), the telephone (Marvin), and the personal computer (Pfaffenberger).

What we have in our own early 1990s scholarship is remarkably similar: A set of astonishingly uniform texts promotes a seemingly inevitable, positive result from the implementation of technology. What is especially revealing, given my own interest in pointing out the rhetorical nature of technology, is how similar, yet different those "inevitable" results are from those promoted by the popular texts. In our scholarship, like in the popular texts, computers were said to empower the individual, allowing shy and/or oppressed students to participate, eliminating racial and gender categorization, and flattening hierarchies. At the same time, while popular readers are promised precise and efficient "knowledge management," we were promised the realization and implementation of all of our postmodern talk about writing and revision: true intertextuality! the death of the author! Each group—the popular texts and the early

1990s substantivists—pushed their own social agenda, each arguing what would likely be most warmly received by their audience.

Consider one such early text: George Landow's *Hypertext: The Convergence Of Contemporary Critical Theory And Technology*. Landow saw hypertext as paralleling aspects of postmodernist thought:

In *S/Z*, Roland Barthes describes an ideal textuality that precisely matches that which has come to be called computer hypertext—text composed of blocks of words (or images) linked electronically by multiple paths, chains, or trails in an open-ended, perpetually unfinished textuality described by the terms *link*, *node*, *network*, *web*, and *path*. (Landow 3)

Fair enough; hypertext is easy to see as a fairly persuasive metaphor for postmodern writing, and many other hypertext and computer writing theorists have agreed (cf. Jay David Bolter and Richard Lanham). In his 1989 online article, Stuart Moulthrop, for another example, also noted the similarities of Barthes' characterization of "text" to hypertext:

Hypertext...offers to revise our notions of definitive discourse. It seems to move us in the direction of Roland Barthes' "writerly" text, defined as "that social space that leaves no language safe or untouched, that allows no enunciative subject to hold the position of judge, teacher, analyst, confessor, or decoder. ("In the Zones")

And several other theorists noted the similarities between Foucault's understanding of intertextuality and hypertext; indeed, some of Foucault's language sounds technological:

The frontiers of a book are never clear-cut: beyond the title, the first lines, and the last full stop, beyond its internal configuration and its autonomous form, it is caught up in a *system* of references to other books, other texts, other sentences: it is a *node* within a *network*...[a] *network* of references. (Foucault 23, emphasis added)

These 1980s and 1990s theorists exhibited considerable agreement that hypertext was a realization of Bakhtin's "dialogic, polyphonic, multivocal" works (Landow 11) and that it was also a realization of Derridean decentering (Landow 13).

But Landow, Lanham, and Bolter, in particular, wanted to take things a step further, arguing that the conceptions of text held by Barthes, Foucault, Derrida, and other postmodern theorists describe hypertext precisely; Landow saw this as a "convergence" of literary/critical theory and technology (Landow 2), and he saw hypertext as "already deconstructed text" that "does not permit a tyrannical, unified voice" (11):

...something that Derrida and other critical theorists describe as part of a seemingly extravagant claim about language turns out precisely to describe the new economy of reading and writing with electronic virtual, rather than physical, forms. (Landow 8)

Landow's postmodernism, which works well as a metaphor for hypertext, an interesting way of looking at a new communication medium, becomes in his book synonymous with the medium, and the adoption of hypertext into our classrooms and research then becomes an ideological necessity for postmodernists.

In a similar way, other scholarship of the early 1990s worked to argue for and create a necessity for new classroom technologies. Consider Lester Faigley's "The

Achieved Utopia of the Networked Classroom,” from his 1992 *Fragments of Rationality: Postmodernity and the Subject of Composition*. In this chapter, Faigley addresses the question of “what might happen if we were to disrupt standard classroom practice and introduce new forms of written discourse? Would it be more difficult to preserve the rational, autonomous subject?” He concludes, not surprisingly, that introducing (at the time) new technologies like hypertext and online discussion into our classrooms can indeed allow us to enter an “achieved utopia,” a “realization of the ‘student-centered’ classroom” (167). Although he later hedges his bets slightly, his “achieved utopia” is hardly ironic and highly encouraging of the purchase and installation of computer systems.

Faigley’s work was hardly the only overwhelmingly positive substantive take on computers in the classroom in the early 1990s. Marilyn Cooper and Cynthia Selfe make a similar case in “Computer Conferences and Learning: Authority, Resistance, and Internally Persuasive Discourse,” in which they suggest that computer conferences create an environment hostile to a “teacher-centered hegemony,” in which students are encouraged to “use language to resist as well as to accommodate” (847). Similarly, Cynthia Selfe, in “Technology in the English Classroom: Computers Through the Lens of Feminist Theory,” suggests that computer conferencing greatly increases the participation of women in classrooms, a fact that Faigley draws on to claim that “this participation runs counter to frequent accusations of sexism in computer software and in stereotypes associated with computers” (181).

I could continue to pull out examples of this sort of overwhelming positive substantive rhetoric from the early 1990s, but doing so would serve no purpose. This



work came from a radically different context than the present, in which scholars felt the need to defend and strengthen their stances as advocates of computer use in the classroom.<sup>2</sup> The stances Landow, Lanham, Selfe, Faigley and others took at the time made good contextual sense, but it is nonetheless a relief that all of these scholars have since taken on far more nuanced understandings of technology that, like their counterparts in history of science and the social science in the 1980s and early 1990s, understands technology as a social (rhetorical) construction.

*The essential question...is what kind of computer culture have hardware and software developers, programmers, and documenters created, and what kind of culture do computer documentation textbooks perpetuate? (Lay, "Computer" 58)*

#### **TECHNOLOGY IS RHETORICALLY CONSTRUCTED AND SITUATED**

I began the last section with a discussion of Andrew Feenberg's historical scheme. Useful though Feenberg's scheme was in helping me elaborate my first category, he does miss two entire movements within our scholarship, perhaps because he works in a different field. Gary Downey, however, pinpoints the trend of pointing to the social construction (or what in our discipline became the "rhetorical construction") of technical artifacts: this movement took place in the 1980s. Here's how Downey describes it:

During the 1980s, the rise of 'constructivist' studies of technology, led by Bijker, Hughes, and Pinch's *The Social Construction of Technology*, offered an entirely

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<sup>2</sup> I think I should note here that of course in many departments the need is decidedly not over. Many smaller and less powerful English departments are still struggling to justify putting money and labor into computing.

new approach to intervening in the dominant image. Drawing from the sociology of scientific knowledge and the history of technology, the constructivist study of technology demystifies the machine side of the [technical/non-technical] boundary. Through detailed case studies of specific technologies, constructivist studies make visible the diverse activities of individuals and groups involved in technological development, making it difficult to think of ‘invention’ and ‘innovation’ as singular events or fixed processes (21).

Actually, “constructivist” work began even before Bijker, Hughes, and Pinch, with Latour and Woolgar’s *Laboratory Life*, in which they examined the social construction of scientific facts; the constructive nature of scientific work was the primary subject of their text, and that is the parallel I seek to draw here with the scholarship in rhetoric.

Here, I identify two fairly distinct strands of post-instrumentalist and post-substantivist “technology is rhetorical” work in our discipline, that which focuses on the technologies themselves, seeking to show the rhetorical nature of their construction, and that which demonstrates that technology is rhetorical through showing its situation in a larger rhetorical context, usually described in terms of a “community.” Admittedly, this line—like most of the lines we arbitrarily draw in the course of our scholarship—is artificial and there is significant crossover between the categories. For instance, Bazerman and Myers in their well-known work that rhetoricizes the scientific article are arguably addressing the standards expected by the scientific community of their professional writers. Their primary focus on the articles themselves, as opposed to sidelining the articles as part of a larger argument about the rhetorical situation of the community, makes my distinction here.

### **Technology is Rhetorical**

A good deal of the post-instrumentalist and post-substantivist work in our discipline focused on the technological side of the technical/non-technical split, never completely to the exclusion of an out-there “social” side but with a focus on demonstrating the rhetorical nature of technologies, loosely defined. I say “loosely defined” because the first texts I discuss in this grouping approach not information technologies but writing technologies, the scientific article. I also say “loosely defined” because “rhetorical nature” can include an understanding of technological contexts and social forces—for example, Bazerman’s discussion of the social construction of the APA format is unquestionably “social” in that it seeks to show the social forces that shaped the construction of the APA, but the focus of the piece is ultimately more historical and textual than it is an attempt to show contextualized use of a technology.

What all of these texts have in common with the ones I discuss directly after (which focus more directly on information technologies) is their “gotcha” factor—all of these texts examine a technological artifact produced by those external to our discipline and point out its rhetorical nature. They do so with the aim of provoking outsiders into debate (cf. especially McCloskey) and of spurring more critical investigation by those in our discipline, in particular targeting the instrumental and substantive approaches of the past.

I’ll start with some very famous and influential books about the scientific article. Deirdre McCloskey attacks the “pretentious scientism” of economic scholarship in *The Rhetoric of Economics*. McCloskey attacks her target by pointing out the rhetorical nature of all economic writing, arguing that the claims that economics is a Science are

rhetorical claims, and that even the most modernist economist would be forced to admit that their science (small s) is largely literary, no more definitive than any of the other sciences (which she attacks by implication). To bolster her claims, McCloskey relies on close-text reading of economic articles, like John Muth's "Rational Expectations and the Theory of Price Movements." In the Muth chapter, she argues that Muth's work initially failed to receive the recognition perhaps due it because of the author's rhetorical appeals to scientism (a ploy that rendered his work largely unreadable), but the work ultimately succeeded in being widely cited.

Bazerman's *Shaping Written Knowledge* and Myers's *Writing Biology* offer similar analyses of scientific articles, with similar conclusions. Bazerman's work, a collection of articles he wrote throughout the 1980s (much the same period that McCloskey was writing the first edition of her work), surveys a number of scientific articles and historical contexts, with conclusions nearly identical to McCloskey's: All of the articles and situations, when rhetorically analyzed, point to the rhetorical construction of the articles themselves, thus challenging the implicit (and even often explicit) claim of scientific language "for eschewing rhetoric and simply reporting natural fact that transcends symbolic trappings" (6).

For instance, in his exploration of the *Philosophical Transactions of the Royal Society*, 1665-1800, Bazerman, like McCloskey, is careful to refer to the scientific article as a "literary genre, ...invented in response to a literary situation" (59), and then goes on to establish the experimental report as "a historical creation," opposing the notion of the genre as an inherently factual representation of nature as it really is. In a similar way, Myers, throughout his *Writing Biology*, investigates the means by which texts construct

knowledge, and problematizes the common perception that “scientific texts...just convey information” (141). In one example, he focuses on popularizations, texts that many scientists would argue fail as objective portrayals of scientific reality. Myers demonstrates that the focus of popular texts is remarkably different from those of experimental articles; popular texts tend to focus on the results of scientific work, whereas experimental articles focus far more on the process of scientific work. In essence, Myers argues that objectivity comes in different forms for different audiences, that it is a rhetorical construction and, by implication, so is all scientific writing.

The kind of work McCloskey, Bazerman, and Myers conducted (all in the 1980s) was significant because it brought our field in line with relevant scholarship in the social sciences, but it was even more significant in that it gave rhetoricians a way in to talking about science writing, and their work was so influential that when reading it now it all seems like common sense. But as I discussed in the last section, many of the earliest works on technology in our discipline failed to see or discuss the rhetorical nature of technologies, and as a result they fell in line with popular scholarship on technology and did little to further rhetorical scholarship.

What came after McCloskey, Bazerman, and Myers was a more critical take on information technologies, begun by Hawisher and Selfe’s “The Rhetoric of Technology and the Electronic Writing Class,” in which they warn that “all too frequently...writing instructors incorporate computers into their classes without the necessary scrutiny and careful planning that the use of any technology requires” (55), a lack of scrutiny in no small part fostered by Selfe’s own instrumentalist scholarship. In the piece, they “examine the enthusiastic discourse that has accompanied the introduction of computers

into writing classes and explore how this language may influence both change and the status quo in electronic classrooms” (56). The ironic lack of self-reflection aside, this piece is still very important in the information technology scholarship in our discipline, as it is among the first to question the instrumentalist/substantivist rhetorical takes on computers in the classroom. As Hawisher and Selfe note, “all too often, those who use computers for composition instruction speak and write of ‘the effects of technology’ in overly positive terms as if computers were good in and of themselves” (56). We see here a crucial move to problematize the rhetoric underlying (or making up, or constructing) the technology itself, the step that was missing in earlier instrumental and substantive scholarship.

Hawisher and Selfe close their article, not surprisingly, with pleas for greater “awareness” and more critical thinking about the use of technologies in our classrooms. Over the next few years, and even into the present to a certain extent, this has become a familiar refrain in discussions about technological devices; each new article expanded on the claims of those that came before it, or surveyed a different technological artifact with similar techniques, and each ended with a call for us all to be more critical—always good advice when dealing with technologies, but not very concrete and difficult to generalize beyond the situation given in the article. I can imagine extending the advice given by Selfe and Selfe in their analysis of the computer interface—they suggest several concrete courses of action—but one can be easily overwhelmed by all of the various calls to arms over every conceivable technological issue. In an attempt to be far-reaching in their results, many early-1990s technology scholars sought to turn their localized studies into

generalizable results that leave us all responsible for being critical about everything, but with little concrete to do.

### **Technology is Rhetorically Situated**

Although Andrew Feenberg doesn't specifically address the kinds of "technology is rhetorical" texts I explore above, clearly they would be included in his critique of much of the technological work he sees as "uncritical." Feenberg worries that much of the scholarship that addresses technology, even as it is being critical of that technology, in effect "reifies technology by abstracting [it] from all contextual considerations" (181), in effect elevating technology to a status that it doesn't on its own deserve. He advocates instead examining technology in a heavily contextualized fashion: "Critical theory shatters the illusion of [neutrality] by recovering the lost contexts and developing a historically concrete understanding of technology" (qtd. in Sullivan and Porter 105).

The response to the over-reaching of the "technology is rhetorical" scholarship is in line with what Feenberg advocates: a fine-grained, community-based approach to technology scholarship. The pleas for critical awareness moved into how that awareness should be played out in unique contexts. While the work in the "technology is rhetorical" group above tended to draw on McCloskey and Bazerman's, as well as Hawisher and Selfe's work, the work in this category doesn't draw as distinctly from any one category of work in our field. It serves largely, as Ann Duin and Craig Hansen suggest in their *Nonacademic Writing*, to identify technology as a "player on [a] complex social stage....merging public and private domains of social theory....Technology can no longer

be considered tangential to nonacademic writing. Indeed, nonacademic writing must be viewed through a sociotechnological lens” (7).

In short, in previous work where the focus of technological work in our discipline had been on poking at the technology itself, usually with the hope of ferreting out rhetorical construction or underpinnings, the end result was to eliminate the boundary between the technical and the social through the explicit argument that technology is a social phenomenon. Other lines of scholarship, however, see technology as less central and more as simply a given, an embedded presence within our work that requires examination but is inseparable from larger social concerns. In effect, this line of scholarship seeks to finally eliminate the boundary between the technical and the social by arguing implicitly that technology is a social phenomenon.

Some of these works seek to accomplish this elimination through investigations of the computer culture(s) itself, as Bertram Bruce advocates in his “Speaking the Unspeakable about 21<sup>st</sup> Century Technologies.” Bruce, picking up the argument from the “technology is rhetorical” camp, suggests

Technology is not just ‘technology,’ if by that we mean only silicon chips in a plastic box or a web browser. It is an expression of the ideologies, the cultural norms, and the value systems of a society....As we modify practices, we reshape both ourselves and the new technologies. This means that talk about technology and its effects is hopelessly inadequate if it remains entirely in the realm of the technical. (225)

Many scholars have agreed; for example, in Craig Hansen’s “Contextualizing Technology and Communication in a Corporate Setting,” he investigates how context and



technology inform each other, showing how the contexts in which corporate employees find themselves affect their decision-making processes.

Similarly, Mary Lay's chapter in Duin and Hansen's text, "The Computer Culture, Gender, and Nonacademic Writing: An Interdisciplinary Critique," examines the rhetoric of technology not by attacking the roots of the technology itself, as Hawisher and Selfe did, but by examining the culture surrounding computers that led to their peculiar construction. Lay examines gender and computers, but where earlier scholars had argued (1) that gender issues in the classroom were inherently helped by incorporating computers (as in the case of the substantivists) or (2) that gender discrimination was rhetorically built into the technology, by implication rendering it largely inaccessible to rhetoricians once the technology was built and stabilized, Lay suggests that the technology is immersed and created in a culture that has a great deal to do with the accessibility of technology to women. She investigates the culture that technology has spawned/has spawned technology, and she argues that it is a culture antithetical to (if not out-and-out hostile to) the needs of many women, making it difficult for them—with their "bricoleur" methods—to enter the top-down culture and become literate. In essence, Lay argues for the importance of understanding technology as culture in order to create change.

Laura Gurak argues in a similar way in her *Persuasion and Privacy in Cyberspace* for understanding technological culture. In fact, in her work she argues for understanding the culture created by technology in a very literal sense, investigating the online communities that are created by the debates over Lotus Marketplace and the Clipper Chip, two long-dead controversies. Gurak, like Bruce, Hansen, and Lay, blurs

the technical/non-technical line by suggesting throughout her text that online communities are not unlike offline communities, and she uses nonelectronic research principles to frame her investigation. She doesn't suggest, of course, that "virtual" and "nonvirtual" communities are the same, just that the technology is only part of the story, just as nonelectronic technologies are only part of the story in nonvirtual communities. Gurak, then, like the others in this category, works to collapse the distinction between technology and society.

*It is not that I think folks who are doing other kinds of work more directly oppositional, more critical of technological discourse, aren't doing important work; I think they often are. But I want myself and lots of other people to be inside the belly of the monster, trying to figure out what forms of contestation for nature can exist there. (Haraway 7)*

#### **TECHNOLOGY AND SOCIETY ARE INSEPARABLE AND DISTINCT**

By contrast, more recent work in our discipline draws on scholarship in the sociology of science to explore, rather than collapse, the boundary between the technical and the social. Gary Downey suggests in *The Machine in Me* that we should contribute to an emerging category of alternatives that challenge the meaning and power of the boundary between technology and society...[shifting] the problem of analysis and participation from a priori efforts at drawing or erasing the boundary between humans and machines to figuring out how such boundaries get drawn and lived in everyday experiences (27)

And some in our field have taken his lead, in emphasizing rather than attempting to erase the boundary, investigating the how and why of the boundary instead of simply arguing ad nauseam that it really shouldn't exist at all.

