8 SOCIAL CONTEXT AND

SOCIALLY CONSTRUCTED TEXTS

THE INITIATION OF A GRADUATE

STUDENT INTO A WRITING

RESEARCH COMMUNITY

CAROL BERKENKOTTER,

THOMAS N. HUCKIN, AND

JOHN ACKERMAN

In the last few years researchers using various empirical and hermeneutic techniques have studied the difficulties that young adult writers confront as they enter the university culture (North; McCarthy) and more specifically their major fields (Herrington; Faigley and Hansen). These studies suggest that students entering academic disciplines need a specialized literacy that consists of the ability to use discipline-specific rhetorical and linguistic conventions to serve their purposes as writers. Academic disciplines have been characterized as *discourse communities* (Bizzell "Cognition"; Herrington; Porter); however, these communities are not nearly as tangible as the *speech communities* that Shirley Brice Heath described in her study of the children of Trackton and Roadville. Academic or professional discourse communities are not necessarily located in specific physical settings, but rather their existence can be inferred from the discourse that members of a disciplinary subspecialty use to communicate with each other. In this sense, the discourse that one group of

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

like-minded people use *defines* the community and is its product as well.

In this essay we follow a skilled adult writer, Nate, entering a research community (and by implication, a discourse community) by examining the introductions he wrote to research papers over the first year and a half of his tenure in a doctoral program. We view these introductions as evidence of the writer's socialization into this particular community, and suggest that they provide valuable information regarding the writer's ability to instantiate into text the "institutionalized norms" (Fahnestock and Secor) of his audience. Elsewhere we have discussed the story of this student's initiation into the rhetoric program at Carnegie Mellon University (1988). In this essay we foreground microlevel evidence of his socialization: his increasing mastery of the community's linguistic, rhetorical, and topical conventions, as seen in the introductions to three papers.

The data that we report on here are part of a study that was conducted at Carnegie Mellon during the 1984–85 academic year. One of the authors (CB) was a participant observer in the rhetoric program, attending classes with students, interviewing faculty and students, and collecting case study data from two first-year doctoral students. (One of these students dropped out of the study at the beginning of 1985.) This data, which consisted of Nate's written self reports chronicling his experiences in the program, weekly taped interviews, copies of papers the students wrote, as well as CB's field notes, were reduced and translated into a narrative of Nate's progress as a writer during his first year. This part of the data analysis was carried out by CB and JA. The remaining author (TH), using a series of linguistic measures, independently analyzed the papers Nate wrote between September 1984 and November 1985.[1]

Background of the Study

The theoretical and methodological assumptions on which the study was based are derived from sociolinguistics and from research in the sociology of science. Recent research on scientific publication views texts as socially mediated products and revision as a process of social negotiation (Bazerman, "The Writing"; Gilbert and Mulkay; Knorr-Cetina; Latour and Woolgar; Myers; Yearly). In different ways these studies demonstrate how researchers advance knowledge claims within the linguistic conventions of scientific discourse — conventions which codify audience expectations.

The ways in which linguistic behaviors are derived from community context has also been documented by another group of researchers studying the development of school literacy in young children (Dyson; Heath; Schultz, Florio, and Erickson). These studies suggest that the cognitive

components of language acquisition are developed within and therefore are intimately connected to the language user's home (i.e., cultural community) environment. As language users travel from one community context to another — from home to public (or private) school, from high school to college, from college to graduate or professional training, from graduate school to the work force — they must master new ways of speaking, reading, and writing, ways that are appropriate within each community. The application of this knowledge constitutes what Dell Hymes has called "communicative competence."

Through a synthesis of the above research perspectives with the findings from our data, we developed four assumptions that inform the discussion of these findings:

1. Members of a research community share a "model of knowing" (Miles and Huberman, 20).   This model of knowing is embedded in the research methodology that incoming students in graduate programs learn and is encoded in the language that community members use.

2. A research community extends beyond a student's graduate school to include researchers at other institutions. The vanguard of these researchers constitutes an "invisible college" (Crane, 34–40, 49–56), wherein they share their work with one another through publications in professional journals and through papers delivered at professional meetings.

