SOCIAL AND CULTURAL FUNCTIONS OF RESEARCH IN TECHNICAL WRITING

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ABSTRACT

Scholars acknowledge that the discourse community known as scientific and technical communication consists of three subdisciplines: the theoretical (academics), the pedagogical (teachers) and the professional (technical writers). While academics claim the theoretical as their domain, few have stressed their primary social function as builders and maintainers of culture, as framers, engineers and even scientists who construct theoretical paradigms which serve as boundaries defining the subdiscipline and discourse community, protecting both against encroaching intellectual forces. This paper explores social and cultural functions of academic research in technical writing. The ideal function of scholarly research, as promulgated by our academic representatives, is seen as a dual one, serving both the advancement of thought and the preservation of culture.

But if the academic process establishes theoretical boundaries to unite the community, if it is essentially an integrating mechanism, paradoxically, its core activity (advancing knowledge) may also become a mechanism for changing and even fragmenting the discipline. Interdisciplinary research presents academics in our field of study with just such a dilemma. Because research of this kind crosses cultural boundaries and the communities they contain, the task of defining community membership and the locus of authority become problematic.

By studying the history of other disciplines, we may gain a more objective understanding of the intellectual and social forces at work on our own discipline and the historical role academics play.

ACADEMICS AS GATEKEEPERS AND INTERPRETERS

Scholars have begun examining the social context in which scientific and technical communication take place and the institutional communities which function as interpretive communities for these disciplines (Zappen, Freed, Lipson, Bazerman). These authors acknowledge that the general discourse community known as technical and scientific communication consists of three subdisciplines which include the theoretical (academics), the pedagogical (teachers), and the professional (technical writers). The theoretical subdiscipline is seen as serving the general discourse community in both its disciplinary and organizational functions. Academics serving as journal editors, committee chairs, conference and department heads and society directors fulfill these important functions through their activities as gatekeepers and interpreters. As gatekeepers they decide who gains membership in their subdiscipline, and as interpreters they set and evaluate research according to the norms and conventions of what the community defines as academic scholarship.

The process of presenting a paper at a learned conference will illustrate how such social and organizational forces work and how academics fulfill these important functions. A proposal to write and deliver a scholarly paper is first screened by a conference committee made up of members of the community of scholars. If the paper is accepted, the scholar is then invited to deliver the paper at the conference to fellow members of the community who individually and collectively evaluate the ideas presented according to the norms and conventions which mark acceptable academic behaviour. Everything from methods of research and nomenclature used, to the models and theories which underlie the discussion is placed under scrutiny. As G. Nigel Gilbert notes, "Evaluation is a process of deciding whether a knowledge claim is compatible with the family of models used within an area" (Gilbert, 299). Some or all of the group's norms must become part of the 'text' of the paper if the scholar is to become or remain a member of the subdiscipline and the discourse community. Though the scholars attending the conference come from different institutions of learning, their common interests give them membership into an 'invisible college'. In this way, community may be said to be as much a symbolic construct

of understandings and meanings as any specific organizational structure or set of social relationships.

Although the activities of our gatekeepers are rarely the subject of research, as our example illustrates, such activities reveal processes at work which attempt to fulfill powerful social and cultural needs of our discourse community. By examining such processes, I hope to expand our understanding of what function academics are expected to fulfill through their scholarly research in technical writing and communication. Academics acknowledge the theoretical as their domain and the advancement of thought as their chief goal. Few academics, however, have stressed the social function they serve as builders and maintainers of community and culture. Academics accomplish these ends through theoretical paradigms they construct, paradigms which define the boundaries to both their subdiscipline and the general discourse community, protecting them both against encroaching intellectual forces. I will attempt to demonstrate through an examination of the writings of several gatekeepers, that academic research in technical writing and communication is assigned two very contradictory functions: first, it is to serve as an integrating mechanism by establishing theoretical boundaries which define, unify and preserve the community as a whole; and second, it is to serve as a mechanism of change, advancing thought and ensuring progress in the study of technical writing and communication. Paradoxically, this latter function is found to be a force which threatens the community.