It does exist, after all, just as much as any of the dozens of other "false distinctions" postmodernists decry. Of course it is a construction, but that only means that it is no more or less real than anything else—it is a temporary fixing point that some people have found useful: for some because it established and continued power relations, for others because it was a requirement of a working environment, for all today because it is so thoroughly built into our various educational systems. Arguing that it is an arbitrary construction doesn't help a lot, particularly when we are fighting against the "common sense" of the split and the fact that millions of people's daily lives are based on working along the split line. They don't want their lives complicated, and attempts to do so have been viewed as academic exercises, exercises that fail to recognize and respect the theoretical stances and abilities of ordinary people and presume to push them to a "correct" means of interpretation.

The scholarship in our discipline has begun to move in the direction advocated by Latour, Haraway (see the epigram above), and others in science studies, toward a model in which rather than attempting to constantly rhetorically deconstruct existing structures, we critically examine those structures *in operation* with an eye towards their revision. Among the first to advocate this position was Greg Myers, in "Out of the Laboratory, Down to the Bay." In this piece, Myers advocates moving beyond the social constructionist works that preceded his, because although they "would seem to give us a way of thinking about...an object...we need to go beyond the claims made in science

studies (and composition studies) about the social construction of knowledge. We need to be able to deal with how knowledge is embodied in things, how boundaries are drawn around 'the public,' and how organizations organize" (7). In short, Myers suggests here and throughout the article that using critical methods to point out the constructed nature of technologies and their contexts is important work, but leaves us powerless to address social issues because these critical methods do nothing to advance our understanding of how power is enacted in these contexts. Instead, he suggests, we should follow the lead of Susan Leigh Star, who "manages to keep Bruno Latour open on one side of her desk, while keeping Donna Haraway open on the other" (9), employing Latour's actor-network theory in means that address its critics, who have often pointed out Latour's failure to focus on issues of power in his fascination for the operation of networks.

Actor-network theory is an important concept in science studies, where it has been the source of near-constant struggles since Latour introduced it in the mid-1980s. In John Law's assessment, actor-network theory is "a semiotic machine for waging war on essential differences" (7); for instance, the difference between the "technical" and the "non-technical." Actor-network theory wages this war (see Haraway's "Modest Witness" for a critique of ANT's frequent use of war metaphors) by arguing that entities exist only in relation to other entities, and through those relationships they establish power and social value. They therefore have no inherent qualities whatsoever, whether they are humans, animals, machines, or rocks. This is where controversy arises, not only from modernist scholars who cling to essentialisms and dualisms like "true" vs. "false" or "technical" vs. "non-technical" but from those who decry Latour's equating humans with machines and those who point out Latour's failure to use his theory to point out social

inequities and therefore, like Myers, try to fold in work from more politically active scholars like Star.

While scholars in our discipline have been slow to take up Myers' challenge to conduct actor-network theory work in a way that emulates Star, many have followed his lead in conducting scholarship that explores rather than erases the boundaries between the technical and the non-technical. For example, in *The Languages of Edison's Light*, Charles Bazerman avoids the accusation often leveled against social constructionist approaches—that they ignore the materiality and “reality” of technology—by explicitly incorporating materiality into his analysis. He refuses to separate rhetoric from material technological objects, but at the same time he acknowledges the conventionally understood differences between the material and the symbolic:

For any technology to succeed (that is, to establish an enduring place within the world of human activities), it must not only succeed materially (that is, produce specified and reliably repeatable transformations of matter and energy); it must also succeed symbolically (that is, adopt significant and stable meanings within germane discourse systems in which the technology is identified, given value, and made the object of human attention and action). (335)

Bazerman refers to this joint construction of technologies as “heterogeneous engineering,” simultaneously arguing for the importance of incorporating communication analysis into research on technological development and acknowledging—as many technologists have argued—the importance of examining the materiality of the artifacts themselves, to acknowledge that the common sense split between what is rhetorical and what is technological/non-rhetorical does itself have a persuasive impact, influencing the

ways that technologies are or are not developed. Continued insistence on the rhetorical nature of all artifacts, to the exclusion of larger discussions that more fully incorporate technology into contexts, leads rhetoricians only to further charges of relativism and egocentrism and gets us nowhere in our various quests to enact change.

Part of what is innovative about Bazerman's concept of "heterogeneous engineering" is simply that he's followed the lead of actor-network theory in leveling the machine/human playing field: he hasn't completely foregrounded the machines instead of the people, and neither has he foregrounded the people instead of the machines. Sullivan and Porter take a similar approach to technology in their *Opening Spaces: Writing Technologies and Critical Research Practices*: the purpose of their text is to advocate critical research practices, and as part of those critical practices they argue for understanding technologies not as instrumentalists or substantivists (both of which they see as positions that fail to "allow that technologies are human designs" [104]) but as radical contextualists who understand that technologies can only be viewed as applied "to particular users in particular places at particular times" (105).

Sullivan and Porter base their view of technology on Feenberg's heavily materialist, Marxist theory of technology, so they're in effect working in the opposite direction from Lay and the others discussed above in "Technology is Rhetorical." Where Lay and others who support a substantivist perspective viewed technology as inherently (and strictly) rhetorical and therefore opened themselves to critique as ignoring the importance of materiality, Sullivan and Porter instead start with materiality ("space and place matter") and then point out its limitations, ending up with the argument that rhetorical study is a useful means of achieving the "moving beyond essentialism" goals

of scholars in science studies (108). This is a powerful and important difference in that it makes rhetorical scholarship more relevant and usable to scholars in other disciplines.

This rhetorical move is also central to Robert Johnson's *User-Centered Technology: A Rhetorical Theory for Computers and Other Mundane Artifacts*.

Johnson's task in his book is to promote the relevance of rhetorical theory as a means to better understanding the interactions of humans and technologies. Johnson, too, borrows from Feenberg in setting up the importance of a material approach to technology, but his primary emphasis remains pushing rhetorical theory as a means to better understanding the ways technologies, designers, and users interact with and create each other. Johnson, like Porter and Sullivan and Bazerman, uses a jointly materialist and rhetorical tacit theory to open up the range of what rhetoric can accomplish by focusing not strictly on machines, strictly on humans, or strictly on the impacts they have on each other. None of these scholars naively ignores the common-sense split between the "technical" and the "non-technical," but they also don't naively attempt to push the two sides back together simply because the split is (of course) artificial.

## **IMPLICATIONS FOR MY WORK**

This last group of scholars is the group I most want to emulate in my own work. Their work has successfully found a way to center rhetorical theory in discussions of technology without (1) naively celebrating or decrying the sociocultural "impacts" of technologies or (2) resorting to rhetorical deconstructions of technical artifacts that, while important at the time, are unlikely to find audiences beyond our own discipline. Their work, because it both borrows from and concretely positions itself within contemporary

technology discussions in other disciplines, broadens its potential impact and also provides for more sophisticated rhetorical analyses that move beyond our initial naïve attempts at examining technology and its contexts. In the process, they've shed some rhetorical light on the construction and use of the "technical" vs. "non-technical" split that is the subject of my work in this dissertation.

Now, I believe, the need is for work in our field and others that focuses on the functioning of the split itself, because—as I've tried to show in this chapter—the split is often consciously or unconsciously central to scholarly discussions of technology. Very few have explicitly studied the split at all, examining how and why the boundary between the technical and the non-technical is constructed, reconstructed, and maintained; even fewer have studied how the split operates in the daily lived experience of people and technologies, as Gary Downey suggests is necessary:

This study contributes to an emerging category of alternatives that challenge the meaning and power of the boundary between technology and society without necessarily formulating a single substitute image in advance. Drawing theoretical insight from cultural anthropology, cultural studies, and related fields, these pathways confront people with what their images hide in order to make reevaluation a routine activity of both popular and academic theorizing.... This shifts the problem of analysis and participation from a priori efforts at drawing or erasing the boundary between humans and machines to figuring out how such boundaries get drawn and lived in everyday experiences. (26-7)

Doing what Downey suggests is a difficult task; to examine how the split is constructed, you must be lucky enough to be in a context as it is constructed. To see how it is



reconstructed and maintained, you have to be immersed in the context for a long time. To understand the why of its construction, you have to be able to somehow separate yourself from your long immersion just enough so you can step back and examine the situation. And as a rhetorician, you must further be able to position yourself within the existing technological scholarship in a way that allows your work influence beyond our discipline. In the following chapter, I therefore follow Bazerman, Sullivan and Porter, and Johnson in using a rhetorically centered approach, but I also follow Downey's suggestion that the most important thing we can do to better understand the split is through the observation of everyday experience.

## **CHAPTER 4: ENACTING THE TECHNICAL/NON-TECHNICAL SPLIT**

In the preceding chapters, I sought to (1) establish the technical/non-technical split as a force in both rhetoric and professional communication scholarship and in contemporary workplaces and (2) establish the means by which I hoped to investigate the split. In this chapter, I begin that investigation through a study of the history of change at SecureCom, with a focus on representing the actors and networks (humans, machines, tools, genre systems) that enabled and restricted the creation and evolution of the split over the months I spent observing. I narrate the history of the company in order to show the ways that the split was formed, not inevitably, but through human action, via spatial distribution, through the division of text production and other types of labor, and through what I'll refer to as the "technologizing of social function," the use of texts as technologies to structure work activities.

The best way to elucidate the way the use and production of texts changed at SecureCom and simultaneously changed SecureCom is through concrete examination of the changes that took place as SecureCom moved from a very small company to a larger small company in which most "social" tasks have been farmed out or hired on. In what follows in the next section, therefore, I begin with a brief history of the company's technical/non-technical split and thereafter limit my analysis to the division of labor, space, and textual production.

### **TECHNOSOCIAL BEGINNINGS**

In its earliest stages, SecureCom had minimal split between the technical and the non-technical because the four company founders were the sole employees and therefore

were responsible for nearly all company tasks, from development to sales. As I discussed in chapter 2, SecureCom was founded by four friends (two married couples), all self-described “technical people.” None of them were anxious to get deeply immersed in the non-technical world of business, but they wanted to make some money and have some fun. They had a good technical idea, developed by current President and Chief Technology Officer Dan, that they further developed into a product, the ProBlocker Internet Management Appliance. Company literature and lore include a socially conscious origin story, recalling that Dan had “developed the product with the educational market in mind”:

Working at a university, he certainly knew that students were playing games and using school computers for non-school activities, but what drove Dan to develop our first product—ProBlocker—was when his 7-year-old daughter was unwittingly exposed to Internet porn. He had left her with a colleague who was trying to amuse her with kid-related sites. To Dan’s horror, the very first site led them to pornography. He began to ponder potential solutions, and ProBlocker was born. (company proposal)

But in my interviews with the four, I learned that they decidedly did not set out to change the world or even to revolutionize the way schools and libraries managed the Internet; they developed a good Internet filtering concept and decided they should try to sell it. Their decision had little to do with meeting a need and far more to do with developing what they knew was an effective technology and selling it to people on that basis; this is an approach now referred to by SecureCom’s marketing director (and marketing directors everywhere) as “throwing it over the wall”—the belief commonly

held among engineers that a technically solid product will sell itself and that all that is needed is to release it to the market.

But ProBlocker wasn't a new-and-improved toaster; the four had picked an extraordinarily political and controversial product to throw over the wall. ProBlocker was dicey because it is viewed by many as censorship, and it was particularly sensitive because it targets public and private schools and libraries rather than the corporate marketplace, where, arguably and historically, some civil liberties are suspended when one accepts employment. Originally, filtering systems were hailed by some as a means of forestalling direct governmental censorship, but today they are frequently targeted for a number of reasons:

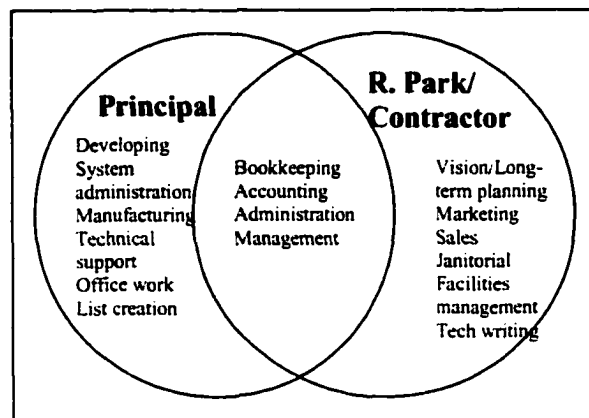
- their lack of comprehensive coverage (blocking all "objectionable" sites is nearly impossible, even if we could agree on a definition of "objectionable," because millions of sites exist and millions more are coming online every month),
- their unfair targeting (sites related to breast cancer or AIDS are frequently blocked as "inappropriate," and several filters produced by more conservative organizations are known to block, for example, the National Organization for Women), and
- their vulnerability (many Web sites are devoted to explaining the relatively simple procedures for bypassing most of the conventional filtering applications).

But directly addressing or articulating the social agenda of their technical product was not something the four engaged in very frequently. This was fortunate for the two

women; in interviews, both Susan and Gina expressed concerns about the politics of their product; Susan repeatedly referred to its purpose as “censorship” and particularly worried about the implication of installing it in public libraries (she was less concerned about installing the product in schools, where she believed ProBlocker would help keep the educational focus on productivity and learning). Gina expressed similar reservations, and while Dan and Glen expressed no reservations about the politics of the product, they weren’t particularly concerned with promoting those politics either. So although the women were marginally concerned about the product, the four went ahead and opened a tiny office in the university’s Research Park, in what is referred to by Research Park staff as the “business incubator.” They formed a company, and the two women, both of whom had worked as software engineers in other companies, worked full time to create, sell, and support the product. The two men kept their full time jobs at the university, Dan as a professor of Computer Engineering, Glen as a technician in the same department.

### **EARLY DIVISION OF LABOR**

So when SecureCom first opened, the four founders had to figure out how to handle everything that was involved in running a business, including many of those tasks seen as “non-technical” tasks. These tasks were less about the technical aspects of creating the product than they were about forming relationships and partnerships, advertising, and generating sales. As we see in Figure 4-1, however, being housed in the Research Park’s “business incubator” had some advantages for the founders. The staff in the incubator helps with bookkeeping, accounting, and administration, and also equipment: they offer a computer lab, a photocopier, and a fax machine. Most



**Figure 4-1: Early Division of Labor**

important, they offer relatively inexpensive office space, and they offer a direct connection to the Internet. They provide the necessary infrastructure so that the young companies they house can concentrate on creating products and getting them out the door; in short, the incubator operates on the assumption of the technical/non-technical split; it provides support services and resources that allow young companies to focus their work on developing the technical.

In short, being in the Research Park allowed the principals to remain heavily invested in the “technical” side of the technical/non-technical split. We can see this “technical” focus primarily in their decision to start the company and release the product despite the political ambivalence to the product of two of the principals but also in the way they elected to structure the company and divide their labor even from the earliest days. The four, all with strongly technical training and inclinations, quickly came to understand how little they knew about the non-technical aspects of running a business and dealing with customers, and they began to make decisions that would re-shape the company in ways that would place their own work more clearly in the “technical” realm that made them more comfortable. Early in the development of the company, therefore,

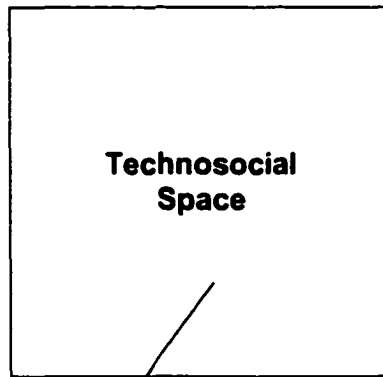
the principals hired another company—Global Reach (GR)—to handle their sales, and not much later they convinced a regional business owner, Steven Krist, to invest in SecureCom and become their CEO and “vision guy,” as Gina referred to him. Steven was a conservative Christian and the owner of a religious publishing company and saw his interest and investment in SecureCom as part of his work for his church; he was very much a believer in blocking “inappropriate” materials in schools and libraries.

The principals limited themselves as much as possible to technical tasks: Susan, Dan, and Glen worked primarily on programming and assembling hardware, and only Gina was left to deal with customers and day-to-day business operations. Susan worked from home programming the Graphical User Interface (GUI) that allowed system administrators to control the access privileges on the ProBlocker unit from a remote workstation. Dan (Gina’s husband and the professor) worked in his off hours and in his office at the university programming the code for the ProBlocker unit itself, the patented part of the ProBlocker technology that actually administered blocks and negotiated access permissions with the Administrator software. Glen (Susan’s husband and the technician) worked evenings building the appliances and handling shipping. Only Gina actually showed up to work every day at SecureCom’s Research Park office, a 10 x 10 windowless room with three desks, four chairs, a bookshelf covered with piles of books and equipment, a printer, and three computers (see Figure 4-2). The rest of the work of the company was “virtual” work, all conducted via phone and e-mail and in off-hours, and Gina was left to keep up the mystique of the company as a traditional, 8-5 presence<sup>3</sup>;

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<sup>3</sup> Maintaining the mystique of being a traditional company was a theme at SecureCom throughout my time there—the general manager at one point chastised me for referring to “Jeanette” rather than our “Technical Support Department” when talking to a customer on the phone. This desire derives from the very social understanding at SecureCom of

of the four principals, her work was the most obviously blended between the technical and the non-technical. She handled product testing, technical support calls and all the miscellaneous jobs that needed to be accomplished, including (before I began my research) surfing the Web for pornography and drug and hate crimes sites that needed to be blocked; she became quite expert at finding porn by entering the right search terms. This task was necessary because when they first started the company in 1996, not many comprehensive lists of objectionable sites existed and so they had to generate their own, a task that in many ways brought them closer to confronting the social issues their product



**Figure 4-2: First Office Space**

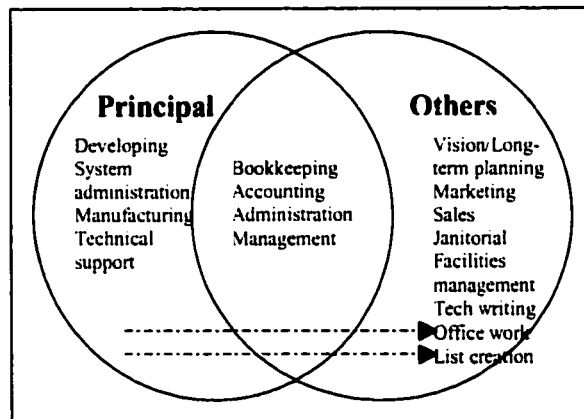
raised: Gina, in one of my first conversations with her, detailed the difficulty of defining “pornography” and “hate crimes”; I remember being stunned that technology had brought us to the point that Gina was in a position to make those decisions for hundreds, perhaps thousands and even tens of thousands of other people.