3. Papers and publications are among a research community's *communicative forums*; significant issues are raised, defined, and debated within these forums. In this sense, to publish and to be cited is to enter the community's discourse.

4. Graduate students are initiated into the research community through the reading and writing they do, through instruction in research methodology, and through interaction with faculty and with their peers. A major part of this initiation process is learning how to use appropriate written linguistic conventions for communicating through disciplinary forums.

The Rhetoric Program at Carnegie Mellon

Carnegie Mellon is a private technical university known for its strength as a research institution. Several departments, including cognitive psychology and computer science, are ranked among the foremost in the country. The research reported here was conducted in the English Department, specifically the rhetoric program, which has been in existence as a doctoral program since 1980. Carnegie Mellon's Ph.D. in Rhetoric is one of a number of doctoral programs in rhetoric and composition that have been developed within English departments in the last several years. David W. Chapman and Gary Tate, in a 1986 survey

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

of 123 doctoral programs in English, identified 53 institutions claiming to offer a specialization of composition/rhetoric. They point out that of these institutions, only sixteen have more than ten doctoral students enrolled, and only three universities actually offer a doctorate in rhetoric: Louisville, Carnegie Mellon, and Texas Woman's (129).

The Ph.D. in Rhetoric at Carnegie Mellon was developed under the aegis of Richard Young, who did a good deal of innovative hiring during his tenure as department head between 1978 and 1983. The current program enables students to enter a field that draws on the expertise of researchers and scholars in a number of disciplines. Rhetoric program faculty include cognitive psychologists, classical and contemporary rhetoricians, a linguist, a speech communication specialist, and a computer scientist. The rhetoric program also has strong ties with the Psychology Department, and it is quite common for English Department students to engage in directed research with psychology faculty. As students proceed through their graduate work, they take several courses in historical rhetoric and contemporary rhetorical theory. But the spine of the program is the training that graduates receive in empirical research methodology.

This training is quite rigorous. Students take an introductory course, "The Process of Research" (team taught in 1984–85 by a rhetorician and a cognitive psychologist), in which they are introduced to the principles of what faculty members call "rhetorical research." They read an introductory textbook on research in the social sciences, learn how to formulate research questions, learn the principles of experimental research design, and receive basic instruction in statistics. As a next step, students often choose to take advanced quantitative research courses in which they learn more about experimental research design and statistical procedures. Students also learn the technique of protocol analysis (gathering and analyzing data from subjects who "think aloud" while performing writing and reading tasks). Second-year students are encouraged to take courses on information processing theory in order to learn the intellectual model and theoretical assumptions that underlie protocol analysis methodology.

The rhetoric program's interdisciplinary curriculum appears to be aimed at producing an intellectual hybrid: a scholar familiar with historical and contemporary rhetorical theory, who can communicate through such forums as *College English* and *College Composition and Communication*, yet also a competent researcher, who can write social science expository prose for educational research publications such as *Research in the Teaching of English* and *Written Communication*. Students therefore need to become knowledgeable about invention theory as well as ANOVA tables, Aristotle and Ong as well as Campbell and Stanley, experimental design confounds and the Pearson product-moment r as well as contemporary writing pedagogy. Course work often includes carrying out research

projects, giving oral presentations, and writing "publishable" or "national conference"-quality papers. With these assignments many faculty members in the rhetoric program attempt to introduce graduate students to the major communicative forums for research and scholarship.

Since students' assignments frequently require them to write using a knowledge of the conventions of empirical research reporting, we wondered to what extent students whose background was, as Nate's, in English studies would be hindered by writing in an unfamiliar genre. Because writers in different disciplines use different rhetorical and linguistic conventions, we would expect to see a student such as Nate experiencing considerable difficulty without direct instruction in writing about research. Indeed, there is considerable research that suggests that mastering the conventions of the research report is a formidable task (Faigley and Hansen; Hill, Soppelsa, and West; Selinker, Todd Trimble, and Trimble).