I will draw on documents which span the 1980's as representative evidence. Prefaces and introductions used are from *New Essays in Technical and Scientific Communication: Research , Theory and Practice,* by Anderson, Brockmann and Miller, 1983; and *Research in Technical Communication: A Bibliographic Sourcebook,* by Moran and Journet, 1985. Barbara Couture's article, *Dicta, Description, and Dialectic: Making Sense of Technical Writing Research,* published in 1988 is also discussed. All of these writers are academics who are guided by the conventions and values of the academies, and by their concern for both the social standing of their subdiscipline within the general community and with the survival of this general discourse community.

CULTURE, BOUNDARIES AND PARADIGMS

Sociologists tell us that strong cultures build and maintain clearly defined boundaries and that the strength of a culture is defined in terms of a group's homogeneity and stability, as well as "the length and intensity of shared experiences" (Schein, 7-8).

Using these criteria as a basis for analysis, what do our authors make of the cultural strength of our discourse community? When measured against the "length and intensity of shared experiences" significantly, a general consensus emerges among these authors that our three subdisciplines are at a disadvantage because they lack a long and varied history. The pedagogical group, the oldest of the three, traces its beginnings to the early part of this century, while the professional group dates only from World War II (Anderson, 9). The development of an academic community, it is agreed, is still in its early stages. Lacking a common identity which a homogeneous group provides or shared experiences which give order and consistency, the discourse community appears fragmented. It is within this context that the social and cultural functions of research, specifically scholarly research, begin to emerge.

When evaluating the kind and quality of research produced by the community, the general consensus among these authors is that "only the professional subdiscipline has a vigorous tradition of research; the least healthy is the theoretical" (Anderson, 7). But while our authors acknowledge the contributions made by the pedagogical and professional subdisciplines, they remain critical of both the practical nature of such research and the methods used to produce it. Although the professional discipline has developed "a strong research tradition," Anderson, Brockmann and Miller conclude, nevertheless, that "its research also has been practical, directed at discovering *ad hoc* solutions to the problems of the marketplace. Without the depth and breadth of inquiry that theory can supply, this practical tradition of research has produced work that is largely intuitive and often repetitious" (9).

Such subjective speculation can hardly serve, they suggest, as the foundation for rigourous intellectual activity from which theory emerges; theory which is to provide an intellectual foundation for communal

dialogue (10). With their eyes forever on the immediate and the practical, the pedagogical and professional subdisciplines have created instead, according to Anderson, Brockmann and Miller, "an environment inhospitable to the speculation and skepticism that scholarly research requires" (9).

Moran and Journet echo this criticism in their comment on the anecdotal tendency of such work (ix) and in 1988, Barbara Couture noting that "research in technical writing has proliferated so greatly within the last few years," concludes that "much of what constitutes the 'knowledge base' in our field can be defined, in Stephen North's terms, as 'lore' -- the intuitive beliefs of practitioners, that is, teachers of technical writing and technical writers" (1). Couture's comment that their knowledge base consists of "the intuitive beliefs of practitioners" points to the general failing of any scholarship which "does not follow a standard methodological approach that a community of researchers has agreed is valid" (1). Couture feels such methodologies are capable of providing much needed continuity for researchers from all three subdisciplines.

My purpose here is not to review all the reasons cited for the general weakness of scholarly research in technical and scientific communication. The point is that all three sources agree that theoretical research and the subdiscipline of scholarship have not developed at the same pace as the other subdisciplines and this weakens the community. Without a common tradition of experience to draw on or the unity that comes from a homogeneous community, the discourse community remains vulnerable to external forces and the subdiscipline forever on the fringe of academic interest within the academy. We must not lose sight of the social significance of this last point. For under scrutiny here is both the state of research in technical and scientific communication and also the social standing of the subgroup within the universities.

A call for serious, scholarly work is heard from all three sources, and all speak of the need to meet the standards and conventions of the academy. To quote Anderson, Brockmann and Miller, "Without the promise of collegial support and academic prestige, then, technical and scientific communication has been hampered from developing a tradition

of scholarly research" (8). The goal, therefore, is to strengthen the discourse community as a whole by building a tradition of research and entrenching the subdiscipline within the universities, but the strategy requires that the community as a whole accept the cultural values and assumptions regarding scholarship held by the academy. The need for a strong research programme, therefore, takes on added significance, and we begin to see academic research serving social as well as intellectual needs.