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creating an ethos of being a company that understands “the way things are done,” which means being, or becoming, a company of size, stability, and dependability.



By the time I began observing the company, however, they had increased their own technical emphasis by purchasing their list from an outside firm (see Figure 4-3), a company that hired many people to surf the Web in order to generate a more comprehensive list. SecureCom began purchasing the list because it was more



**Figure 4-3: Shifting Division of Labor**

comprehensive, of course, but also because doing so freed up Gina to focus on other tasks, made her days less porn-filled, and, not incidentally, eliminated yet another connection they had with the non-technical aspects of their product, just as had hiring GR and Steven. Still, when I first came to watch Gina in January 1999, she frequently wished in various ways that her role in the company were more “technical”; at the time she did “all the jobs nobody else wants to do,” which meant that she didn’t get to do development as the four principals had originally planned. In her previous job at a local software company she’d done more hands-on technical work and had the prestige that went along with that, and she clearly also enjoyed interacting with the other employees.<sup>4</sup>

<sup>4</sup> It may seem that a desire to interact with others is “non-technical” and counters the desire for a purely or more “technical” role. But “technical” doesn’t necessarily mean “anti-social”; it more generally means being able to pick and choose one’s social interactions.

Her disillusionment with her role at SecureCom grew to the point that only a month later she formally resigned from the company. The resignation didn't take.

### **Texts**

In the previous section, we saw how at this early stage in the company's development, the principals recreated their own understanding of the technical/non-technical split through the division of labor. The split was also created through the careful enlistment of textual production, which, in its position as a boundary act, had to be carefully divided in order to create and perpetuate the desired technical/non-technical split. That division was not always clear-cut, as we'll see in this section; most texts that were viewed as "technical" texts were handled in-house, and those that weren't or that were viewed as having a technical expertise that the principals didn't have were farmed out.

The early division of texts (see Table 4-1) reveals the complexities of creating a split between the technical and the non-technical; note the apparently arbitrary way the four principals elected to divide up these early documentation tasks among themselves and outside parties. Although they were "technical people" who had started the company to make money—not for any overtly political purpose—and although they often disliked and felt uncomfortable with non-technical tasks, they didn't simply farm out all of the seemingly non-technical document work as they did the sales and marketing materials and the press relations pieces. For instance, they still wrote and maintained control over their Web site. To my eyes, the Web site was surprisingly sales-focused and political, as when they describe their ProBlocker product on the "About ProBlocker" page:

**Table 4-1: Early Division of Text Production.**  
**Company text production mirrored, in most respects,**  
**the technical/non-technical division of labor.**

CREATED BY PRINCIPALS	CREATED BY RESEARCH PARK SUPPORT STAFF AND CONSULTANTS
<ul style="list-style-type: none"> <li>• <b>Corporate Communication:</b> Company description, fact sheet</li> <li>• <b>Correspondence:</b> Informal letters and e-mail with customers, each other, sales staff, and CEO</li> <li>• <b>Record Keeping:</b> Logs of sales, customers, potential customers, accounting records</li> <li>• <b>Technical Docs:</b> Sketches, drawings, network diagrams, flowcharts, product plans, quick reference sheets</li> <li>• <b>Web Site</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Legal:</b> Contracts, agreements</li> <li>• <b>Press:</b> Press releases, published pieces</li> <li>• <b>Sales/Marketing:</b> Flyers, brochures, release letters</li> <li>• <b>Technical Writing:</b> Product manuals</li> </ul>

ProBlocker is a revolutionary new system that allows you to enforce your Acceptable Use Policy and protect your students from accessing inappropriate material without slowing down network performance. This self-contained device attaches quickly and easily to your existing network without loading or configuring software at each workstation. All updates are easily performed from a single workstation using simple, intuitive software called ProBlocker Administrator.

What is obvious about this text to even a casual reader is its marketing style; words like “revolutionary” pop out. What is less obvious is the sophisticated market positioning that’s going on here. “Self-contained,” “device,” “quickly,” “easily,” “simple,” “intuitive,” and “without loading or configuring” are not just random “good” qualities but are carefully chosen to set ProBlocker in opposition to existing products, which were, and still are, thought to be laborious to install and required separate

machine-by-machine maintenance. Here, then, we see a very fuzzy line between the technical and the non-technical; the technical qualities of the product are designed and described in relation to existing products in order to best appeal to the potential market, and what is clear here is that the SecureCom principals had a strong sense of what was necessary to position themselves in a way that would generate sales.

Despite the fact that these Web site activities are non-technical functions, the principals chose to maintain the Web site in-house despite takeover offers from GR, the outside company handling their sales, once the Web site became significantly out of date. When questioned or pushed (as when Brad from GR actually developed an alternative Web site that incorporated the still-relevant content from the old site into a new design), Susan replied that she would continue to maintain the site herself because she didn't think Brad's site was technically competent, and she didn't trust GR enough to allow them access to the Web server. This was despite the fact that she repeatedly told me she wasn't a "content person," meaning that while she felt perfectly comfortable with HTML coding and graphic work, she didn't feel confident in her abilities to create "non-technical" or (in her favorite phrase) "schmoozy" (read: marketing-style) text, despite the fact that she is actually a strong writer. Viewed in these terms, the Web site, despite its non-technical content, could be seen as technical turf that the principals were hesitant to give up.

Similarly, many of the texts the principals wrote seemed to me focused on maintaining social relationships with the sales staff at GR, which was the subject of the most significant internal tensions in the company. From the beginning of my observing work practices at SecureCom, I asked my participants to please share "interesting"

documents with me. I did so both so that I could see the documents and so that I could get a sense of what they would think an interesting document would be, so that I could get a sense of what most occupied their minds and their time. Over the first three months of my study, every document that they shared was an e-mail from or about GR, always either a carefully worded e-mail from a GR employee angry or frustrated over a shipping delay, a product return, an e-mail from one of the principals putting GR in its place, or a smooth-things-over e-mail from Steven. Here we see writing in action as a boundary object, being enlisted by both GR and the principals in order to argue for or defend their own turf, with each group using writing as a tool to promoting their viewpoint, each believing that the issue under discussion clearly fell under their own authority as the “technical” or “non-technical” people.

At the same time, while principals handled almost all of the “technical” writing in-house, throughout the history of the organization they farmed out the writing of their product documentation, a type of writing often thought to be on the far “descriptive” end of the mythical descriptive/persuasive continuum. One might expect, then, that it would be a type of communication over which they’d wish to maintain control. But as I discovered when I began writing their product manuals myself, they farmed out their manuals because they viewed writing as a type of expertise they didn’t possess and didn’t particularly want. In fact, much of the division of labor in document production in this early phase of the company was determined as much by the principals’ perceptions of their own expertise and the ease of acquiring external help as it was the types of work they’d prefer. Their base definition of “technical” didn’t allow or cause them to acquire other kinds of technical expertise.

What was considered a “technical” text, then, was somewhat unpredictably defined by the principals during this phase of the company’s development. I was surprised, certainly, that they hadn’t divested themselves of all of the (to me) obviously “non-technical” texts as quickly as possible, or (alternately) that they considered these texts technical *enough* and *enough* within the realm of their own expertise that they were reluctant to give up their control, particularly if doing so meant handing control to GR. At the same time, as I’ll discuss in the next section, they were not satisfied or comfortable with their own document production, as they were eager to eliminate their direct responsibility for these texts as quickly as they could.

## **FURTHER TECHNOLOGIZING THROUGH INITIAL HIRING**

### **Labor and Space**

To this point, the company was coasting along without significant external financial investment, a thoroughly forecasted business plan, or any official employees beyond the four principals<sup>5</sup>. But Gina’s threat to leave spurred the company into action, and in March 1999, the principals decided to hire a full-time employee to help free up some of Gina’s time so she could work more on the “technical” side of developing products, so she could have a more flexible work day, making it easier for her to handle her children’s schedules, and so she wouldn’t be sitting alone all day in the windowless office. They posted an ad in the local paper looking for an “administrative assistant” who could be trained to eventually handle some of the technical support, but what they really

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<sup>5</sup> The marketing director has since expressed regret that the four principals didn’t move more decisively to establish a market niche for the ProBlocker product. They were in the market at the ideal time and in the right climate, but they were unable to capitalize for reasons that I think will become clearer throughout this chapter.

needed at the moment (as they admitted) was a warm body in the office answering the phone between 8 and 5 every day, with an hour off for lunch. They eventually hired a 23-year-old woman named Michelle. What put Michelle over the top of the other candidates, despite her sketchy job history, was her effusive personality and the fact that her resume listed an ability to handle accounting software.

Michelle's hire was primarily intended to allow Gina more time to focus on the "technical." Michelle would be handling all of the generic office tasks and would eventually take over technical support, allowing Gina to avoid most of the "non-technical" things she'd been given by default due to the structure of the company. But on Michelle's first day, it became apparent that she wasn't going to fit the bill as even a warm body. Her computer skills were exaggerated, and after showing up an hour late, she took a 3-hour lunch, coming back just at the point that Gina was asking me if I thought she'd done something to offend Michelle. And this wasn't going to be unusual: In the months she worked there, Michelle arrived on time fewer than five times and almost never worked a complete day.

But despite her deficiencies Michelle was employed at SecureCom for months. After initially trying to benefit from Michelle's hire by coming in later and leaving earlier, Gina gave up and started coming in at 8 again so that there would be someone to answer the phone for customers. After a couple of months, the principals did remove Michelle from working on a salaried basis, paying her only for the hours that she actually came to the office, but Michelle still struggled with coming to work because, as she told me in an interview, she felt unmotivated about coming to work when there was often very little for her to do. Gina's response was that Michelle would have more to do if she came

in for training; this was a vicious circle for Michelle and Gina; the other principals were largely removed from the discussion—they didn't have to handle Michelle on a daily basis, so while they joked about her attendance they left the personnel issues largely up to Gina. The conflict was never really resolved until the company made its next big move.

So while the various means that SecureCom had employed to date to run a company while working purely as technical people had worked fairly well, this gambit had not paid off, and they were stuck temporarily with an employee they didn't know what to do with; they lacked (or avoided) the social skills of personnel management to such an extent that they were unable to fire even a clearly unsatisfactory employee.

### **Texts**

As we see in Table 4-2, hiring Michelle had far less impact on text production than the principals had originally hoped, largely because she wasn't in the office enough to really get trained on what she needed to know to take over writing tasks. She *was*, however, able to take over much of the internal record-keeping; at the time, there weren't all that many records to track, and Gina and Susan trained her to run the database software so that she could enter sales and contract renewals as they came in. The principals, however, were left with all of the informal correspondence, the kinds of documents you might expect an administrative assistant to handle.

At this point in the company's development, my own participation in the company's text production had also increased, in part because of Michelle's inability to manage all of the tasks they'd originally hoped she'd take over; although I originally signed on to handle technical documentation, I found myself writing some press releases,



quick reference sheets, and marketing materials as the principals continued to eliminate more and more texts from their primary task lists. The principals had managed to eliminate (and only partially eliminate, at that) one additional type of texts from their agendas, but the elimination of record-keeping is interesting because it is so clearly within the realm of their expertise, thus pointing to a rationale for text elimination that is more complicated than just suggesting that they didn't feel qualified. In the next section, I discuss an even stronger technical/non-technical explanation.

**Table 4-2: Division of Text Production. Only "Record Keeping" tasks were shifted by initial hiring.**

PRINCIPALS	OTHERS
<ul style="list-style-type: none"> <li>• <b>Corporate Communication:</b> Company description, fact sheet</li> <li>• <b>Correspondence:</b> Informal e-mail with colleagues</li> <li>• <b>Correspondence:</b> Informal letters and e-mail with customers, sales staff, and CEO</li> <li>• <b>Technical Docs:</b> Sketches, drawings, network diagrams, flowcharts, product plans</li> <li>• <b>Web Site</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Legal:</b> Contracts, agreements</li> <li>• <b>Press:</b> Press releases, published pieces</li> <li>• <b>Record Keeping:</b> Logs of sales, customers, potential customers, accounting records</li> <li>• <b>Sales/Marketing:</b> Flyers, brochures, release letters</li> <li>• <b>Technical Writing:</b> Product manuals, quick reference sheets</li> </ul>

## VENTURE CAPITAL: BECOMING A CONVENTIONAL CORPORATION

### Labor and Space

Up to this point SecureCom had been trying to acquire venture capital funding from various sources, because they were dependent on money from Steven and some other small investors and were keenly aware that further expansion would be impossible without further money. They also had become aware through the Michelle episode that they needed to bring in a manager if they were going to be able to both add new employees and manage those employees effectively. Eventually they acquired funding

with the help of Steven and the people at the Research Park, who helped them put together proposals, handle the social interactions, and make the necessary connections. As soon as they acquired the funding everything else changed, and the business became a growing concern. Among the first moves they made with the new money was hiring business professionals they felt could take the company to the next level. The first was Evan, an MBA with sales and business experience whom they hired as general manager and a vice president.

Also among their early post-funding moves was acquiring new office space, just before Evan was hired, both because they needed additional space for the new hires (both accomplished and planned) and because they'd decided to move from their virtual structure to a more conventional one—Gina, Susan, and Michelle would all have desks and 8 to 5 roles. The new space was opened in mid-August, and then officially opened in a dedication ceremony on September 1, a ribbon cutting attended—due to Steven's political interests and connections—by Elizabeth Dole and her political helpers as she was in town for the preliminary rounds of the 2000 presidential campaign. All the SecureCom staff members wore Dole stickers (somewhat nervously, as few would choose to vote for Dole), and at the ceremony, Steven and Dan both said some words, and then the relatively a-political principals nervously shifted from one foot to another as Dole delivered a speech in which what she said directly supported SecureCom's apparent mission to remove pornography from schools and libraries where computing was supported by public dollars. She concluded by personally cutting the ribbon and then shaking hands and chatting briefly with those in attendance, who were mostly the media,

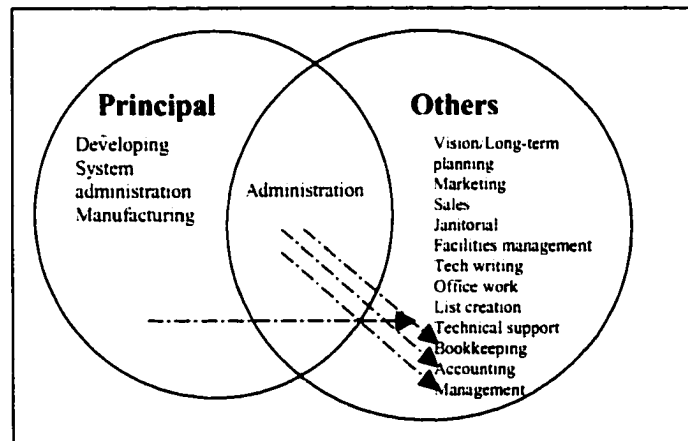
Dole fans, and people from other small businesses in the research park. Susan later said she thought the Dole event

...was a waste of money. I guess I admire her as a woman who is as honest as any politician...I wouldn't have done it, because I am not sure that as a company we should be aligning ourselves with a politician.

Susan here re-emphasized the ambivalence the principals felt about any kind of overt politicization or socializing of their product. But ironically, just as the public position of the company became more overtly political than ever, the roles of the four principals became less so as their titles and the emphasis of their work moved from slightly more mixed, technosocial roles to even more isolated, "purely technical" roles. This was possible because soon after the ribbon cutting, the company (largely at Evan's behest and, more tacitly, that of the investors) began hiring in earnest and shifting the roles of the existing players. Susan moved into a cubicle in the office and was named software manager (a role that lasted only briefly; Susan soon decided she was happier as a systems administrator, a non-management, less social role), Glen moved his workspace from the storage unit he'd previously used to a back room in the main office, and Dan became seemingly more and more detached from the day-to-day activities of the organization and became more of a figurehead.

Most obvious was the change in Gina's role; her function as a catchall began a process of erosion. Among Evan's earliest duties as general manager were hiring a dedicated technical support person (Jeanette), firing Michelle for lack of attendance, and hiring an administrative assistant who would come to work regularly and understood the workings of an office (Carol). The effect of these hires on Gina's work was noticeable;

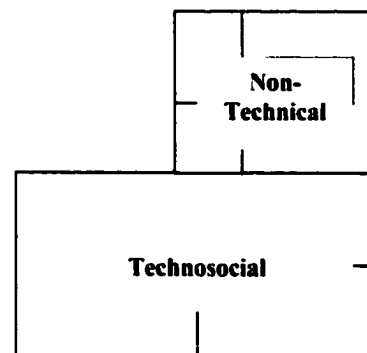
she was no longer answering the phones, doing paperwork, or doing accounting and administrative functions (see Figure 4-4). Her formal title was now “senior software engineer,” a purely technical role of the kind she had desired, although she experienced difficulty constructing her activities to match the role. (In fact, in my interview with her in February 2000, just before I stopped taking data, she indicated that she still wasn’t sure



**Figure 4-4: Changing Division of Labor**

what she was supposed to be doing all of the time and frequently considered quitting.)

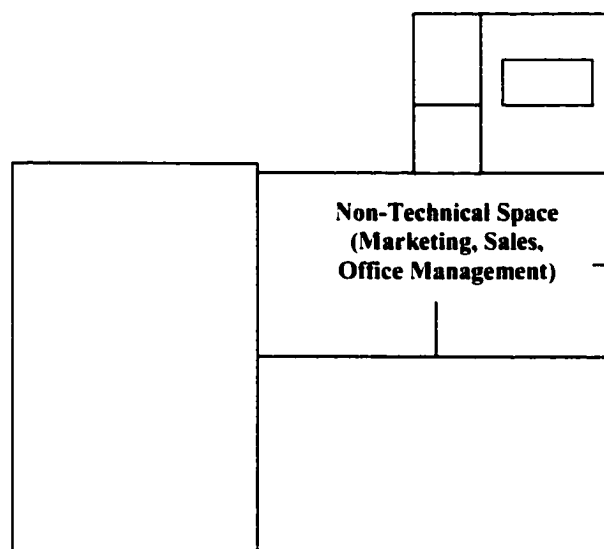
The company’s new space further emphasized the changing technical/non-technical character of the organization. Where before there had been only a tiny workspace shared more or less equally by all participants, a clear technical/non-technical split was built into the structure of the new office (see Figure 4-5). Visitors were greeted at the front door by Carol, who sat at a reception desk adjacent to a reception area, and Evan’s large, naturally lit office was right off the



**Figure 4-5: Second Office**

reception area, where he could easily meet and greet visitors. The non-technical work of the organization had been delegated to the front of the office, and the rest of the employees, including the new developers they'd hired, worked in a large open area in the back doing the technical and boundary work of constructing the product's software and hardware and writing documentation and marketing and press materials.