Research on the Structure of Article and Thesis Introductions

In this study we were concerned with the subject's ability to write introductions, the composing of which creates a special set of problems for the student who is learning the conventions of expository prose in the natural and social sciences. John Swales and Hazem Najjar suggest that:

> Introductions to research articles or papers have become in the last few years an important proving ground for our current capacity to understand the process and product of specialized academic writing. The extensive case studies of Latour & Woolgar (1979), Knorr-Cetina (1981) and Gilbert & Mulkay (1984) provide solid evidence for the complexity of the compositional process at the Introduction stage. All three studies show that writing an introduction to a research article is not simply a wrestling with words to fit the facts, but is also strongly modulated by perceptions of the anticipated reactions of peer-colleagues. Knorr-Cetina's analysis of the evolving drafts of a single paper . . . show(s) how the first draft's bold announcement of a new method ultimately becomes the reporting of a comparative analysis; how the early exuberance of the primary researchers turns into the careful understatement of a wider group; and how dangerous knowledge-claims are made safe as insurance against potential damage to the research laboratory's reputation if difficulties subsequently emerge. (175–76)

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

Swales, Graham Crookes, and Tony Dudley-Evans, analyzing introductions in scientific and social science publications and graduate student theses, found introductions to exhibit a structural schema which can be broken down into a series of rhetorical "moves." The number and the complexity of these moves depends on such variables as space constraints (in professional journals), the nature of the research and the research field (Dudley-Evans, 132), and whether the writer composes in a professional or a training (university) context.

Swales examined the introductions to forty-eight articles in the natural and social sciences, and found that most of them contained a sequence of four rhetorical moves through which a scientist creates a *research space* for his work. Using these moves, the writer: (1) establishes the field in which he or she is working, (2) summarizes related research in the area of concern, (3) creates a research space for the present study by indicating a gap in current knowledge or by raising questions, and (4) introduces the study by indicating what the investigation being reported will accomplish for the field ("Structure of Introductions," 80–92; *Article Introductions*, 178–80). An article by Cynthia L. Selfe in *Research in the Teaching of English* includes an illustration of this four-move schema (figure 8.1).

As Swales's model predicts, this writer immediately identifies the research context in which she will later place her own study by defining the terms that constitute the general research area and naming the researchers who coined the term "writing apprehension." She then establishes a historical context by enumerating previous studies. In three sentences, through highly condensed summarizing, she presents an overview of the field. Having established this overview, she is ready to make the next rhetorical move by raising issues and questions that have not been addressed in the literature. Swales points out that the onset of this third move is often marked by a contrastive connector like "however" and/or some negative element that will be found in the thematic sentence-initial position. In this instance, the writer uses both features, combining "however" with the negative construction "no substantial research" in the thematic position of the first sentence of that move. A second negative, "It is not even certain," appears in the thematic position in the following sentence, linking new information to that in the previous sentence. By identifying two issues that have not yet been addressed—"defining the relationship between writing apprehension and the processes students employ as they compose," and "whether there are definable differences between the composing process[es] of high and low apprehensives"—the writer creates a niche or "research space" for her own study. This she introduces in the next sentence, "The current study was designed to address this particular

Social Context and Socially Constructed Texts

1. Establishing the Field:
The term "writing apprehension," originally coined in 1975 by Daly and Miller (1975b), refers to a generalized tendency to experience "some form of anxiety when faced with the task of encoding messages."

2. Summarizing Previous Research:
Much of the early research in writing apprehension was concerned with defining the theoretical construct of writing apprehension and establishing the validity of the Writing Apprehension Test (WAT), an instrument designed to measure that construct (Daly & Miller, 1975b, 1975c). Later research has explored the correlative and predictive functions of the WAT. Specific studies have connected scores on WAT with choice of academic majors and careers (Daly & Shamo, 1976, 1978), scores on self-concept and self-confidence measures (Daly, 1979), and performance on various assessments of writing skill and writing quality (Daly, 1978a, 1978b; Daly & Miller, 1975a, 1975d).

3. Creating a Research Space by Indicating a Gap:
To date, however, no substantive research has been done to define the relationship between writing apprehension and the processes students employ as they compose. It is not even certain, for example, how or to what extent the theoretical construct of writing apprehension is evidenced during the act of composing, whether, in other words, there are definable differences between the composing process [sic] of high and low apprehensives.