If we do not have a homogeneous group or shared experiences to provide order and consistency to our discourse community, then perhaps, academic scholarship can serve as an integrating mechanism by constructing a theoretical foundation for the community and a methodology of justification. Sociological studies of emerging organizational cultures suggest that theory can fulfill these needs. As Edgar Schein notes, "theoretical paradigms serve to demarcate a culture's boundaries establishing "cognitive order and consistency" with the group (7-8). For academics, methodologies and theoretical models provide order to acts of discovery and their accompanying discourse within the subdiscipline. These methodologies and models also provide a context of justification against which other research can be judged. Such a context ensures the orderly progress of thought.

It should be pointed out that all of our authors believe that sound methodology and a tradition of theoretical research will also strengthen the general discourse community by uncovering and developing principles which inform both teaching and professional activities. As builders, as framers, and as architects, academics will establish themselves in the academy as stable social units by constructing the intellectual foundations which serve the whole discourse community and future researchers.

INTERDISCIPLINARY RESEARCH

Though our authors have little positive to say about research emerging from the pedagogical and professional subdisciplines, their responses to the interdisciplinary research within the academies, though optimistic, uncovers, I believe, a dilemma and a perceived threat

to the very intellectual and social boundaries our authors hope to construct.

Barbara Couture brings the dilemma into sharp focus when she tells us of her struggle to describe the nature of present interdisciplinary research in technical communication.

> In many ways, I find it easier to try to characterize the nature of research in a field that is less familiar to me than technical communication. For instance, I can state with confidence that research in the sciences takes two forms: basic research which investigates underlying principles which comprise the knowledge base in a field, and the applied research which investigates the application of these principles to practical problems. The problem of 'making sense' of this research, though requiring considerable field-specific expertise, is simplified because a standard exists for evaluating the validity of the research: the scientific method. (1)

Her prescriptive comments throughout the article reveal her preference for a method of research based on observation, community decorum, consensus and dialectic removed from personality. Such a method would emulate science. But technical communication is not a science, and there is no single methodology which can be used to evaluate and contain interdisciplinary research which contributes to our understanding of scientific and technical discourse. Without a clear boundary between disciplines, however, it becomes problematic to define our culture clearly and identify the locus of authority for our field of study.

Although Couture does not address this problem, she does attempt to contain such contending forces in the dialectic process. "Dialectic shakes us from complacency; it asks us to mistrust our consensus, to strip our study of language of its dependency on community affirmation. In short, it tells us to get back to the drawing board" (12). Research must remain open-ended and the researcher forever willing to begin at the beginning.

But community stability is, in fact, what she has been advocating. How do we resolve this dilemma? Stated simply, how are the boundaries established by the community to be maintained when these very boundaries become blurred as disciplines overlap and collapse into each other? How are we to maintain a community when membership continues to shift and expand?

While noting that "more and better scholars with more and better preparation are entering the field," Anderson, Brockmann and Miller acknowledge the "challenges" posed by this "new interdisciplinary tradition of language study, based not in literature and philology, but in modern linguistics, anthropology, cognitive psychology, sociology, philosophy, and a new, non-Aristotelian rhetoric" (9). Although the authors express optimism that their community will benefit from such emerging scholarship, they fail to acknowledge problems such studies pose for their own subdiscipline and their struggling community.

Shifting intellectual perspectives and paradigms, while enriching our knowledge render both researchers and the community vulnerable. How are academics to remain "experts" in even specialized areas of study when the door to further research lies in another discipline? Although Anderson, Brockmann and Miller do not openly raise this issue, they express their faith that scholarship, including interdisciplinary scholarship, will somehow act as a unifying cultural force for the community.

> Scholarly research, such as this, we believe, can contribute to all three subdisciplines of technical and scientific communication: scholarship can build further theory, which is the foundation of a coherent and vigorous discipline; scholarship can both support and correct teaching strategies and curriculum design; and finally, scholarly research can inform the practices and problem-solving strategies of the communication professional. (10)

Moran and Journet are not as optimistic that interdisciplinary research and its contending methodologies and paradigms can be contained in some meaningful fashion. While acknowledging the contributions researchers from diverse fields have made to our

understanding of technical and scientific communication, these authors admit that "it is often difficult to assess in a coherent and unified manner" (ix). Such an admission underscores the difficulty of maintaining boundaries, even intellectual ones. Coherence and unity in evaluation are possible only when researchers share common paradigms and methods of research which the community agrees are valid.