Only weeks after hiring the developers, SecureCom installed cubicles for all the new and existing employees, and also installed a networked server and computers and telephones in (almost) all of the cubicles, thus formalizing organizational communication. Not long after, the company took over the office space next door, cutting a new door into the wall and creating a further physical separation between those considered to be "technical" and the rest of the company staff (see Figure 4-6). The developers were all moved. Less certain was the fate of me and Jeanette, both of us communicators, but eventually the developers declared that we were both technical enough that we could be on their side of the wall. Susan, on the other hand, in her new role as software manager,



**Figure 4-6: Third Office**

sat on the other side of the wall, as did Evan, Carol, and all of the new non-technical hires that came quickly on the heels of SecureCom's takeover of the new office space (a marketing director, a marketing intern, and two salespeople). In addition, Glen moved his box-construction area from the back room in the old office into the back of the developer's room, and his old space became the new employee lunchroom.

The hires and moves completely reshaped the organization. The four principals faded further and further into the background as others took over the roles they formerly held and their roles became more strongly defined and limited; only Glen retained pretty much the same role he had always had, building the appliances in the back room of the new office. Gina and Susan both became "senior software engineers," apparent demotions from their early positions as Vice President and President of SecureCom, respectively, but demotions with their blessings because they were more than happy to get away from the weight of the responsibility they carried early in the history of the company. They had effectively moved from full-blown technosocial participants to more highly specialized technical participants with all the accompanying prestige in addition to the automatic prestige of being a company founder.

In short, the formalizing of SecureCom's organizational structure that I have described in this section decisively redistributed the technical and the non-technical, constructing a definitive split that enabled the original four principals—and future technical hires—substantial freedom from the non-technical aspects of the business. At the same time, it put non-technical hires, like the general manager, the marketing director, and the salespeople, in a position where they were responsible for understanding technical content in order to effectively do their jobs (SecureCom is, after all, a computer

firm) as well as having the necessary “technical” skills to accomplish their managing, marketing, and sales tasks.

### **Texts**

The assumption constantly echoed at SecureCom was that all the changes taking place were simply “the way things are done in business,” particularly in the computer industry. And indeed, this round of labor and space changes brought and were facilitated by changes in the way textual production was distributed at SecureCom, changes that made SecureCom’s text production more like that of other companies. All types of writing were once again enlisted within the company itself, *causing* as well as *resulting from* the construction of a definitive technical/non-technical split. The principals rid themselves of business record keeping, much of their informal correspondence, and the Web site, leaving themselves only with e-mail messages and the technical documents (white board sketches, the occasional white paper, internal documentation) necessary to organize the development team (see Table 4-3).<sup>6</sup> From this point in the company’s development to the present, the principals no longer needed to concern themselves with day-to-day text production.

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<sup>6</sup> After my period of data gathering had ended, SecureCom also hired a development manager from the outside; a significant part of her role is taking over project management and technical documentation tasks.

**Table 4-3: Division of Text Production. The second round of hiring had the effect of moving text production from the principals' jobs to others in the company.**

PRINCIPALS	OTHERS
<ul style="list-style-type: none"> <li>• <b>Correspondence:</b> Informal e-mail with colleagues</li> <li>• <b>Technical Docs:</b> Sketches, drawings, network diagrams, flowcharts, product plans, quick reference sheets</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Corporate Communication:</b> Company description, fact sheet</li> <li>• <b>Correspondence:</b> Informal letters and e-mail with customers, sales staff, and CEO</li> <li>• <b>Human Resources:</b> Travel, reimbursement, vacation forms</li> <li>• <b>Legal:</b> Contracts, agreements</li> <li>• <b>Press:</b> Press releases, published pieces</li> <li>• <b>Record Keeping:</b> Logs of sales, customers, potential customers, accounting records</li> <li>• <b>Sales/Marketing:</b> Flyers, brochures, release letters</li> <li>• <b>Technical Writing:</b> Product manuals, quick reference sheets</li> <li>• <b>Web Site</b></li> </ul>

Also added to the textual mix was a more formal review process for those of us enmeshed in the “non-technical” realm (which, despite my “technical” credentials, I clearly was). The hiring of “non-technical” people meant that some people in the firm were more concerned than the principals had been with the implications of the perceived meanings of texts for corporate audiences. Whereas the principals considered text production as a “technical” skill that was useful when applied to technical subjects but a necessary evil or “schmoozing” when applied to the non-technical, the new social staff saw writing as a crucial boundary activity—they felt it was important to get the technical



details right, but just as important to get them right in the right ways to be persuasive to customers. In the past, most of the documents I and others created on behalf of SecureCom were read only for a “technical” check; my documents in particular were fairly immune to any other kinds of checks, since I was a “content” person.

But with new marketing, sales, and management staff in place, “non-technical” processes were added to textual production; more people now read each document I produced, and there was significantly more scrutiny placed on all aspects of the documents. For example, among the earliest documents I produced were release letters for the new version of the ProBlocker product; release letters are letters that go out with new products to persuade customers of the benefits of those products. These are potentially touchy letters, but in the early months of my work at SecureCom, I printed the letters and sent them after quick technical checks by the principals. The manuals, on the other hand, were read by the principals with a fine-toothed comb. By way of contrast, after the company reorganized, the new general manager—who worried very little about technical documents like the product manuals—asked me to help him write the company business plan, and it turned into an excruciating word-by-word, months-long process of deciding how we would portray ourselves to potential investors. Even the Web site map I created to help visitors find our office went through no fewer than six revisions. There was, in short, a balanced technical/non-technical approach to writing as there was to no other aspect of the company’s work, which had for the most part been split decisively down the middle.

And there were further shifts in text production. Among the first tasks Evan and Carol took on was the formalizing and codifying of organizational processes through the

production of various kinds of documents. Most prominent among the new documents produced were human resource documents; whereas when the company was just the principals and a few others there was little need for codifying vacation time, etc., now there was a form to fill out for nearly every occasion. Evan and Carol also quickly collaborated with an external human resources firm to create an employee handbook, stock option plan, and other “first day” documents that are expected by new employees in a conventional corporation. This is an interesting technical/non-technical development, because while the principals had used documents primarily with the intention of *reflecting* technical realities—the use of their product, the superior qualities of their product, the status and number of orders of their product—the new socially oriented employees instead explicitly used texts as *technological artifacts* in their own right. The human resource documents were used to put rules and constraints on the employees of the firm, in order to regularize and conventionalize previously ad-hoc processes. As such, the documents were used to technologize the otherwise non-technical function of managing employees.

#### **TECHNOLOGIZING OF SOCIAL FUNCTION**

As this last example suggests, as much as writing in the organization was shaped by emerging and different processes and structures within the organization, writing also itself shaped the technical/non-technical boundary within the organization. This complexity is possible because while writing is certainly a social mediator, as a boundary object it is also itself a technology; in the humanities, we tend to think of writing as purely communicative and therefore as inherently “non-technical.” but this is arguably

*our* enactment of the technical/non-technical split. We distance ourselves from things we see as beyond our purview—the “technical”—which may be part of what is behind the impulse of many of our scholars to deconstruct technologists’ concepts of “technology” without much looking at our own. As a result, we miss the ways that texts are used as tools, blunt instruments used to mediate or even de-socialize human interactions. In this section, I suggest that much of SecureCom’s movement to a clear delineation of technical and non-technical was accomplished through what I’ll refer to as the “technologizing of social function,” by which I mean replacing social interactions with technological interaction, whether through machines or texts or both.

Obviously, machine- and text-based interaction was always a part of how SecureCom communicated as an organization—in the company’s early days as a virtual organization, the principals communicated almost entirely by phone and e-mail because there were only rarely times that they were all physically present at once. What is interesting to consider is the way that similar types of machine- and text-based interaction remained prevalent, albeit in different and developing fashion, as the company grew and became a more conventional, everyone-there-from-8-to-5 kind of corporation. E-mail and phones remained central to the work at SecureCom. These systems allowed employees to maintain much of the virtuality of the early firm even as they sat in the same office with each other; they were frequently used even for casual conversation between people sitting only feet away from each other. And additional systems augmented the virtual possibilities of the office. For example, one of the earliest systems that was installed after SecureCom hired developers was a source control system. When only one person writes all of the code for a software package, as had been the case at

SecureCom previously, they simply maintain a folder of files, do all of the editing themselves, and compile the software when they're finished. But when a group of developers works on the same project, it becomes necessary to develop some system to manage the folder of files; otherwise, multiple developers could be changing the same file at the same time in different ways and chaos would result. Historically, developers had to meet and communicate frequently to ensure they didn't step on each other's toes; now, the source-control software handles the interactions. Developers "check out" the piece of code they wish to edit, make their changes, and then "check in" the code; any conflicts between their code and that checked in by another developer are handled automatically by the software. SecureCom's source-control system, then, technologized and turned into writing what would otherwise have been a social interaction between developers, albeit an undesirable, uninteresting, frustrating interaction.

The source-control example is a good one; as SecureCom grew, virtually every communication process that was once individualized was networked among a group of people, and the result was a company-wide network system that in effect allowed source control over all documents. The files for the company Web site, once maintained only by Susan, were incorporated into a source-control program to enable numerous people to work on the site at once without needing to consult one another. Paper filing cabinets and floppy disks became networked folders shared from a single server machine, enabling everyone electronic access to a select group of files at all times<sup>7</sup> from the comfort of their own cubicles.

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<sup>7</sup> After my research was complete, the company installed an "Intradoc" system that handled source control for traditional business documents like memos, letters, etc. and allowed 24/7 Web access to those files.

Technologizing social interaction in this fashion tidies up social interactions in numerous important ways. It regularizes and guarantees the outcomes of certain types of interactions—for example, ensuring that records are kept (automatic with e-mail, not automatic with paper), that document revisions are kept and that different revisions don't overwrite each other, that relevant people are informed of what is going on (for example, with SecureCom's current system, management simply checks a Web page every day to see what changes have been made to existing documents and what new documents have been created). These types of technologizing also have the effect of forcing communications, formerly handled in ad-hoc oral fashion, into written communication; the production of documents, whether computer code, bug reports, memos, or press releases, becomes central to most employees' job functions. In effect, SecureCom's software and networking, as at most companies, provides a kind of de-facto management enforcement system that forces employees into particular kinds of communication; managers could try to regularize communication with style guides, top-down edicts, etc., but ignoring management protocol now is more difficult as management philosophy is written right into the system. For example, the developers' code debugging process was regularized with a Web-based interface system that acted to hold particular developers responsible for particular code bugs. When a tester found a bug, they reported it via the interface and thereby automatically notified the developer and the manager and also created a responsibility record that made clear who was responsible for what. When the developer fixed the bug, they reported the fix via the interface and thereby automatically notified the tester and the manager and removed themselves from responsibility. In other words, all these functions that when SecureCom only had two developers were carried

out via e-mail and face-to-face chat were now hard-coded into the system in a way that guaranteed bugs didn't get lost or ignored. The "non-technical" interaction of coding, then, all becomes property of management, as writing is reduced to "technical" language and the technical people are asked only to produce technical texts in prescribed social forms. And frankly, that's usually what they want.

Management also writes its agenda into the physical construction of the office; the construction of the cubicles themselves was a significant technologizing. When the developers were first hired, they, the tech support person, and I all sat in the same large room at long tables, a situation that was fairly ideal for initial learning about the products and conversing about potential improvements and changes. But soon after, the manager began picking out swatches for cubicles and arguing about how high the walls should be to minimize noise and distraction—a similar theme to the above insistence by management on isolating the developers away from salespeople. Isolation—although not complete isolation—it was assumed, would help efficiency and productivity by allowing the developers to avoid social distractions and focus on the task at hand. Their self-selected team space (they could have sat at different tables) was quickly partitioned into individualized pods.

When asked, the administrators and technicians who chose to install these sorts of machine applications responded "this is the way it is done." But the impact of these applications on the organization was profound; SecureCom pursued a consistent strategy of networked individualizing, using cubicles, individual computers, e-mail, and telephones to create individualized points of contact for each employee, but

simultaneously ensuring that all employees were linked in ways that were assumed would optimize efficiency and productivity without enabling distractions.

## CONCLUSION

The combination of the division of labor, space, and texts along with the technologizing of social function had the joint effect of creating the technical/non-technical split at SecureCom and ensuring its stability. The ways that the company enlisted writing as a boundary object actor caused the creation of a particular kind of network that both enabled the principals to mold the kinds of positions they desired and constructed SecureCom as a conventional corporation. The term “conventional” here is, I believe, key to understanding what happened. While I wouldn’t claim that my findings are generalizable beyond the walls of SecureCom, I would suggest that factors beyond SecureCom impact SecureCom expectations. The frequently cited SecureCom belief in “the way things are done” is important here; there is a *habitus* involved that creates beliefs and expectations of the way that successful companies operate (one could also say “paradigm”). Because the split is part of the way successful companies operate, people act to enact the split. That action creates the kinds of *non-technical* factors that shape the high value we place on technical expertise and the according, paradoxical low social expectations we have for technical people.

## CHAPTER 5: LIVING WITH THE TECHNICAL/NON-TECHNICAL SPLIT

In chapter 4, I discussed the change of SecureCom from a company with a technosocial beginning to a company with a fully developed and integrated technical/non-technical split. In doing so, I focused on the ways that texts helped create the split and the ways that, in turn, the split created the need and motivation for different kinds of texts and placed different kinds of value on text production. I sought to describe the circular manner in which the split and the texts influence and are inseparable from each other; for example, the movement of textual responsibilities from one set of employees to another caused the growth of the split, and in turn that movement enabled the repositioning of work, allowing technical workers to focus more on their technical work and non-technical workers on their non-technical work.

In this chapter, by way of contrast, I analyze what the split does once formed; how does the split govern the writing activities at SecureCom, and how do those writing activities, and the relative value placed upon them, govern the lives of the people who work there? To examine this question, I analyze the field notes, documents, and interview data I gathered at SecureCom to construct an understanding of the impacts of the technical/non-technical split. I suggest that the creation of the split at SecureCom had numerous effects on the everyday lives of the people who work there, particularly in terms of the amounts and kinds of writing they did:

- **Technical/Non-Technical Work Was Specialized, Boundary/Writing Work Was Broadened.** As the company grew and the overall range of tasks expanded, day-to-day work for individuals became focused on a more limited range of tasks (as I touched on in chapter 4); work became more and more



specialized along a spectrum of technical-to-non-technical. Software developers organized shared work based on how technical each of their understanding of computers was, and SecureCom hired non-technical people to handle social tasks like sales and marketing. The exception to this rule was in technical writing practices, which continued to operate as a boundary act, neither entirely technical nor non-technical and not particularly focused on a narrow range of tasks.

- **Power Was Redistributed.** Power was redistributed in the organization due to the work specialization accomplished by the technical/non-technical split. In this section I rely on Bourdieu's terminology to discuss ways in which various types of capital—material, social, symbolic, and cultural—are redistributed, with those on the far ends of the spectrum, those with the most autonomy to select, create, and edit their own texts, receiving more and more varied capital than those who sit on or cross the technical/non-technical boundary. For example, the most technical of the developers were given authority to set their own schedules and tasks, along with substantial prestige and pay. Similarly, the highly non-technical office manager came and went as he pleased and received the most pay in the organization.
- **Political Distance Was Granted To Some, Others Were More Enmeshed.** The most technical employees and owners of the company were, as a result of the technical/non-technical split, granted significant freedom from the political ties of SecureCom's controversial product. While unquestionably they could (and occasionally did) get involved in discussions and debates

about the product's potential impacts, the limits they were allowed to place on their kinds of text production granted them the luxury of a more ambivalent position because their day-to-day work didn't require reflection or analysis.

In what follows, I elaborate on each of my three claims in greater detail by drawing on my collected data. As a result of this analysis, I conclude with a bridge to chapter 6 by suggesting that the creation of the technical/non-technical split allows SecureCom to enlist the genre of "corporation" in order to establish its ethos as a viable organization. In other words, the split enables SecureCom to write itself to peer organizations, potential partners and investors, customers, and current and potential employees as an organization of conventional structure and suitable size, establishing its credibility as an organization that can be expected to react in typical ways to typical situations (e.g., when given money, it will deliver products; when given problems, it will fix them). Thus, the split causes and allows SecureCom to create conventional relationships both within and outside of the company, placing conventional value on work and, hopefully, generating sales that will allow the company to continue its growth.

#### **TECHNICAL/NON-TECHNICAL WORK WAS SPECIALIZED, BOUNDARY/WRITING WORK WAS BROADENED**

The technical/non-technical split, a product of the movement of texts and text production, has a circular relationship with work practice at SecureCom. As I discussed in chapter 4, daily work was re-distributed both as part of forming the technical/non-technical split and as a result of the formation of the technical/non-technical split. As the company grew, the overall range of tasks performed within the company grew as

outsourced tasks (including marketing writing and sales) were moved into the company and new tasks became necessary (including human resources and the technologizing of social function). More important for my purposes here, daily work on texts was similarly re-distributed; obvious “technical” and “non-technical” individuals who had been responsible for a broad range of texts had their work focused on a more limited range, while boundary workers who had been responsible for a more limited range became responsible for a broader range. In general, work became more and more compartmentalized for the ends of the spectrum while employee task lists gradually expanded as their roles became those of catch-alls whose duties encompassed all work not easily classified as technical or non-technical.

For example, as I discussed in chapter 4, when the co-founders first founded the company, Gina’s task list was extremely broad; because she was the one worker who came to the office every day, she was responsible for all less easily classifiable tasks, while the work of the others was fairly granularized (Glen’s work was limited to hardware construction, Susan’s to Windows-based programming, Dan’s to DOS-based programming). In general terms, Gina occupied the technical/non-technical boundary area, and she was responsible for all tasks not handled by other co-founders or outsourced, including technical support, record keeping, customer service, the majority of dealing with suppliers and resellers, etc.; her work was manageable because the co-founders had opted to outsource so many tasks, including, interestingly, most non-technical and boundary writing tasks (marketing and sales writing, technical writing). While Gina clearly occupied a communicative role in the company, writing tasks were outsourced or handled by resellers as writing was a skill set the co-founders did not feel

they possessed, even though, as evidenced by their Web site, they were perfectly capable when they felt the need to be.