4. Introducing Present Research:
The current study was designed to address this particular question.
The research project reported in this paper had three main goals:
1. To record the predrafting processes of several high and several low writing apprehensives engaged in academic writing.
2. To analyze the predrafting processes of both groups.
3. To examine the results of this analysis for evidence of differences related to writing apprehension.

Figure 8.1. Illustration of four rhetorical moves in article introductions (after Swales 1981)

question," and presents her purpose by enumerating the three goals of the research project she is to report.

The regularity with which these four moves appear in scientific journal article introductions suggests that they constitute the basic schema. However, as Swales himself has noted, many variations can and do occur. In separate studies, Bazerman and Huckin have shown that scientific journal conventions change over time. And Crookes, in a follow-up study of Swales 1981 using the same three categories but half as many articles, found that there were only five cases (out of 24) which had a clear 1-2-3-4 sequence of moves. Four cases had only a Move 2 and Move 4. And seven

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

of the eight social science articles had five or more moves. It seems that in the "softer" sciences the writer is often compelled to address not a single problem but multiple problems. These problems emerge from the summary of previous research (Move 2). Each is addressed, in turn, by a separate Move 3. Thus there is a characteristic reiteration of Moves 2 and 3, resulting in an overall 1-2-3-2-3-2-3-4 sequence or something similar.

In a study of master's theses, Dudley-Evans found this longer reiterative pattern to be so common as to constitute a virtual schema unto itself. He examined the introductions of seven theses in plant biology, ranging in length from 320 words to 4,640 words, and found that Swales's four-move schema was not adequate to describe their rhetorical complexity. In all of these theses, which were rated "satisfactory" to "good" by a plant biology professor, the writers went to far greater lengths to establish and justify the research topic than was done in Swales's journal articles. Dudley-Evans proposed a six-move schema to describe these introductions:

Move 1: Introducing the Field
Move 2: Introducing the General Topic (within the Field)
Move 3: Introducing the Particular Topic (within the General Topic)
Move 4: Defining the Scope of the Particular Topic by:
      (i) introducing research parameters
      (ii) summarizing previous research
Move 5: Preparing for Present Research by:
      (i) indicating a gap in previous research
      (ii) indicating a possible extension of previous research
Move 6: Introducing Present Research by:
      (i) stating the aim of the research
      or
      (ii) describing briefly the work carried out
      (iii) justifying the research.

Figure 8.2. A Six-move schema of rhetorical moves for master's theses in scientific fields (Dudley-Evans, 1986)

Although Dudley-Evans does not venture an explanation for the differences between journal article introductions and thesis introductions, we suppose that the latter are more elaborate because students are expected to display their knowledge in a more comprehensive way, and to presuppose less knowledge on the part of the reader, than are writers of specialized journal articles.

We found the Dudley-Evans' student-oriented schema more appropriate than Swales's professional-oriented one for the study at hand, since the subject was a graduate student learning the conventions of research report writing. It should be noted that neither Swales's nor Dudley-Evans'

models should be taken as prescriptive. They do, however, provide us with an analytical framework for gauging Nate's development of formal, text-based schemata which enabled him to communicate with others in his field through professional forums.

Entering the Conversation of a Writing Research Community by Acquiring Genre Knowledge

The research described above suggests that writing the introduction to a research report involves bringing into play a considerable amount of procedural as well as content knowledge. Because such introductions contain a great deal of information (sometimes as many as thirty summaries of related research presented as brief "gists") in a relatively small space, writers must master both the technique of summarizing and the procedures that will enable them to summarize according to their rhetorical purposes. Learning to use the conventions of the article introduction may well constitute the most difficult part of research writing, especially for novice researchers.