What Moran and Journet hope is that our researchers can "erect a theoretical framework for the study of technical communication. Still in its relatively early stages of development, technical communication lacks a paradigm in which the merit or significance of discrete observations and generalizations can be accurately assessed. Without such a theoretical framework, research in technical communication will remain random, diffuse, and often academically unrespectable" (ix). Their hope is, like engineers, academics will erect a universal paradigm capable of accommodating and unifying knowledge contributed by interdisciplinary researchers.

The fears echoed by these authors suggest theoretical incoherence, divergent specialization and similar metaphors of intellectual chaos. Academics from other disciplines, such as anthropology, have expressed similar fears regarding the specialization resulting from interdisciplinary research. What seems most disturbing to many is that their "field" of study like so many other fields of study is losing its boundaries (Needham, 11).

These observations are not offered to sound an alarm, but rather to uncover forces which impact on our discipline. Perhaps we need to look at where our subdiscipline is situated in its evolutionary development before we can assess such forces accurately. Studying the history of another discipline may help us with this assessment.

Historians of science note, for instance, the period 1600 to 1800 as the first or amateur period of science. During this period science took place outside universities and was conducted by men and women who belonged to other discourse communities. The period 1800 to 1940 has been called the academic period in which there emerged a discourse community trained within the academy whose social function served to

establish and maintain a university culture of scientific research. Although specialization required that the community accommodate many voices, the voices of specialization shared a common cultural boundary defined by the scientific method and the common demands for publication. Finally, the period 1940 to present has been called the professional period and has been characterized as one in which science has become more the servant of business and industry (Woolgar, 19-20).

We do not know if the development of our subdiscipline will mirror the historical pattern taken by science outlined above. I introduce this comparison only to suggest that the study of a related discipline can help broaden our perspective. By stepping back, we can observe social forces at work.

We know from the history of science that scientific paradigms and methodologies change over time producing complex layerings of old and new models. As well, the hard and the soft sciences, the theoretical and the applied sciences each maintain their own cultural values and norms, which suggest that a more accurate perception of science may be one which views it as a loose collection of related fields or societies rather than a single, unified profession (Becher, 1987). Such a view is supported by sociologists of science from Khun to Woolgar. And recent research indicates that institutional context even influences faculty conformity to the very norms of science (Braxton, 1989, 422). Such studies suggest that our ideal of erecting a theoretical paradigm to unite the three subdisciplines and related interdisciplinary studies may run counter to a natural development of knowledge and social groups within academia.

Academics of technical and scientific communication fulfill many roles within their discourse communities. They teach, conduct and publish scholarly research and serve as professionals to business and industry. In each of these capacities they satisfy social and cultural needs. By studying the society and culture of our subdiscipline and reflecting on the history of related disciplines, we can discover how our discipline and the function of academic research change over time. It would be useful if our educational programmes developed in their students an appreciation for the social study of technical and scientific

communication. Such studies will no doubt become important chapters in our organization's future history.

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We must remember that such comments represent the viewpoint of scholars only, and cannot be said to mirror those held by members of

the other subdisciplines. In fact, in 1982 a year prior to the publication of *New Essays*, Robert Conners in his study, "The Rise of Technical Writing Instruction in America," documented the social forces which produced enormous gains for technical writing instruction within the academies in the 1970's. Conners notes that "technical writing scholarship is thriving, and there is a healthy tone of innovation and skepticism in the essays found in today's technical writing journals.... The field is more vital than ever because of it." (349) In his summation, Conners predicted that "It now seems likely that technical communication will be an acceptable field of study for English graduate degrees in many schools by the end of the decade." (349) *Peterson's Annual Guides to Undergraduate and Graduate Study* list 70 four-year programmes and 7 graduate programmes of study in the United States.

The emergence of technical communication as an available academic subject of university study in Canada is still a relatively recent event. Only a small percentage of universities here offer more than a single course on the subject.

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