But as SecureCom began to grow as an organization, work was both brought back into the organization from being outsourced, due to the co-founders impressions of the “corporate genre” and also redistributed with an eye towards focusing the co-founders’ work on “purely technical” tasks, excluding both (non-code) writing and other communicative tasks. The first hire that SecureCom made was designed not to bring outsourced work into the fold, but to allow Gina to focus on technical work. Michelle was hired to allow Gina to focus on the more technical aspects of her job and eliminate technosocial boundary tasks like record keeping and technical support, tasks not technical enough for Gina but nonetheless too technical for Michelle. Michelle, as I suggested in chapter 4, ended up not working out because her inability to operate as a boundary worker; she was neither “technical” enough to understand the products or socially competent to handle the interpersonal considerations of the job: talking to customers and dealing well with co-workers (she and Gina fought constantly about Michelle’s inability to be on time or perform basic tasks).

Her hiring therefore backfired on the co-founders, particularly on Gina, who was forced to spend a lot of time and energy handling the non-technical work of attempting to manage Michelle’s tasks. Despite these egregious problems, however, Michelle worked at SecureCom for many months and was finally let go only by the new manager that the co-founders hired to run their business, Evan. The key lesson the co-founders had learned from the Michelle experience was that simply hiring an employee was not sufficient for allowing them to focus on the “technical” if they had to manage the

employee—it made sense, then, that their next hire was Evan, someone who would not only handle Michelle but all future Michelles. Evan’s role, then, was not to bring previously outsourced work into the company but to remove the burden of organizational management from the co-founders, allowing them to focus on their increasingly limited ranges of tasks.

Hires that followed Michelle’s hire were more carefully screened and managed in terms of the technical/non-technical split to ensure that they would help rather than hinder its development; whether they were hired to make outsourced tasks internal or take the loads off existing employees, potential employees were checked to make sure that they understood their role in terms of the split and would be able to contribute appropriately. They were screened by separate technical and non-technical teams. Potential non-technical employees (salespeople) were interviewed only by Evan, potential boundary employees (technical support personnel) were interviewed for “non-technical” skills by Evan and “technical” skills by existing technical staff. Intended “technical” (developers) employees received a pep talk from Evan about the great future of the company, followed by a “technical” once-over by existing technical staff.

For “technical” *and* “non-technical” employees, the result of all of this careful screening was granularized work practice. Gina’s work, in particular, became more and more narrowed in scope, to the point where she occasionally reported not being sure what to do with herself. She had begun being responsible for all the company’s miscellaneous tasks, but the hiring of non-technical and boundary employees eliminated all of her previous tasks; Jeanette’s hire had eliminated the need for Gina to handle technical support, Carol’s hire had eliminated record-keeping and other administrative work, the

sales staff had eliminated general customer relations. Gina's work became as focused as the other co-founders' work had been all along, as her work moved from a catch-all position in which she was responsible for making sure nothing fell through the cracks to a narrow, traditional software developer position in which she spent her days coding and testing new products. And the new hires had not been of generalists but of experts, employees who were responsible for a narrow range of tasks within their section of the technical/non-technical split; the developers developed without being distracted by the politics of the product or the marketing strategy, the sales people sold what they were given without getting involved in product production.

The exception to this rule was in the work of the boundary workers in the middle. As in any small company, there were frequently occasions when everyone needed to "pitch in" to make sure that product got out the door and deadlines were met. More often than not, "pitching in" fell onto the boundary actors. Jeanette, the technical support specialist (and among the earliest of Evan's hires), was frequently asked to help construct hardware, to handle non-technical customer calls, to conduct product tests; her role, while certainly more limited than Gina's had been as a jack-of-all-trades, was nonetheless frequently broadened when necessary. By contrast, the developers and the "purely" non-technical people (Evan and the sales staff) almost never participated outside of their designated roles, which were deemed as "mission critical" in and of themselves.

The work most radically altered by the imposition/creation of the technical/non-technical split, however, was my own work as SecureCom's technical writer. When I was first asked by the co-founders to augment my research work with them by writing a manual for their product, that manual (in paper, PDF, and online help forms) was my sole

responsibility; occasionally I also produced ancillary materials like installation reference sheets and product announcement letters (e.g., an explanatory letter that went out with the product to explain it to the end user). As the company grew, the split grew more rigid, and others in the company sought to bring more and more outsourced tasks into the organization itself, my task list expanded radically. As the firm's designated "writer" and a permanent resident of the boundary between technical and non-technical, I became responsible for not only technical writing but for virtually every other form of writing apart from clearly non-technical texts like vision statements and business plans (which originally I was asked to help write as well) and technical texts like design schematics and computer code.

So in short, work was radically altered for everyone in the company by the technical/non-technical split, and in turn, the technical/non-technical split was formed by changing work practices. To be specific, "technical" work tended to be narrowed to reflect the importance placed on "focus" for technical workers, and technical workers tended to further organize that work along a spectrum of most-to-least technical. "Non-technical" work, in contrast, tended to broaden to pick up the slack left by the narrowed focus of technical workers. But as I discuss in the next section, the broader range of work and expertise expected of non-technical workers did not necessarily result in a higher value being placed on their work.

### **POWER WAS REDISTRIBUTED**

Early 1990s popular and scholarly writing on management and technology in the "information economy" frequently asserted that "knowledge workers," white-collar

workers whose jobs focus on transforming and moving information rather than (as in the old “industrial economy”) twisting bolts on assembly lines, are inherently empowered workers (Gates, Negroponte, Dertouzos, Dyson, Drucker, Senge). Because of the access these workers have to digital information technologies and to information sources like the Web, they are less bound by conventional strictures like organizational hierarchies or departmental boundaries and are freer to create powerful roles for themselves within their organizations. The “empowerment” that in the 1980s was a mere building block for Total Quality Management is now seen as an inherent part of the business process of the information age. Simply by giving our workforce more access to computers and computer expertise, we create an “empowered” workforce that is more efficient, more productive, and better consumers of the products of our industries; organizations fail to recognize this empowerment at their own expense.

In this belief system we can see traces of acknowledgement (albeit through belief in an evolutionary change in work practice) that power is not simply a top-down, punitive structure, that it is productive and can be created and utilized even by the traditionally “disempowered” when they learn to enlist other agents, tools, and institutions. In this system, knowledge workers can, through the power of their own minds and their technological tools, create powerful new roles for themselves. To borrow Pierre Bordieu’s terminology, in this system knowledge workers can unproblematically exchange their “cultural capital” (their knowledge, education, and skills) for symbolic (value placed on work), social (freedom of movement and task), and material (monetary reward) capital, simply cashing in their education in order to move up the organizational chart—or deconstruct the old hierarchies the chart represents in favor of structure more in



their favor. There is a growing line of scholarship, however, that attacks this line of argument by suggesting that not all knowledge workers work in the same high-payoff systems (Gee). For example, technical support personnel are highly skilled knowledge workers whose work is generally underpaid, under-respected, and under-empowered, in part because limiting perceptions of their cultural capital—technical support is frequently seen as pink-collar work that requires less “technical” knowledge than other jobs—leave workers with fewer opportunities for advancement in other types of capital (Greenbaum, Clark “Invisible”).

In what follows, therefore, I seek to complicate the knowledge worker=empowerment equation by suggesting that at SecureCom the technical/non-technical split, itself a creation and reflection of the movement of texts, acts to structure SecureCom text work in ways that benefit different workers in different, unequal ways:

- **Technical employees.** For “technical” employees, the elimination of “non-technical” textual duties generated new capital and created new authority over technical discourse generated by others in the company.
- **Non-technical employees.** Non-technical employees have equivalent or higher levels of authority and prestige than technical employees (often more, because they are designated managers), and their authority and prestige is also dependent on their authority over texts. The non-technical few authorize outgoing texts for their social qualities, including their political savvy and their abilities to inspire or persuade an audience.
- **Boundary workers.** Workers on or close to the boundary of the technical/non-technical split do most of the textual production, including the

technical writer (myself) who actually wavers across the boundary, moving from technical to non-technical and back as needed and expected. They have less capital than other employees, and their authority over their own texts is far more limited.

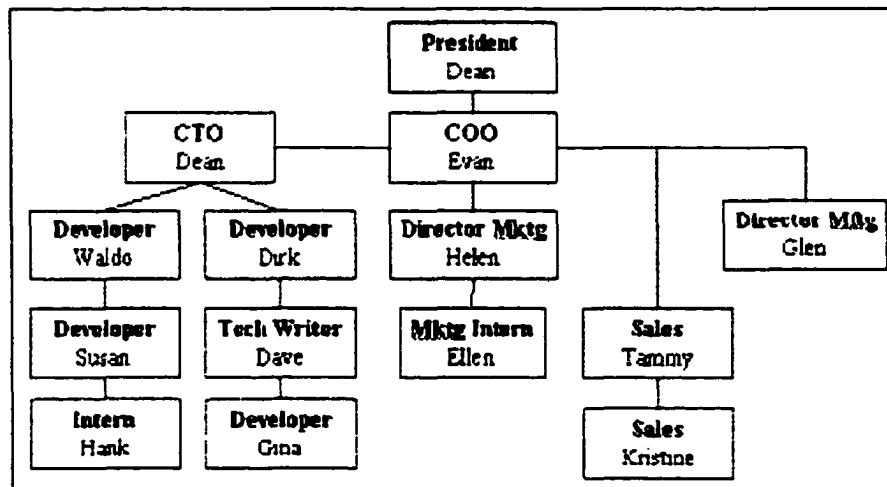
As I suggested in chapter 4, the technical/non-technical split is brought into SecureCom by individuals and reified by the organization itself. Bourdieu offers some useful terminology for talking about precisely this sort of interaction between individuals and a context. He suggests that individuals are inculcated from birth with a “habitus,” a “system of durable, transposable dispositions...principles which generate and organize practices and representations,” a set of deeply internalized precepts. The “habitus,” in short, represents the socially constructed individual. The “field,” in contrast, is the social context in which the individual operates; Bourdieu defines it as “a structured space of positions” in which individual positions and the interrelation of positions are structured by the distribution of capital (“Fields” 14), including not only material capital but also symbolic, social, and cultural capital. To Bourdieu, all action is shaped by the interaction of an individual’s habitus and the fields s/he inhabits. The interaction between habitus and field is complex; there’s a back-and-forth negotiation between the context and the individual. Agency is possible but is structured by what is allowed, because entering a field requires accepting the underlying suppositions of that field; at SecureCom that means, in part, working within the confines of the agency and power limits of the technical/non-technical split.

Bourdieu sees power, then, as a product not simply of hierarchical structures but of the intersection of a habitus and a field, an intersection that structures the types of

capital held by individuals and the rates of exchange allowed for their capital. For example, a software developer can exchange her education (cultural capital) and the value placed on her work (symbolic capital) for a high salary (monetary capital) and/or for freedom of movement and task selection (social capital). But a marketing intern, seen as possessing less cultural and symbolic capital, usually receives less monetary and social capital in exchange. I suggest here that the technical/non-technical split is a critical, and previously ignored, part of this equation, significantly re-shaping capital exchange possibilities at SecureCom by virtue of its position as an underlying precept of both worker habitus and SecureCom's field.

As I suggested in Chapter 4, at the beginnings of SecureCom no one in the organization had any clear, punitive power or any cultural, symbolic, material, or social advantages over any of the others; they were four friends, two married couples working together without an overt organizational structure and with clearly defined and distinct duties. The four co-founders treated each other equitably, with the possible exception of Gina's required daily presence in the office space. As the organization changed to a more conventional structure, however, power was assigned and re-assigned throughout SecureCom in both overt and less overt ways. The overt was the established organizational hierarchy. As the organization changed and grew, a clear organizational structure was established, first informally and later formally. The organizational chart served as a technology that operated to delineate, structure, and dole out social capital, describing and defining who reported to whom and the amount of freedom of movement and task selection afforded to each worker in the company (see Figure 5-1).

But the organizational chart's representation of the distribution of social capital gives only a partial view of the way that power operates within the organization, failing to account for the distribution of material and symbolic capital and for ambiguous distribution of social capital. While certainly one can make some judgments about these



**Figure 5-1. Abbreviated Org Chart**

other forms of capital from the chart (it is not hard to guess, for example, that the Chief Operating Officer has significantly more cultural, material, symbolic, and social capital within the organization than the technical writing or marketing interns, the lowest paid, least valued, and least free employees within the organization), it would be a mistake to assume, for example, that the Director of Marketing possesses more material and symbolic capital in the organization than I did as the Senior Technical Writer simply by virtue of her higher placement in the organizational chart; in fact, my salary was equivalent and my work was valued equivalently by others in the organization. And it would be a mistake, as well, to assume that the development intern's social, symbolic,

and material capital matched those of the marketing intern, despite her completed degree and social skills; he was granted significantly more of each.

There is tension, then, between power as represented by the organizational chart and as practiced within the organization. I suggest that the technical/non-technical split distributes social, material, and symbolic capital no less than the organizational chart, that in fact in many ways it enacts and reflects capital distribution more thoroughly, both structuring and reflecting the way capital is dispensed and gathered at SecureCom. Specifically, workers at opposite ends of the split—the most “technical” and most “non-technical” workers in the organization—do different kinds of textual work and thereby possess different capital, frequently more capital, than workers who cross or straddle the split. These end workers did less of the actual writing work of the organization, but they produced the texts more likely to be seen as “mission critical” to the organization, including vision statements and business plans on one end and computer code and technical specifications on the other.

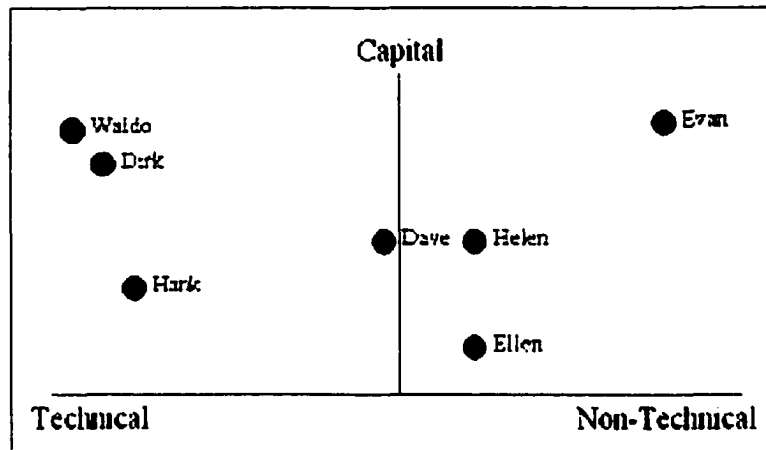
For example, Evan, the Chief Operating Officer of the organization and in the eyes of the participants a “non-technical” worker, had significant authority over texts, as well as significant power in all forms of capital. Evan wrote documents that were “mission critical,” that in very real ways constructed the reality of the company for those inside and outside the organization. He wrote company descriptions, including business plans that detailed the current state and future goals of the company for potential investors and corporate overviews that described and created company reality for Web site visitors and seminar attendees as well as company employees. He also wrote documents that described and created the company’s relationships with the outside world

in more concrete ways, including stock option statements for employees, maintenance agreements and process documents that established and limited sales staff relationships with their customers.

Evan had substantial authority over writing these texts. With few exceptions, he had total control over his shaping of the organization with these documents; the original co-founders of the organization of course had veto power but rarely read or investigated these documents let alone enacted that power. These documents, after all, were the reason they hired Evan; company investors, and the co-founders sense of the corporate genre, dictated that these types of documents needed to exist. Evan's job was to construct corporate reality through these documents and they let him do it with little interference. For this work, Evan was significantly rewarded. His cultural capital included an engineering degree, an MBA, and experience as a sales channel manager for an intranet software company, and that cultural capital, together with his position as a "non-technical" worker. Evan was among the highest paid workers in the organization and also had significant social and symbolic capital. As one might assume from the organizational chart, he had significant freedom of movement and task selection; while he certainly had significant responsibility for the organization and had duties (including lunching and meeting with potential clients and partners) that precluded a standard 8-to-5 workday, he nonetheless had significant freedom of movement and task selection. Evan and only Evan decided on his tasks and schedule, as shown in Figure 5-2, which displays the summation of capital rewarded to key employees in the organization as a factor of their position along the technical/non-technical split; for example, Evan's high level of

symbolic, social, and material capital rewards together with his placement on the far social end of the spectrum place him in the upper-right hand corner.

The technical workers in the firm are similarly highly rewarded in terms of cumulative capital, so they appear in the higher regions of the left end of Figure 5-2.



**Figure 5-2. Capital as a function of the split.**

Technical workers were significantly rewarded due to and by their control over texts, especially the code developers. While initially SecureCom's developers were jointly responsible for all of the activities in the organization, with the formation of the technical/non-technical split they became increasingly focused on "purely technical" tasks and their writing responsibilities were significantly limited to tasks that, like Evans, were considered "mission critical," tasks on which they needed to focus. In addition to e-mail messages to each other and to, for example, developer help lines and chat rooms, the developers wrote two kinds of texts: computer code and technical notes. The notes included feature lists, schematics, flowcharts, and other reference and design documents that the technical people wrote together to describe the product(s) they were jointly

creating. These texts, particularly the product feature lists, were frequently influenced by the desires and expectations of the non-technical staff, but the developers had the last word on features that would be included as they were imagined to be the only ones who could make rigorous assessments of the features' technical viability. The computer code was the guts of the product itself, and in its creation the developers received little to no feedback from outside of each other.

The developers created all of these texts collaboratively. Technical notes were used almost exclusively internally by the developers and therefore were subject to little review from the outside; the developers themselves verified during product testing that the programming reality they'd created matched what they'd described in their original documents. Computer code, on the other hand, was subject to some external review, by the developers themselves, by other technical people, and by technical/non-technical people including myself as the technical writer. Computer code was compiled and tested by the developers and by the technical support staff to ensure that it didn't crash and did match the feature set originally composed by the developers. I tested the code by trying it out in the process of creating manuals designed to reflect and describe the digital reality the developers had created; occasionally I would find a bug that slipped by or correct the spelling of a word on a drop-down menu but that was the allowed extent of my participation in the coding process.

The developers, then, had significant authority over the writing of their texts. The texts were to be accurate, re-creatable, and workable, but their editorial responsibilities were limited to making an effort to render their code readable by other developers; the social functions of the collaboration, after all, were carried out by versioning software



that ensured no code set would be superimposed on another. And they were significantly rewarded for their text work. All were in a relatively low place on SecureCom's organizational chart, and most had only a bachelor's degree in computer science (some had not even that). But all were nonetheless significantly rewarded in material, social, and symbolic capital, with the amounts of capital determined by a spectrum of how close they were to the guts of the machines themselves; those viewed as the furthest from human contact received the most capital. For example, machine code writers received more capital than graphical user interface (GUI) designers, whose work was intensely tied to the idiosyncrasies of end users instead of to the more rigid constraints of the machines themselves.