The first-year student we chose to study entered the Carnegie Mellon program with substantial experience as a writing teacher, as an expressive writer, and as a creative writer. Nate had received a B.A. and an M.Ed. in English and in Curriculum and Instruction and had taught freshman composition for six years prior to entering the program, so he brought considerable experience and linguistic expertise to graduate school. His background, however, like that of many students who entered the Ph.D. program from English departments, had not included training in the genres of social science expository writing that were the preferred form of academic discourse in many of his courses. Nate had not written experimental research papers or literature reviews and therefore was not familiar with the conventional structure of the research report in the sciences and social sciences, i.e., introduction, methods, results, discussion. He therefore could not have been expected to know, for example, where in such a report, writers place their key findings (Swales and Najjar); nor could he have been expected to possess or to utilize the procedural knowledge described above. On the other hand, Nate could be observed over a period of several months becoming familiar with his professors' research agendas and with the disciplinary issues being discussed in the classrooms, hallways, and offices, at department colloquia, conferences, and other gatherings. At the same time he was also learning social science research methodology and immersing himself in the professional journals and technical reports which essentially constituted the textual counterpart of his new field of study. Thus, not only was he learning how to converse within

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

the immediate context of a graduate program, but he was also learning the conventions appropriate to a larger research network.

We hypothesized that the attendant changes appearing in Nate's writing can best be understood from the sociolinguistic perspective of language operating in a "multidimensional space." Richard A. Hudson, paraphrasing Robert B. LePage, argues that writers can and do belong and respond to more than one community at once, and that a writer "chooses" to address a community with corresponding linguistic and topical conventions (13–14). For a writer entering a new community, as was the case with Nate, this choice was hardly clearcut or final. The texts chosen for analysis were introductions to end-of-term project reports written in Nate's first three semesters. These reports served as mileposts in that they represented the culmination of a semester's thinking on the given research topic and the writer's compiled linguistic and substantive knowledge in his new discipline. Since these texts are introductions to papers that Nate wrote for course assignments rather than articles submitted for professional journals or theses, we cannot expect him to exhibit a command of the conventions that Swales or Dudley-Evans describe. Yet, in spite of the obvious differences in school and professional contexts, constraints, and purposes for composing, this writing increasingly shows signs of the adoption of the conventions of his newly adopted community.

Thus the introductions to Nate's research reports can be viewed not only for presence of the rhetorical features that mark acceptance in a national community of researchers but for facility with and dependence on topics and language from both his past and from his immediate social context. In these introductions we shall see Nate integrating new topical and rhetorical information with old, the latter derived from his teaching background and familiarity with literary forms of discourse.

The first introduction is from a report on a survey that Nate conducted three months after he entered the program. This survey was completed in his first research methods course, which all students entering the rhetoric program were required to take. His professors told the class that the research questions from which they developed their surveys should grow from a "felt difficulty," that is, an intensely felt issue, question, or problem. (The sentences have been numbered for later reference.)

TEXT 1
How and Why Voice is Taught: A Pilot Survey
Problem
The English profession does not agree on what a "writer's voice" means or how the concept should be used to teach writing, equating it to personal style, literary persona, authority, orality, or even grammar.
(1)   When teachers, writers, and researchers comment on the phenomen

of voice, they usually stay on a metaphorical level. (2)   Voice is "juice" or "cadence." (3)   The concept appears to be too illusive and too closely tied to personal rhetorical philosophy, disallowing a generally accepted definition for common usage. (4)   A novice writing teacher, then, might say "You don't know what it is. (5)   I don't understand it. (6)   How or why should I teach it?" (7)

It should be taught. (8)   Most experienced teachers and accomplished writers recognize that in spite of the wide range of definitions the concept of voice is somehow central to the composing process. (9)   Some believe that without voice, true writing is impossible. (10)   Until the profession understands the phenomenon or in some way addresses what these experts are saying, a paradox exists, and the novice writing teacher confronts a mixed message. (11)   Voice should not remain just another eccentricity in an already idiosyncratic profession. (12)

Background
Who are these "accomplished" teachers, writers and thinkers who uniquely honor a writer's voice? (13)   Aristotle, Coleridge and Moffet [sic] have acknowledged the impact of the "self" on an audience. (14)   Donald Murray and other contemporary rhetoricians state without reserve that this *self*, the writer's voice, is "at the heart of the act of writing." (15)   From my experience writing and teaching writing I know that a writer's voice can spirit a composition and, if the voice is misplaced or confused, can drive a teacher or writer batty. (16)   If I say to my class "No, No the voice is all wrong here," or "Yes, I can hear you now," I might induce the kind of *authority* I seek, but I am probably sending one of those strange undeciferable teacher-messages that students rightfully ignore or misinterpret. (17)   I am liable to get talk-writing or emotions unbound. (18)   Like the accomplished experts and theorists, I tacitly know that voice is important, but I am not necessarily equipped to translate this importance for my students. (19)