Waldo, for instance, was a machine-code developer who wrote the low-level code that determined how the product's hardware networked with its administrative machine. His work, then, was considered to be closer to the machine than, say, Dean's; Dean developed the GUI that determined how users interacted with the product's functions. As a result, Waldo was given a higher salary and more social and symbolic capital than Dean, who in turn still received more material, social, and symbolic capital than most others in the organization. Waldo and Dean were more limited in their freedom of movement and task selection than Evan, partly because of the necessity of their being tied to their machines all day and partly because they were limited by the requirement that they create the agreed-upon product features, but they nonetheless were allowed significant creativity in planning their schedules and deciding their tasks. Waldo, for example, came and went as he pleased—he generally came in around 3, worked a few hours, and left around 9 or 10, rarely working a full day. He frequently missed meetings

and occasionally even misinterpreted or miscoded because he wasn't in on crucial decision-making processes. Still, when SecureCom became concerned that he might leave the company, he was offered a \$10,000 raise with bonuses for showing up at work for meetings and during core hours of the day.

All this was due to the enormous symbolic capital afforded Waldo by SecureCom perceptions of the value of his work. And this capital was not limited to developers. Hank, the developer's intern, was not highly financially rewarded for his work, but he received significant symbolic and social payoff for his perceived expertise. Hank was originally hired to assist in constructing the hardware components of the product, but he quickly tired of that and re-fashioned himself as the organization's system administrator, making himself responsible for network management, password administration, and machine upkeep. He made the switch by changing his e-mail signature file to say "Hank, System Administrator" and by starting to do the work; no one questioned his movement. Later, when he decided he'd like to be a developer, he added "/Developer" to his sig file. Again, no one objected. In essence, his cultural and symbolic capital as a technical person paid off in significant social capital, despite his low, low position on the organizational chart. And Hank was given a control over defining texts (in this case, using his e-mail signature to define the reality of his position) that others higher on the organizational tree but less "technical" could only dream of.

The same power, after all, was not available to those balanced or at least ambiguous in relation to the technical/non-technical boundary. Ellen the marketing intern, unlike Hank, was neither clearly technical nor non-technical, and although she had a degree in her field of specialization and was working on a degree in MIS, she was

nonetheless lower paid and had significantly less freedom of movement, and her supervisor had to argue fiercely to get her pay raised to the same level as Hank's, despite her equivalent position to him on the organizational chart. Supply and demand is a possible explanation, but the nearby university of science and technology actually made hiring marketing specialists more difficult than hiring computer specialists, particularly marketing specialists with computer expertise. Gender is also a possible answer, although two of the principals, and nearly half of those highly rewarded with capital within the organization, are women. Besides, Ellen's capital limitations were not true only of boundary-line interns; in general, boundary workers were more limited in their symbolic, material, and social capital, regardless of their cultural capital and their positions on the organizational chart.

Helen, the Director of Marketing, for example, brought significant cultural capital to the organization as someone with an M.B.A. (the same degree Evan had) and previous experience as a marketing director for a software company. But while her job was certainly significantly "technical," she was neither technical enough nor social enough to be viewed as writing the kinds of mission-critical texts that would give her the kinds of freedom granted workers on the far ends of the spectrum. Her work was closely supervised by Evan; nothing was permitted to be sent out of the organization without his checking it for its matching up to his vision for the organization, and she often found herself fighting with him for control over the kinds of marketing tasks she wished to conduct. Her social capital, then, was limited, and her symbolic capital was constantly under question by Evan and the developers, all of whom believed that marketing was a nicety rather than a necessity; Hank offered that marketing was completely unnecessary

as the developers could easily put up a Web site by themselves. Helen's material capital, finally, was also limited; despite her high position on the org chart and her long hours, her pay was significant less than even the lowest-paid developer.

My capital acquisition as a technical writer was similarly limited by my ambiguous position as a boundary worker despite my cultural capital as an ABD Ph.D. student, my long-term experience and seniority with the company, and my technical expertise and understanding of the product. My work, unlike Helen's, was viewed by the developers as useful—even critical—to the selling of the product; the four co-founders had long outsourced technical writing as they saw it as both essential and a skill set they did not possess, and for the most part I was able to avoid the typical technical writer problems with subject matter experts (SMEs) because they were helpful in providing me with needed information. Evan, on the other hand, saw technical writing as less than essential; he frequently commented that he saw little use in putting so many resources into providing services to people who had “already paid for the product.”

My job was to write all of the texts not written by those on the other ends of the spectrum, including most of the texts that would come out of Helen's department, who acted as a defacto supervisor for the “non-technical” end of my work; the developers jointly acted as my “technical” supervisor until the later hiring of a development manager. Thus, I straddled the boundary between the technical and non-technical worlds, and yet received the capital benefits of neither. While my work was rewarded with greater material capital than Helen's—despite my lower position in the organizational chart—I was still lower paid than the developers and was able to obtain only precious little social and symbolic capital. My work was entirely made up of texts not viewed to

be mission critical, was most frequently assigned rather than selected, and was subject to intense observation and scrutiny from both ends of the spectrum.

For example, one of Evan's first moves as manager was to implement an intranet system that allowed for source control of word-processed documents instead of computer code. The system allowed writers to access their files from anywhere with a Web browser, to track multiple revisions, and to quickly and easily access each other's work. It also allowed for simple and easy supervision of my work; Evan would daily check the "what is new" page within the site to see what I had accomplished and "subscribed" to a number of my documents so that he would receive e-mail notifications when I made changes. This system enabled him to regularly and effectively micro-manage every aspect of my work, from font selection to layout to style to volume (he frequently complained to Helen that my rate of output should be higher). All was done with the goal of ensuring that my output would match his vision for the company.

My work was equally subject to the suggestions of those on the "technical" end, who went over each document rigorously to ensure it was "technically" correct (reviews that were often accompanied by embarrassed acknowledgement/self deprecation about their limited writing abilities) and was thus in keeping with their own mission-critical texts. In essence, although I was the one designated writer in the organization, I received less control over writing work than the non-designated writers at the ends of the spectrum. The capital limitations I faced as a technical writer at SecureCom are endemic to the technical writing profession. What my contribution of the technical/non-technical split adds is a broader understanding of the ways in which a technical writer's position as a boundary actor, as neither technical nor non-technical, contribute substantially to her

marginalization within firms, leaving tech writers to constantly have to find new ways to convince managers and engineers that their work is a valuable contribution to the company. Technical communication journals are filled with suggestions of ways to show that technical writing work “ripples through” into the technical and the non-technical, or of ways to actually *become* more technical or more non-technical (e.g., through moving technical writers earlier into the design process, despite writers’ questionable credentials and training as interface or usability designers).

In summary, at SecureCom capital was distributed not equally among all knowledge workers, as would seem to be suggested by much popular management literature, but unequally, to each according to his or her position on the technical/non-technical spectrum, with those on the ends receiving the most capital and those near the middle receiving the least. The irony is that the workers at the far ends of the spectrum are successfully enlisting texts, both by gaining capital through creating their own and in controlling the texts of the boundary actors, to create power for themselves, while professional communicators are unsuccessful at doing the same. Those at the ends of the spectrum enlist texts to give them power even as they become less and less centrally involved in the creation of the texts themselves. As we will see in the next section, their self-isolation from those texts also makes it possible for them to politically distance themselves from their controversial product.

### **POLITICAL DISTANCE WAS GRANTED TO SOME, OTHERS WERE MORE ENMESHED**

The effort of scientists to eliminate the human politics of the social realm from their work is widely agreed-upon and acknowledged. Scientists have typically argued

that their work, done correctly, discovers truth that transcends the social. The social is a separate realm, a hurdle to be overcome in order to get funding and a mistake introduced into work with which they disagree or which fails to meet their standards (e.g., the well reported Pons and Fleischman cold fusion experiments, which, when found to be unrepeatable, were thought by many to be a glorified marketing ploy). Rhetoricians of science have been fascinated with these claims to objectivity, enough so that a significant line of rhetoric of science scholarship attempts to re-connect scientific work to rhetorical politics through examination of its rhetorical artifacts. Journal articles, grant proposals, and scientific reports have all undergone close readings to point out that scientists' work is deeply political and deeply textual, that scientific truth is relative and a product of rhetorical argument (cf. Myers *Writing*, Bazerman *Shaping*, McCloskey). In other words, rhetoricians of science re-articulate links between the social realm and scientific work that are more explicit and different in character than scientists have typically acknowledged; they seek to put the social realm back into science by arguing that it never left, that scientific practice is a textual enterprise that is by necessity inextricable from messy human politics.

The debate is slightly more complicated when we turn our focus to technologists. As I suggested in chapter 3, the rhetoric of science and the rhetoric of technology have frequently been conflated; technologists, it is been assumed, have been re-politicized along with scientists through work in the rhetoric of science. More recent work, however, has suggested that technological contexts have different politics than scientific contexts and are worth investigating in their own right. In "The Production of Technology and the Production of Human Meaning," Charles Bazerman problematizes

the conflation of technology and science by pointing to differences in the ways they are practiced in some of their most common forums (corporate workplaces and academic institutions, respectively); scientists, he suggests, have the luxury and, arguably, necessity (due to the now-rigid expectations of others in the scientific community) of considering their work clearly split from other, overtly cultural spheres. The work of workplace technologists, however, is by its nature dependent upon constant and conscious interaction with other cultural enterprises such as business, management, computer science, engineering, and technical writing (Bazerman 383), and therefore we cannot assume that workplace technologists are, or seek to be, a-social in their work. Certainly at SecureCom the social realm enters in the day-to-day work of most of the technologists. They're not seeking to "discover" an a-rhetorical, eternal "truth"; they're using human-created machines to create products for other humans, and all but the lowest level machine code programmer are dealing with people's needs every day. Dirk the GUI developer spends his days trying to figure out how to make his software most accessible to his users. Hank the system administrator spends his fixing machines and handling the people who broke them.

At the same time, in practical terms, SecureCom's technical/non-technical split created a different, more socially isolated kind of work for its technical people than existed in the early days of the company; in some ways, SecureCom's technologists seem to have been seeking the a-rhetorical, apolitical work embraced by the scientific community. As I discussed in chapter 3, the day-to-day work of the workers in the company changed significantly as the technical/non-technical split was formulated and rigidified within the organization. In this section, I suggest that one effect of the split was



to isolate SecureCom's overtly political work, creating a labor division in which non-technical and boundary workers were responsible for constructing and enacting the controversial discourse of ProBlocker while technical employees created only human-focused but "apolitical" computer code, having the luxury of choosing when and where they wished to involve themselves in the political implications of their work.

### **Early Politics**

ProBlocker, after all, is a highly controversial technology designed to restrict access to Internet content, an activity that some (including the official company literature) regard as "protecting" but some regard as unconstitutional "censoring," particularly when used to block access within public schools and libraries used not only by children but by adults. In the early days of the company the four technical co-founders found themselves dealing with its implications. Gina and Susan both expressed ambivalence if not outright dismay at the political implications of their product; for example, in an interview Susan indicated her discomfort in pretty clear terms:

Well, right now the politics of our existing product and its application make me just a little uncomfortable. I happen to agree that libraries shouldn't be places where they have filters. Yeah, you could say that libraries filter because they don't buy every magazine subscription....they couldn't afford to buy every magazine subscription, either....Plus, what is my idea of smut and what is your idea smut are different, and now we buy this list that you can't even see. I'd like to see us get away from filtering entirely and work more on security, where we

say we are a tool to help you manage...to keep inappropriate activity from happening on your network.

Dean and Glen, while they believed in the product to some extent, didn't particularly want to argue for it; they had created the product, after all, only because it was the best, most obvious, and quickest means to create a commercial product from the blocking technology Dean had developed through his research as a computer engineer. They went into business to make money, not to fight ideological battles, yet they quickly found themselves in the position of having to defend and argue for their product in order to sell it. Dean as CEO was particularly vulnerable, finding himself in a staged debate with an ACLU representative who strongly derided the product as an infringement on constitutional rights.

Events like this and negative, argumentative encounters with potential customers created a social sense of reality in the co-founders that forced them to transcend their "throw it over the wall" mentality of product placement and marketing, the notion that a technically sound product will in effect market itself. Despite the early separation of technical work from non-technical work that led them to eliminate overtly sales- and marketing-oriented materials from their daily tasks (see chapter 4), in the social documents they did retain for various reasons, they displayed a strong understanding of the social positioning of their product and of the need to create for their product a textual reality that countered that their opponents were attempting to create. For example, consider their Web site, which, as I suggested in chapter 4, they maintained despite its overtly social nature because they didn't believe their outsourcing partners had the technical competence to maintain the site. Much of the site did indeed focus on the

technical details of the product; on the “Pricing” page, for instance, they included a large table that compared the ProBlocker system to other existing systems, running through ProBlocker’s positives and pointing out the failings of the others. For example, “Tamper Proof” lists a “Yes” for ProBlocker, but a “No” for Desktop Based Filters, Local Proxy Servers, and Remote Proxy Servers. Similarly, on the “Frequently Asked Questions” page, they describe in detail the technological advantages of their system, for example in this FAQ in which they highlight ProBlocker’s flexibility:

Can the ScreenedOut list be overridden for a period of time for a set of machines?

Yes, there is an override list which can override an entry in the ScreenedOut list for a local machine. A good example of this would be if a group of students needed to get access to a questionable site for a legitimate reason. Instead of opening access up for all machines you could just add the entry to the override list.

The rhetorical moves in this FAQ are fairly transparent; the principals phrase the question using their own technical terminology, virtually guaranteeing that the question is not phrased as a potential customer might ask it. But the sales-oriented purpose of this question is unquestionably social, challenging the common notion that technical types have only a “throw it over the wall” mentality, that they think that simply describing a product’s technical features is sufficient to generate sales. They also include a section on “Censorship Issues,” in which they answer the very point blank, as-it-would-be-asked question “Isn’t this censorship?:

This is one of the most frequently asked questions. Some people feel that any form of filtering for the Internet is censorship. They compare the Internet to a

library. We think a better comparison is that the Internet is like a community. Within a community we have areas that minors are not allowed. The community establishes guidelines and methods to enforce these guidelines. Think of ProBlocker as a mechanism to help you enforce the guidelines of your community. For a more detailed discussion of Internet censorship contact us for a white paper on the subject. Another good point to make is to look at the educational objectives of the schools and then ask yourself if this filtered material meets any of those educational objectives. You can also use ProBlocker to monitor connections on the Internet. ProBlocker will provide you with a list of sites that have been visited by each computer, even if the sites are not blocked. You could use ProBlocker as a monitor to see if your students are in compliance with your policy, without filtering any sites.

This paragraph has a slightly undercooked, "...and another thing!" feel to it that when combined with the clearly thoughtful use of metaphors makes the paragraph seem very earnest. This earnestness makes it difficult to reconcile these stated views with the apolitical (if anything, anti-censorship) stance usually verbalized by the principals, until we consider the slightly tone-deaf take on "monitoring instead of blocking" sentence at the end. The idea that ProBlocker creates lists of all sites visited, whether they're on the list or not, isn't likely to comfort the fears of someone concerned that SecureCom wants a Big Brother role. But the goal of the Web site isn't rationalizing or even arguing for their stance on censorship: As the principals often reiterated, the goal is sales, and their goal here is less assuaging fears than providing ammo for system administrators going to the school board for money to buy ProBlocker.

The technical co-founders also handled the non-technical social realm in even more overt fashion. Their hire of Stephen as their “vision guy” early in the history of the company was a crucial enlistment, allying their technical work in very overt ways with the political realm with which it was most obviously connected. Stephen is a die-hard Republican and the owner of a bible publishing company in a nearby town, and he saw his financial and leadership participation in SecureCom as part of his mission from his church to help out the community; he saw his participation as both fostering local business and protecting children from objectionable, pornographic materials. And so not surprisingly he provided not only business leadership to the company but also political connections that helped SecureCom align its politics with its target market. When SecureCom first moved into its new office (see chapter 4), it was fortunate enough to do so at the time of a major Republican caucus for the 2000 election, and Stephen was able, through his connections with the party, to bring Elizabeth Dole to SecureCom to do the official ribbon-cutting.

Of the co-founders, the two women are decided Democrats (Susan, when she heard that Elizabeth Dole was coming to SecureCom, commented that “I’d have really put up a fuss if he’d had Gary Bauer or Alan Keyes or any of those wackos come”) and the men are moderate Republicans, and none felt they would vote for Elizabeth Dole. Susan also commented that she didn’t feel aligning with any politician was a smart idea: “I wouldn’t have done it...it was a waste of money, and while I can understand why [Stephen] did it, I am not sure as a company that we should be aligning ourselves with any politician.” Nonetheless they (and I, much to my own enormous discomfort) wore Elizabeth Dole stickers, set up tables, brought in appetizers, rented artwork, and stood in

the cold and rain waiting for her bus. Stephen opened with a speech that carefully aligned SecureCom's politics with those of Dole:

Elizabeth Dole sees the enormous constructive power of the Internet, but she also is acutely aware of the potentially destructive and inappropriate applications of the Internet. With courage, conviction, and clarity, she has framed a critical issue facing our nation today: who, how, when, and where to limit, control, and or restrict the access of our schools and libraries to the Internet.

Dole gave a stirring speech in which she thanked Stephen for his hospitality and for taking her to church, and she then endorsed SecureCom by name (which no one had expected her to do) and created a clear alignment between her political policies and SecureCom's *raison d'être*.

I am just delighted to join you in the ribbon-cutting ceremony for SecureCom's new facility. The Internet management server that you will build here is the first of its kind. This server will allow administrators to control access to workstations from a central workstation. For example, teachers can use this device to help students gain access to educational material while preventing them from entering chat rooms or undesirable Web sites. I think that's terribly important, don't you? [applause]. We must do all we can to help parents and teachers protect children from pornography on the Web.... What I believe in, and what you do for a living, go hand in hand.

Dean's speech, in contrast, drew different sorts of connections, thanking the investors, the research park, the chamber of commerce and others who had had input in making the product and the company's growth possible. He described the product's operation in

detail, emphasizing its non-filtering functionality, its market presence and positioning, but, significantly, avoided discussion of Dole's presence apart from thanking her for being there. The other co-founders shifted nervously from one foot to the other waiting for the speeches to be over. SecureCom had effectively enlisted the Republican political machine on its behalf and, despite the potential company gains, the co-founders were not entirely sure they were happy with the development.