Are there other teachers who face or at least perceive the same dilemma? (20)   I sense that there are, but a hunch is not good enough. (21)   Since I have invested time and energy searching the question of voice, I worry that my observations and suspicions are egocentric. (22)   Before I tire myself and my colleagues with a series of inquiries and experiments, I must decide if a problem actually exists. (23)   Therefore I composed a pilot survey to tell me if I should continue my study of voice and in what direction. (24)   The survey, a questionnaire, was aimed at other writing teachers in the Pittsburgh area. (25)   By asking if, how, and why voice is taught I hoped to understand the boundaries of my questions and my universe. (26)

This text is a good example of a writer working in a "multidimensional linguistic space" in the sense that in it we can identify traces of the writer's past experience and interests merging with new research methods, problems, and rhetorical forms. Nate had entered the rhetoric program in part

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

because he wanted to learn research methods to help him answer questions growing out of his experience as a freshman writing teacher. He chose to survey ways that college-level writing teachers used the concept of voice. Nate's view that writers have a "personal voice" was central to his teaching philosophy and guided his participation in a National Endowment for the Humanities seminar the summer before he entered the Ph.D. program. Thus, the introduction to his survey reveals the pedagogical values he brought to the rhetoric program, implicit in his claim that an understanding of "voice" is essential to an understanding of the writing process. At the same time the introduction was his first presentation of research to social science–oriented readers who would expect to see a term like "voice" defined operationally.

That Nate seems to be addressing more than one audience in this paper is suggested by the vocabulary and genre features he uses. He mixes terminology suitable for social science expository writing ("phenomenon," "paradox," "acknowledged," "pilot survey") with colloquialisms like "batty," "liable to," and "hunch." He talks in neutral language about "a series of inquiries and experiments" and then changes register and talks in a more personal vein about "the boundaries of my questions and my universe."[2] Although he appears to be following a social science text schema by labeling segments of the introduction "Problem" and "Background," his use of these subheadings seems imitative rather than based on true genre knowledge. His problem statement consists of a series of assertions about the importance of teaching and researching voice.

Nate's aim here appears to be persuasive; he wishes to convince his readers that it is important to begin to isolate the phenomenon of voice in order to characterize and thus define it. In sentences 13–19 he attempts to elaborate on the problem, first by referring to such diverse authorities as Aristotle, Coleridge, Moffett, and Murray. Instead of including citations to specific works, however, he mentions these four names only in passing; most of the support he marshals for his claims comes from personal testimony. By not placing his research within a larger disciplinary frame of reference, he cannot offer his audience a warrant in the form of citations which designate an established field to which his present study will contribute (Toulmin, 97–107). From the perspective of his immediate audience, Nate's persuasive strategies would likely be ineffective, since he neither bases his claims on shared knowledge nor uses conventions that will enable him to establish warrants for his claims. From the perspective of his NEH or freshman compositon writing communities, on the other hand, his strategies would probably be quite effective.

A comment in one of Nate's self reports shows he was aware of his new role in a research community and a change in his writing:

I always intended to be sensitized to the scientific canon, something I accept like my father's lectures on handshakes, something I just need to do if for no other reason than you have to know something from the inside before you can fairly criticize it.

Yet the warrants behind the claims in his report rest in his shared experience with fellow teachers and writers and not in explicit connections with previous research or scholarship. Although this writing does not create a "research space" in the way Swales describes, we can still say the text is socially constructed. It reflects Nate's recent participation in a linguistic community where the rhetorical moves of social science are less attractive and personal appeals and experience are more common. Readers from Nate's previous community would (and did) find his claims accurate and without need of further substantiation. What interests us here is that this writing, though originating with a personal "felt difficulty," was a first attempt at social science prose. Nate responded (predictably) by relying mostly on the wealth of substantive and linguistic knowledge that he brought to the program.