### **Later Politics**

The co-founders were in general less than comfortable handling the rhetorical politics of their own product, and it is perhaps not surprising that the trajectory of the company made each of them, as well as subsequently hired technical workers, less and less responsible for textual work that required them to be elbow deep in those rhetorics on a day-to-day basis. The means through which this political isolation was accomplished was the technical/non-technical split, the formation of which was caused by and created the movement of thereafter "technical" employees to "technical" documents that rarely if ever concerned themselves overtly with the politics of the product they supported. Technical workers were shielded from politics when they desired to be, and "social" workers and boundary actors who were hired explicitly to handle sticky rhetorical politics of ProBlocker took on that role.

Working in their favor was the isolating and segmented nature of technical work, which, as Ellen Ullman suggests, asks if not requires technologists to focus not on the big picture of "how to best block Internet sites from children" but "how to send a packet to the server" or "how to make this drop down menu operate correctly." This is particularly

true of computer programming of large projects, a task that is by necessity highly segmented and collaborative, requiring no one programmer to handle an entire project; each programmer works only on a relatively small piece of code that provides only a relatively small part of the overall functionality of an application. For example, because of his position close to the machine as the machine-code developer, Waldo was responsible only for the communication that took place between ProBlocker's Windows administrative interface and the ProBlocker hardware, while others were responsible for the functional programming of the interface itself and of the base function of the ProBlocker hardware.

This segmenting, I suggest, is neither an accident nor an inherent quality of technical work without which it cannot function; much programming is in fact accomplished by individuals, and this sort of Fordist breakdown of programming tasks, while it is a standard operating procedure within the development industry, is hardly the only way programming tasks can be accomplished (cf. Lay "Computer"). In fact, I suggest this segmenting is both a product of and contributor to the technical/non-technical split, and the resulting elimination of many kinds of texts from the day-to-day work of technologists. Virtually all of the work at SecureCom is textual work, and all SecureCom workers spent their days working on various kinds of texts, whether computer code, technical specifications, sales messages, vision statements, brochures, or technical manuals. The segmented nature of the work at SecureCom, as I suggested in chapter 4, is a result of the effort—stemming from both an understanding of corporate "genre" and from a desire to avoid creating certain kinds of text—of company co-founders and later-hired technical workers to eliminate from their workloads all texts



other than computer code, technical specifications, bug reports, and other documents that never asked them to focus on the impacts of their work, and as a result they were able to focus entirely on bug fixes and other technical problems unless they wanted to consider other issues.

Sometimes, they did. Gina, for one, is fond of arguments and would frequently come out of her cubicle to participate in discussions of how we should position the product, how we should market the product, and even how we might characterize the social implications of the product. She had the freedom to come out and participate in the discussions, but she also possessed the freedom to leave the argument at any time and return to her work; more important, she possessed freedom from having to handle direct interactions with customers and potential customers who might question or even object to the political orientation of ProBlocker. Susan, on the other hand, rarely chose to participate in such discussions, and she had the freedom and luxury to completely ignore the discussions in favor of focusing on her coding; she told me in an early interview that she dreamed of the kind of work I'd had in a different company, in which I was isolated in a cubicle with little human contact during the day, and she managed to create and took advantage of the opportunity to do so in her own company.

Also contributing to the ability of the technologists to focus on the "technical" aspects of their work was the existence of non-technical and boundary workers. These workers focused almost entirely on the positioning and politics of the product, constructing documents and conducting phone calls that hinged both on their ability to match Evan's vision for the positioning of the product and their ability to persuade their intended audience that the product's purpose was a good one. These workers included

COO Evan; Helen the Marketing Director; Kirsten, a Sales Executive; and myself.

Evan's work focused on articulating his vision for ProBlocker and future products and selling both outside investors and internal workers on that vision, so while, as I indicated in the last section, his work received significant capital reward, Evan was highly involved in the overt politics of the product.

But at least he received significant reward; those on the "front lines" received far less for far more political interactions. Helen spent significant portions of her days engaged in online discussions of the product with others and in, in ever more sophisticated ways, learning to create persuasive arguments and situate ProBlocker so as to reach the proper audiences and differentiate the product from others on the market. In similar ways, my work required me to immerse myself in censorship politics; I had to learn both to create the right kinds of arguments to convince skittish potential customers of the utility and ideological correctness of the product and to hold my nose and do my work while seriously questioning my complicity in marketing and making more usable a product about which I felt significant ambivalence. Kirsten, similarly, spent her days immersed in politics, making cold calls to potentially hostile audiences that might well tell her that they "didn't believe in censorship," forcing her to pull out counterarguments, an experience all of non-technical and boundary workers had working educational trade shows.

In sum, the technical/non-technical split made it possible for some workers in the organization to distance themselves from the politics of their product, politics that made many of them squeamish but that were ultimately seen as irrelevant and distracting from the technical work that was their primary responsibility. Boundary and full non-technical

workers, by comparison, were immersed in the politics of the product, politics which were seen as their primary job responsibility.

## CONCLUSION

A few caveats. The three impacts of the technical/non-technical split I've described and discussed in this chapter are not, of course, the full picture, nor are they purely "impacts." They are circular and reciprocal: for example, the redistribution of power within the organization, while it was a product of the burgeoning technical/non-technical split, also caused the split; the benefits that accrued to technical and non-technical people from focusing on particular tasks to the exclusion of others providing little incentive to reevaluate their decisions or incorporate different kinds of work practices into their routines. They are not strictly the product of the desires of the co-founders: for example, the redistribution of the workload among technical and non-technical workers is as much a reflection of "the way things are done" in corporations, as I was constantly reminded by my participants, as they were of any pure desire; the corporate genre had a powerful impact on the way SecureCom was structured, which helpfully points to possibilities for generalizing the results of my work.

It is also important to note that the impacts of the technical/non-technical split are not pure causations. For example, I wouldn't presume to claim that it was solely because of the split that technical people accrued more capital than others; there are also, as conference attendees have reminded me, market forces at work (although experienced programmers were easier to find in this college town than experienced technical writers), and of course SecureCom is a technical company. Capital distribution may well have

been different in an insurance company or in an English department. Finally, it is worth noting that the impacts I cite here cause and affect each other; for example, the revised power distribution allowed non-writers to specialize and de-politicize their work practice while leaving political rhetoric to the writers.

Taking all this into account, the technical/non-technical split did significant work at SecureCom. Put these impacts together and we've developed a picture of technological practice that is, despite all my work to separate scientific and technological contexts, not altogether different from scientific work. The technologists at SecureCom have significant cultural, symbolic, social, and material capital, a narrow and focused work practice that affords them specialties far more narrow than their disciplinary boundaries would demand. Additionally, they have been arguably even more successful than scientists at creating significant space between themselves and the uncomfortable politics of their work by employing the genre of the corporation in their defense. Many scientists do succeed in avoiding the political entanglements of their work via enlisting still-powerful objectivity claims and via focusing on non-controversial research. But many also find themselves embroiled, arguing one-on-one with activists about the human implications of their truth quests; in the individualist culture of scientists, they themselves are ultimately responsible. This is a position Dean knew all too well via his academic position and his early ACLU debate.

The technologists at SecureCom, in contrast, had *jobs*. They came to work, did their work, and went home, all without being forced to confront the political ramifications of their work. The technical/non-technical split, created by and because of the movement of text production responsibility, created a space for technologists to write

texts without politics in ways that scientists could only dream of. The corporate structure established credibility, formed partnerships, handled marketing and sales, and the technologists needed only to focus on their own carefully delineated truth quests within the scope of the technologies with which they worked. Make the products work; don't worry about what they do.

## CHAPTER 6: IMPLICATIONS FOR SCHOLARS AND INSTRUCTORS

The analyses I presented in the previous two chapters are based on ethnographic work, work that by its nature is limited to describing a particular context, providing a snapshot of my interpretations of occurrences in a particular place at a particular time. As such, the generalizations I can claim to draw from my work are limited; it would be at best disingenuous for me to claim that because of my findings and descriptions of events at SecureCom, we could generalize to other companies in general, or even to other Internet startup companies. I know from presenting this material that others *do* find similarities and parallels between SecureCom's construction and implementation of the technical/non-technical split and similar situations in other companies they know, but there is certainly no perfect transfer, no bulleted list of implications or "tips and tricks" that they can apply to their own workplace situations. My work at SecureCom, like any other context explored in depth, is simply too complex, too localized, too case-specific to be applied in any blanket fashion.

Nonetheless, I do think that my work at SecureCom points to some important, if broad, implications for other scholars and for instructors of technical communication. In this chapter, I explore those implications with the goals of expanding research in the rhetoric of technology and problematizing traditional technical communication pedagogy, which in many classrooms has relied too long and too heavily on "skills" rather than on helping students understand the contexts in which their work will be embedded when they enter workplaces. Specifically, my work points to the utility and importance of the following:

- **Expanding Our Understanding of the Rhetoric of Technology.** I suggested in my literature review in chapter 2 that the rhetoric of technology has relied on two strands of work: “technology is not rhetorical” and “technology is rhetorically constructed and situated.” I suggest that my work in this dissertation combines these two strands in striving to develop a third strand, “technology and society are inseparable *and* distinct.” My work both collapses the technical/non-technical split and points out the utility of keeping it as an investigative tool.
- **Exploring the Limitations Placed upon Technical Writers as Boundary Objects.** I further suggest that my work problematizes the position of technical writers in organizations in ways that are useful for technical communicators and for technical communication students. Specifically, my work suggests necessary new directions for envisioning technical communication as a boundary practice; these new directions may help establish TC as a discipline and a profession and help individual technical communicators better argue for their value within organizations.

In what follows, I elaborate each of these arguments in more detail, drawing on examples from the field and from my research to illustrate and solidify my points.

*Intervening in the dominant image by deleting the boundary between technology and society...risks construing the human, the machine, or both, in terms so narrow that replacing the dominant image remains a remote possibility. [We should] shift the problem of analysis and participation from a priori efforts at drawing or erasing the boundary between humans and machines to figuring out how such boundaries get drawn and lived in everyday experiences (Downey).*

### **EXPANDING OUR UNDERSTANDING OF THE RHETORIC OF TECHNOLOGY**

In chapter 2, I argued that most work in the rhetoric of technology has focused on two sides of a rhetorical/arhetorical binary. The first side, “technology is not rhetorical,” draws its perceptions of technology right from the technologists who produce them, and thus draws one of two conclusions:

1. Technologies are entirely neutral, with their impacts determined entirely by human use. In pop culture terms, this is a line of argument characterized by Gary Downey as “guns don’t kill people, people kill people.”
2. Technologies have inherent properties. Depending on the critic’s perspective, they are either inherently liberatory, and through their implementation users will be empowered, individualized, and liberated, or they are inherently bad and their impacts will be profound and negative. Frequently this argument takes the form of “computers will empower students to self-directed research and study” (Selfe) or “computers are destroying culture as we know it and denying students *real* educations” (Postman).

The distinctions between these two arguments are important for people arguing for or against gun control; less sophisticated gun control advocates frequently use an “inherent



properties” argument to suggest that guns, because of their inherent properties, are inherently more dangerous than knives and therefore should be regulated. But in examining the arguments we can see that they are remarkably similar. Both arguments operate as though technologies operate in an a-rhetorical realm, and both also collapse the boundaries of technologies and the social realm, albeit in slightly different ways. Version 1 eliminates technology from the picture in favor of looking only at the social realm, while version 2 collapses technologies into the social realm by granting them inherent social properties that, when implemented, they will have on any given context.

The second side of the binary, “technology is rhetorically constructed and situated,” suggests that human use is only part of the picture because human use is structured by the ways that technologies are designed, made, marketed, and contextually situated. For this side of the binary I again identified two strands. First, “technology is rhetorical,” a line of argument that focuses on the technologies themselves, seeking to show the rhetorical nature of their construction; for example, Selfe and Selfe analyzed the Macintosh user interface to demonstrate the business-centered ideologies that lay beneath its surface. The second strand was “technology is rhetorically situated,” a line of argument that suggests that technology is rhetorical by demonstrating its situation in a larger rhetorical context; for example, Mary Lay argues that software development is immersed in a male environment that is difficult for women to enter and work within (Lay). In effect, this argument collapses the technical and the non-technical into context, thus coming closest to what most contemporary rhetoricians believe about technology.

In some ways, these two sides of the rhetorical/arhetorical binary—technology is not rhetorical vs. technology is rhetorical—are opposite ends of a spectrum, which makes

sense because in our scholarship the second argument was a reaction to the first, with Selfe, Cooper, and others rejecting their early embrace of computer technology in favor of a more skeptical, contextualized, rhetorically savvy understanding that didn't assume the positive effects they'd earlier promised. And in the public sphere, the two sides of the binary are often employed by people at opposite ends of political and cultural arguments, as in the gun debate I framed above. One side argues that the technologies are not the point—guns don't kill people—the other that the existence of the guns, together with a violent popular culture that worships the gun, creates the conditions in which accidents and murders with guns are more likely.

But while there are clear differences between the argumentative strategies, the two sides of the binary are in some ways two sides of the same coin. Both sides note the importance of looking at social context, and the key difference is whether the technology itself is included within the context or not; the first group doesn't include it, the second does by acknowledging the rhetorical construction of the object itself and its implication in the construction of a social context. As a rhetorician, my inclination in my day-to-day arguments with friends and coworkers is—not surprisingly—toward the second argument, which acknowledges the rhetorical construction of technological artifacts and the importance of studying that rhetoric to understanding the ways technologies operate in contexts. But I also believe, as I showed in chapter 5, that technologies and technologists frequently operate as though separate from the non-technical social realm, and that technologists' understandings of technology have real impacts on the way we live and work. After all, the simplistic argument that “guns don't kill people,” while absolutely ludicrous from the perspective of a rhetorician or cultural theorist, has had a

significant life as a bumper sticker and rallying cry and continues to be a widely professed and persuasive viewpoint for millions, thereby working to set public policy and influence the way guns are thought about and used. If people behave as though guns and human behavior are separate, then for all intents and purposes they are.

It is crucial, then, that when we study technological contexts we acknowledge the prevalence and power of “technology is not rhetorical” viewpoints. Doing so makes possible a more enriched and nuanced account of these contexts, as is suggested by Sandra Harding in “Rethinking Standpoint Epistemology: What is ‘Strong Objectivity?’” Harding argues that scientists seeking “objectivity” are missing a crucial part of the picture by ignoring or trying to exclude the social realm from their scientific work. “Strong objectivity,” she suggests, incorporates not only positivist data but also contextual details, including feelings, reactions, standpoints, belief systems, and environment. In our work, we need to carefully reverse Harding’s advice to scientists, enriching our deep contextual details with the objectivist belief systems provided to and created by our participants, with acknowledgement that for them belief in the neutrality or inherent properties of technology is not arbitrary “belief,” but is an unquestioned faith that shapes the way they work, think about work, and structure the work of others. Through an analysis that focuses not on deconstructing such beliefs but at pointing out their effects, we can persuade our participants to listen to critique by demonstrating the concrete effects those beliefs have on real work.

This sort of unquestioned belief is evident in the importance and utility of the technical/non-technical split at SecureCom; in what follows, I demonstrate the way an account can be enriched by temporarily accepting structures and beliefs that are objective

to participants. At SecureCom, priority of “technical” over the other realms of the company is virtually unquestioned, despite some movement to incorporate marketing research into the creation of product development ideas, despite Evan’s fully social high-capital position as the Chief Operating Officer, and most interesting, despite the fairly obvious and deliberative *creation* of the split within the organization through the physical and textual articulation of a “technical” sector of the company via the creation of the split (as I described in chapter 4). Because of my participants’ bedrock belief in the corporate genre that separates the technical realm from the non-technical, they created a company structure that matched their beliefs and then proceeded to almost unquestioningly believe what that structure taught them about the way their work was supposed to be accomplished.

For example, the technical/non-technical split at SecureCom exacerbated the friction caused by different management philosophies. It granted greater capital and authority to “technical” managers than to “non-technical” managers, yet denied SecureCom workers the ideological tools to see what underlay the inequitable distribution of that capital and authority. For an example that I have not discussed previously, I turn to the more recent history of the company, the events that have occurred since I stopped formally gathering data in the organization. There was significant change within the organization; the three developers I focused on in chapter 4 all took jobs elsewhere and were replaced by other developers, and management grew by one when Evan and the principals decided to hire a product development manager—Ruth. Originally, her role was simply to oversee the developers and manage the processes of programming the three products SecureCom now produced. But

immediately Ruth's hiring further formalized the technical/non-technical split, as her role became the supervision not only of the developers, but also of technical support, testing, and technical writing, now a department consisting of my two interns and me.

This change came about as Evan, soon after Ruth's hiring, revisited the organizational chart and the organizational belief in the technical/non-technical split. He quickly classified Ruth's work as technical and also discovered that her hire allowed him to completely eliminate his role in overseeing technical production. He grouped all "technical" tasks, those already physically on the technical side of the wall, under Ruth's supervision and grouped the other side of the wall as either under his supervision ("sales") or Helen's ("marketing"). The technical writing department was something of a problem because he did not view it as being on the same level as "developing" or "marketing" or "sales," and because it had cross-functionality, handling both marketing materials (brochures, flyers, pamphlets) and more traditional technical writing materials (like manuals and online documentation). Ultimately, however, technical writing was placed under "developing" for several reasons: (1) because the department was thought by Evan, the other managers, and myself not to function efficiently with two direct managers, (2) because, given my choice, I preferred to work primarily on manuals rather than primarily on brochures, and (3) because that's where the corporate genre—as interpreted by Evan and the other managers—dictated technical writing should be located.

The decision to classify technical writing as "technical" had significant consequences. First, while Helen's staff was reduced to 2, Ruth's increased to 10; this is perhaps not surprising in what my participants perceived to be a technical company, in

which the technical staff is by far the largest sector of the company and is the recipient of far more capital and resources than other sectors of the company. As demonstrated by the placement of technical writing, given any doubt about capital or resource distribution, the pendulum nearly always swings their way. Second, tensions developed over Helen's access to the technical writing department. Where previously Helen had been allowed to simply come to my cubicle and ask for whatever she wanted, and it had been in my authority to do or delegate (never simply ignore) the work, several intervening technologies were now used to prevent Helen's direct access to my department:

1. **Networked Task List.** My work now came under ever-more-stringent and direct supervision; I was required to keep Ruth constantly informed of any and all tasks and I therefore networked my task list so that Helen could add requests directly and Ruth could at any time see the list.
2. **Ruth Herself.** But this was insufficient; because I was considered "technical," Ruth perceived there to be little reason other than chit-chatting for Helen to contact me or my interns; any work requests were to be funneled directly through her in order to protect me from being "distracted." Helen requested jobs from Ruth, who made decisions about the viability and importance of the marketing task and then, if she deemed it important, passed it on to me.
3. **The Physical Building.** Finally, the technical side of the company became physically and practically off-limits to non-technical personnel. As the technical room was physically located at the far end of SecureCom's office, it was easy for us to avoid distraction from the sales and marketing staff; in contrast, their section of the office connected the front and back of the building and was therefore an

unavoidable walk-through; their work, however, was seen as less prone to being victimized by distraction.

Helen, not surprisingly, found the new arrangement incredibly frustrating as she was now expected to do the same work she did previously but without access to the professional writers and designers in the technical writing department. She frequently resorted to technical and non-technical end-arounds; she would catch me on my way to the kitchen (which required a walk past her cubicle), she would e-mail or instant message me directly (which invariably infuriated Ruth when she found out, whether or not I took on the task), or she would have her intern talk to my intern and relay messages. Ultimately, however, she resigned herself to a more limited set of resources. Ruth, for her part, believed Helen uncooperative and professionally limited.

From my perspective, it is obvious that the difficulties (and from Ruth's perspective, solutions to those difficulties) between Ruth and Helen result from and further reinforce the technical/non-technical split. Because technical writing was classified as "technical," not only was non-technical work quickly excluded from the list of important and allowed tasks, the means of excluding that work were readily available and easy to implement. The physical building, the management justification ("distraction"), the disciplinary boundaries ("technical writers aren't trained as marketers"), the tracking technologies, all participated in helping Ruth reify the split on my behalf. But my participants do not have the rhetorical tools to deconstruct their situation and realize it as in large part a result/cause of the creation of SecureCom's technical/non-technical split; both Helen and Rose perceived the problems between them to be "interpersonal" problems resulting from differing management philosophies rather

than perceiving the problems as in any way related to the articulation of “technical” within the organization. The answer, of course, is that the difficult situation was due to both philosophical differences *and* to an organizational structure that allowed Ruth to enact her philosophy but didn’t allow Helen to enact hers. Helen is left with frustration, dwindling resources and a dwindling department, while Ruth, upon my announcement that I was leaving to accept an academic teaching position, was granted funding for a new fully dedicated technical writer who would not have any marketing responsibilities whatsoever, thus, in her view, completing the evolution of the position into a purely technical one.

Clearly, our previous rhetorical scholarship has not succeeded in impacting the way that organizational workers think about discourse in their organizations; despite all our work in pointing out the rhetorical construction of organizations, in pointing out the rhetorical construction of technical artifacts, in pointing out the rhetorical construction of interpersonal interactions, the participants at SecureCom manage to maintain bedrock beliefs in the objective nature of technology and in their choice of organizational structure. Helen and Ruth both certainly acknowledge that the focus of their struggle was *writing*, as in who was going to do what writing for whom, but neither see the way that writing has, as I showed in chapter 4, itself participated in constructing the situation in which they find themselves, or the way that writing has, as I showed in chapter 5, helped to create an inequitable capital distribution that grants more freedom and authority to Ruth despite their apparently equal positions on the organizational chart.

My point? Simply that our work has not benefited from the types of publicity we’ve managed to acquire by assaulting bedrock belief systems (as in Latour and



Bazerman). Dismissing bedrock only serves to fortify beliefs and does little service to our own; the irony is that we are frequently too quick to dismiss the rhetorical creation of contexts despite our belief that there is no other way. If we think that rhetoric creates reality, then we should feel obliged to address those realities, not dismiss them as “mere rhetoric” ourselves as we’ve done too often in our “technology is rhetorical” arguments. We need to acknowledge that as realities are created only by rhetoric, we haven’t exactly cornered the market on truth; in so doing, we can be more rhetorically persuasive to non-rhetoricians and find a home for our work outside of our own classrooms and conferences.

*Are we monarchs of unimportant decisions, or do we add significant value to the products and services our employers and clients sell? (Hayhoe 23)*

#### **EXPLORING THE LIMITATIONS PLACED UPON TECHNICAL WRITERS AS BOUNDARY OBJECTS**

My work points to the limiting problems that technical writers face in contemporary work places. As I said, it would be misleading for me to suggest that I could generalize from my research to writers at other firms, but the generalizing has been done for me in one respect: technical writers in most organizations face the same kinds of capital limitations I faced at SecureCom. They are financially limited, and they are particularly limited in terms of social and symbolic capital, as evidenced by the many articles addressed to helping technical communicators demonstrate their value to and within organizations. Consider the fighting-for-respect struggle evidenced in the epigram from George Hayhoe that started this section, and consider “The Value Added by

Technical Communicators,” an article in the March 2001 issue of *Intercom*, the Society for Technical Communication’s monthly magazine. In it, as in most of these articles, the author argues, “too often, ‘documentation’ is counted as overhead. This article is intended to help you shore up respect for your position and responsibilities and perform as an advocate for the technical communication profession” (Edelman 11).

In this section, I suggest that my work points to a new possibility for increasing our capital, drawn from the new understanding I bring of our positioning within organizational culture. My work points to a commonality between two common “value” arguments that attempt to increase technical communicators’ capital, both of which relate our perceived undervalue to our position on the technical/non-technical boundary. One response has been to argue for our inclusion, to insist that we *should* be part of the technical via membership on design teams (Conklin; Doheny-Farina; Horton), another is to insist that we already *do* impact the bottom line, that our work ripples from the boundary into both the technical and the non-technical, through reduced tech support call volume, through customer satisfaction, etc (Hayhoe, Edelman). Both of these approaches fight our long-acknowledged positioning on the boundary (see Harrison and Debs’ definition of technical writers as “boundary spanners” and also the Society for Technical Communications common description of technical writers as a “bridge” between experts and non-experts), growing out of a long-established line of scholarship and pedagogy that sees that position as inherently limiting. I suggest a third possibility, that as teachers and practitioners we take the boundary positions many of us hold as positions of strength rather than limitation, that we use our knowledge of our position to recast ourselves as

primary contributors to organizational missions rather than as undervalued service workers.

It is not surprising we find ourselves valued as we are, given our historical relationship to the technical/non-technical split. Consider Hayhoe's dichotomy, in which he asks whether we are (1) unimportant, or whether we (2) "add significant value to the products and services." Implicit to his argument are both the split and an understanding of technical communication as having no content of its own, as a field that exists to translate the work of others (cf. Johnson-Eilola). His two options leave us with only one means of proving our worth: demonstrating that our work with others' content "adds significant value" to that content, adding value that ripples into the technical and the social. With this as our only option, it is hard not to view ourselves—and thereby tacitly endorse the common perception of technical communicators—as members of a service field that exists only to help other professions become better at what *they* do. We "add value," we "contribute," but we are not primary contributors in the way that engineers and developers are because we don't have content of our own. In this way, the value struggle of technical communicators parallels that of contemporary English departments within universities; within the traditional liberal arts college the English department's place was secure as the teacher of canonical works, but with the growth of academic writing instruction and the decline of teaching of the canon (Russell), the clarity of its contribution blurred and it fell victim to the common perception—and Aristotle's claim—that it had no content of its own and existed purely to serve other departments.

This perceived lack of content is a difficult bind for departments and for technical communicators, one that has persisted since Aristotle despite our rhetoric-specific lines of

research and our development of a practitioner base; arguably we have as much “content” as any sociology department or human resources division. The counterargument, after all, is distasteful to us; any argument that our content is *rhetoric*, that our study and creation of discourse for various audiences and purposes is in itself so valuable that it constitutes a tangible asset, can only marginalize the position of rhetoric by isolating it within our work: we do rhetoric, others just read and write. And we’ve done little in our pedagogy to aid the perceptions of our profession. We fail to give students the kinds of expertise they would need to join design teams as equal participants (e.g., training software documenters in interface design rather than assuming their humanist training is sufficient), and, judging from our syllabi and textbooks, frequently limit our teaching to service-work-oriented translation skills. Our own textbooks and courses could lead majors and non-majors to assume that technical communicators are content neutral, that the extent of the job of a technical communicator is “good writing,” “clarity,” “conciseness,” and the neutral “translation” of other professions’ specialist content for non-specialist audiences. We haven’t yet successfully communicated the sophistication of our communicators’ organizational contributions even to ourselves, let alone to the world outside our field from which we wish to extract greater social, symbolic, and material capital.

Missing from this common assessment of technical communicators, after all, is any complicated or theorized sense of what technical communicators already do and can do to dramatically affect their organizations, taking our self-assessments beyond “support work” (Johnson-Eilola). Consider some of the sociopolitical contributions made by technical communicators. As we saw at SecureCom, technical communicators codify,

outline, leverage, and create organizational knowledge, as when I participated in the creation of SecureCom's business plans and technical documentation, documents that not only represented but *created* SecureCom for employees, customers, and potential investors. Technical communicators contextualize, position, (de)politicize and market company products. In my case, I helped develop the marketing strategies for ProBlocker, establishing a more neutral, community-friendly image for a highly controversial and political product, but even in less extreme examples technical communicators build product image, creating the techno-political image of products and services through the creation of documentation and tech specs. Further, technical communicators technologize social functions, as when I made forms and Web documents and coded intranet permissions, structuring how, when, and where other workers would work and access company documents.

Lacking an argument or even understanding of their own content contributions or training adequate to leave the boundary (leaving being heretofore the most obvious and frequently attempted option), it is no surprise that technical communicators have long been seen by themselves and others as service workers in the most limited sense. They know they have a particular, marketable skill—"they can write"—but they are perceived as lacking the content knowledge to be technical *or* effectively non-technical, despite the very real content contributions they make. The result? The kind of capital problem that is both a result and a cause of the technical writer positioning I showed taking place at SecureCom. We are trapped in a vicious circle, where underestimating of the work of technical communicators causes us to be positioned in particular ways within organizations, and in which that positioning justifies further marginalization. At

SecureCom, despite (1) my seniority as one of SecureCom's earliest employees, (2) my cultural capital as an ABD Ph.D. student in professional communication, and (3) my ability and obligation as a researcher to step back and note my positioning within the company, I was moved into ever-more-limiting positions as the organization changed and grew. Finally, as I noted in chapter 4, I had more limited capital than many less senior, less educated, less aware employees who were better able to articulate their value within the organizational structure.

My finding that technical communicators receive less social, material, and symbolic capital than many others in organizations will not be terribly surprising to experienced technical communicators, who, as indicated in the quotations with which I began this section, are accustomed to struggling to establish their value within organizations. I wish, however, for this work to be more than a head-nodding conference presentation, and I suggest that my results can point us to new possibilities for realizing and articulating our value. The kinds of structures that limited my capital accumulation at SecureCom are common elsewhere, and my work gives us a clear target for our difficulties in establishing our value. We can fight to tear down the existing structures, arguing for new kinds of organizational structures that better value the kinds of work we've limited ourselves to historically, or we can use this new knowledge to better adapt to existing structures, by embracing new kinds of communicative work more likely to ripple through and be embraced and rewarded by the technical and the non-technical.

Or, better, we can do both. New kinds of organizational structures are created all the time (cf. Artemeva & Freedman), and we can use our new awareness of the relationship of structure to our capital rewards to, as do other professions, re-establish

ourselves as valuable within each new structural type. Consider, for example, the “knowledge management” movement within management philosophy. Knowledge management is the novel idea that an organization’s *knowledge*, rather than its inventory, constitutes its real assets and products. As Corey Wick notes in his 2000 *Technical Communication* article, there are of course many strands of knowledge management theory, from those that focus on how organizations can better leverage their existing knowledge to those that argue for the creation of new kinds of organizations that focus all of their energies on knowledge: “To the knowledge organization, creating and leveraging knowledge *is a core source of value*, a form of competitive advantage, a core driver of its business, and a *mission-critical* activity permeating almost every aspect of the organization” (517).

Regardless of how limited or all-encompassing the approach, the thousands of books and articles written since the late 1990s on knowledge management target the same kind of traditional, staid organizational structure and culture that limited my capital at SecureCom, structures that over-segment different kinds of knowledge into hegemonic enclaves—whether technical vs. non-technical or human resources vs. marketing vs. engineering—that undervalue the knowledge creation of those who came before and from different places and departments. They advocate the creation of new structures that (1) use new technologies and strategies to better share knowledge, and (2) reward and value “boundary spanning” (Davenport and Prusak) workers who are best able to broker knowledge, making knowledge easy and rewarding for other workers to share rather than hoard, and (3) reconceive of knowledge as not a static “thing” but as a constantly shifting process of communication and creation among people.

Knowledge management, of course, is only one management movement, and despite its intensity and high adoption rate, it will doubtless spawn dozens of spin-off and backlash movements in the next few years; we can't view it as the end-all-be-all of the problems of technical communicators. But in several obvious ways, it is a movement that points to new structural possibilities for technical communicators, even if we consider only the three points I raised above. Technical communicators are an obviously good fit for the kinds of knowledge-sharing work that Davenport and most other knowledge management gurus advocate for knowledge organizations (or "learning companies," or whatever catchphrase the particular author is using). Technical communicators are (1) expert communicators who specialize in developing and using new technologies and strategies for sharing knowledge, and are (2) expert brokers, specializing in spanning organizational boundaries, whether willingly and purposely or by fiat of the organizational structure. And the kinds of tasks described by knowledge management specialists frequently sound like the kinds of tasks ready-made for technical communicators. Consider, for example, the list of examples of knowledge work successes that Davenport and Prusak use to ground the opening of their book:

- At Hoffman-LaRoche, the Swiss pharmaceutical firm, a knowledge management initiative in 1993-1994 reformed the process of developing new drug applications, the voluminous, complex documents that must be submitted to the Federal Drug Administration and European regulatory authorities before any new drug can be approved and brought to market. In significant measure because of the initiative, applications and approval for several new



products now take many months less than the usual time to complete, at a savings of \$1 million per day.

- In 1996, teams of leading heart surgeons from five New England medical centers observed one another's operating-room practices and exchanged ideas about their most effective techniques in a collaborative learning experiment. The result: a 24 percent drop in their overall mortality rate for coronary bypass surgery, or seventy-four fewer deaths than predicted.
- At Hewlett-Packard and many other high-tech firms, the amount of product knowledge required to effectively use and support complex computer products has exploded over the past several years.... So in 1995 the company implemented a knowledge management tool called "case-based reasoning" to capture technical support knowledge and make it available to personnel around the world. Results have been unequivocal and dramatic....

The first and third of these three tasks seem like perfect fits for the kinds of work technical communicators are well-prepared to do by even an undergraduate education. But strangely enough, as Wick notes in his article, technical communicators are almost nowhere to be found within the movement; Wick found that only Davenport and Prusak mentioned technical communicators explicitly, and they did so only once and only after being "excoriated" by a listserv participant for not having included them. Their ideal knowledge brokers? Corporate librarians, who they feel are ideally well suited for helping workers discover the different kinds of content that will help their work. We could easily attack these management types for their omission of technical communication. It smacks of poor research to focus on the brokering potential of

corporate librarians, if only because of their relative scarcity when compared to technical communicators and because doing so underestimates an entire field of professionals whose expertise, from our perspective, lies in precisely the areas they're stressing.

But it would be disingenuous for us to attack the authors on either of these grounds, because we too are guilty of a myopic understanding of our work. By focusing on technical communicators as "concise translators," we've limited our own sense of the job possibilities for ourselves and our students, thereby limiting the potential for anyone to see our work as the kind of all-encompassing communicative expertise that could make us leaders in knowledge management. That limited viewpoint, after all, bleeds through into our daily work. At SecureCom, for example, my position was at first broader than that of most technical writers out of necessity. Because the company was so small, my work was expanded, when needed, into marketing work, into corporate communications, into communication planning, into programming. But as quickly as I was drafted to meet those needs, as the needs of the organization evolved, my work (despite my arguments) was rapidly devolved into a more traditional technical writing position in which I not only did not do other work, but was actually forbidden from working with marketers or on other materials viewed as "distractions" from my role as a user documentation specialist. And the person hired to replace me as I finished my time at SecureCom will be hired as a full-time technical writer with no other kinds of work attachments whatsoever. Her role was to be "purely" that of a technical writer, defined by those with capital at SecureCom as a job of translation.

What is more, I've left out the third quest of knowledge management theorists—"reconceiving of knowledge as not a static 'thing' but as a constantly shifting process of

communication and creation among people”—for a reason. Knowledge management gurus, like most of us, too often fall victim to their own language games. While they very much wish to complicate knowledge transfer by acknowledging that knowledge is not a static thing, they too often are reduced to talking about knowledge as if it *were* a thing. In their discussion of corporate librarians, for example, they talk as though knowledge were a set of documents or other entity to which librarians could guide their clients. And, too, in assessing the differences between data, information, and knowledge they too often reproduce the idea that there are information entities that exist apart from any given context (data and information) through their suggestion that only knowledge is and always must be fully contextualized. These are precisely the kinds of troubles more theoretical technical communicators have always targeted in others; Stephen Doheny-Farina, for example, targets precisely this language problem in his *Wired Neighborhood* review of John Perry Barlow’s work.

But again, it would be disingenuous for us to attack the authors on these grounds, because as a profession we are actually well behind them in terms of widespread adoption of practical, postmodern applications of organizational communication theory that we can leverage for our own benefit. As a field, and especially as a field of expert communicators, we’ve done a poor job of articulating the worth and use of technical communicators within organizations in part because we’ve never successfully defeated the conduit model of communication that suggests that technical communicators’ work is, at base, translating technical materials in order to eliminate the difficulty from technical tasks for non-expert audiences. Our wide embrace of audience adaptation in the 1980s and 1990s has been a largely positive movement that has nonetheless left us with a far-

too-simple vision of communication that still leaves us perceived and rewarded as glorified secretaries. Ironically, other professions have done a much better job of complicating communication, and we are in danger of being left behind.

Finally, it is worth suggesting that perhaps structures like the technical/non-technical split aren't so much the problem of those outside our field as ours. Boundaries define our profession, as we have always existed to bridge boundaries for others. But we don't have to let our work as boundary crossers limit our reward and advancement; by educating ourselves and our students about the structures that govern our work and our positioning within organizations, and by staying informed about philosophical and theoretical changes that can influence the contexts in which we will do our future work, we can learn to leverage our expertise in ways that other professions have for decades.

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