Writing for a Local Audience in the Rhetoric Program

Six months later in the program, Nate wrote an introduction to a research report for his "Process of Composing" course. This report detailed a pilot study he conducted using protocol research methodology. Nate began this introduction as he had Text 1, by introducing a problem that his research was to address. However, Text 2 reflects a new area of personal inquiry and research. Here we see him drawing on newly acquired theoretical knowledge of cognitive psychology as well as on issues that he was being exposed to in his coursework.

TEXT 2

Reframing: The Role of Prior Knowledge in the Process of Reading to Write

Introduction

The Problem

It is nearly impossible to ignore the remarkable efforts by researchers and theorists over the last 15 years to understand the composing processes of writers. (1)   It is equally remarkable to consider how little is known about the reading process, especially as a companion process to writing. (2)   Many of the academic exercises our students encounter or the competencies we aspire for them embrace both

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

domains. (3)   Only recently have researchers begun to study relation-
ships between reading and writing processes, focusing primarily on
how reading affects the development of a writer (Smith, 1982;
Scardamalia and Bereiter, 1984). (4)

   One reason for this seeming oversight may rest in our short-sighted
image of the writer. (5)   Romantic philosophies and practices urge
self-determinism; and writing is seen as a lonely struggle, the writer
armed only with a blank legal pad, introspection, and the admittedly
noble cause of writing to discover a universe. (6)   Though I do not
argue the place or nature of expressive writing, I do argue that another
image of the writer is equally viable. (7)   Writers collaborate, for one
thing, with other writers (Ede and Lunsford, 1984) and with other
language communities. (8)   Among others, Patricia Bizzell (1984)
draws our attention to the price paid for ignoring the conventions and
genres of an academic community. (9)   Working from that image, the
writing in college is social, and assignments include the artful manip-
ulation of texts and task, of plans and intentions, of community and
self. (10)

   If composing is multi-dimensional, what processes must a writer
manage in order to move gracefully from the act of critical reading into
the act of critical writing? (11)   And if "grace" is not possible, what
constraints interrupt and alter the process for a writer who must first
read to write? (12)   In this report and proposal I describe what I am
calling reframing, one cognitive component in the process of reading
to write. (13)   To reframe means to map semantic schemas from prior
knowledge onto key propositions in freshly encountered material. (14)
Readers reframe to create manageable "gists" dependent on experi-
ence related to the subject domain and their representation of the
task. (15)   Reframing is best understood as a constructive act of read-
ing: a lessening of informational loads, a creating of plans and a
shaping of content—all of which drive the draft that soon follows. (16)

Text 2 differs in many ways from Text 1. Although Nate and his classmates
were asked to begin with an "interesting feature" in the protocol data that
they had collected, an assignment that appears to invite a personal per-
spective, Nate writes with much less a sense of a "felt difficulty" and without
personal testimony. Here, his writing is "collaborative" in that this text
refers to issues he and his peers had discussed in the immediate context
of the graduate course. For example, in the second paragraph Nate al-
ludes to an alternative "image of the writer" and cites examples (lines 7
and 8) from scholarship on "collaboration" and "academic communities."
Comments from Nate's self reports and his professor's positive reception
of this argument suggest that Nate had successfully entered into a local
conversation. This conversation would, however, exclude many readers.
Sentences 14–16, for example, are written in language that would have
been understood by Nate's professor, but is jargon ("semantic schemas,"

"key propositions," "informational loads," etc.) to readers unfamiliar with psycholinguistics. Nate also appears to be using a more situationally appropriate register in Text 2 than he had in Text 1. Instead of colloquialisms like "hunch" and "batty," we find him employing more formal lexical choices, which include "encounter," "aspire," "viable," and "admittedly." Finally, the I-centered focus of Text 1 seems to be giving way to a broader, more communal perspective: whereas the first-person singular pronoun was used heavily in Text 1 (19 times), here there is a 4-4 split between the first-person singular and the first-person plural.

Genre features also point to Nate's growing identification with a disciplinary community. Indeed, this text exhibits the sequence of rhetorical moves Dudley-Evans observed in the introductions to graduate plant biologists' theses (although not in the detail that appeared in those texts). In sentence 1 Nate introduces the general field, "the composing processes of writers" (Move 1). In sentences 2 and 3 he introduces the general topic within the field, "the reading process, especially as a companion process to writing" (Move 2). Sentence 4 introduces the particular topic, "relationships between reading and writing processes" (Move 3). In sentences 4–10 he defines the scope of the particular topic by introducing research parameters and summarizing previous research (Move 4). Sentences 11–12 prepare for present research by raising questions (Move 5). And in sentences 13–16 he introduces the present research (Move 6) by describing briefly the work carried out (but see discussion below).

Text 2 occupies a transitional position between Texts 1 and 3. On the one hand, Nate can be said to be constructing an argument in this introduction that will enable him to create a "research space" for his study. Not having received formal instruction in the rhetorical moves of introductions, he has apparently picked them up, at least superficially, from his reading: he displays all four of Swales's moves and all six of Dudley-Evans', in the right order. On the other hand, he does not situate the field and the topic in the kind of detail that would be called for in a thesis (Moves 1–3). Further, his attempt to summarize previous research (Move 4), though more focused than in Text 1, is still somewhat vague and discursive. Move 5 is clear enough, yet coming on the heels of weak Moves 1–4, it might not be fully expected. Move 6 is also quite clear, but it does not adequately describe the work actually carried out in this study (case studies using protocol analysis).

Although Nate's assignment was actually to write a proposal for more research based on his pilot study, as if he were seeking funding, his argument would not succeed in the eyes of a reviewer outside his research seminar. First, he does not provide readers outside of the seminar with enough explicit detail. Second, and more important, he does not establish his authority by citing previous publications and acknowledging

established arguments within an existing research forum. If Nate's report were submitted to a journal referee or grant reviewer, we could expect the reader to puzzle over what is assumed to be shared knowledge. For example, he does not establish a connection between his comments on collaboration and social contexts (sentences 8–10) and the material which follows in the last paragraph. It would not immediately be clear how the questions posed in sentences 11–12 relate to the discussion in the preceding paragraph. However, for Nate's *immediate* audience, his professor and even other members of his research seminar, this argument is much less elliptical. The antecedents to the propositions on collaborative writing, social contexts, and critical reading and writing are traceable to earlier drafts, comments by his professor and classmates, and class discussion as evidenced by Nate's self reports during the semester. We suggest that Text 2 is transitional because it exhibits the outward signs of the rhetorical devices of a social science subspeciality, with a system of warrants, claims, and rhetorical structures, while at the same time is clearly a collaborative, local construct, dependent upon the shared knowledge of a limited set of readers.

Writing to Join a Conversation among Composition Researchers

Text 3 is the introduction to a research report Nate wrote in December 1985, after having been in the rhetoric program for a year and a half. The immediate occasion of the report was a term project for a "Computers and Rhetorical Studies" course. Nate also used this introduction for a shorter paper that he wrote for a psychology course on human problem-solving. Thus the paper was written for two immediate readers—his rhetoric professor, whose background was in computer science, and a senior psychology professor. As we shall see, however, Text 3 reflects not only Nate's immediate rhetorical situation, but also his intellectual identification with the research agenda of the professor of his "Process of Composing" course, for whom he wrote Text 2. Through that professor he became familiar with studies by researchers beyond his local university setting who were asking questions about the interactions between reading and writing processes (as seen in his references to Smith, Langer, and other researchers). In this sense, Nate was not only fulfilling course assignments with this project, he was also writing to participate in a local dialogue and enter into the professional conversation of a research subspeciality.

This text deals with the same topic as Text 2: how writers use background

knowledge when writing from source materials. It is the first time in his graduate career that Nate has been able to run a follow-up study and write a second paper on the same topic; hence it is interesting to compare these two texts. Like Text 2, this introduction displays the sequence of six rhetorical moves described by Dudley-Evans. Sentences 1 and 2 introduce the general field, "relationships between writing and reading processes" (Move 1). Sentences 3 and 4 narrow the topic to "how reading and writing facilitate each other" (Move 2). Sentences 5–8 narrow the topic further to "the role of experiential knowledge" (Move 3). Overlapping with Move 3 is Move 4, in which Nate defines the scope of his topic by summarizing previous research (sentences 6–8). He then prepares for present research (Move 5) by indicating how previous research by Judith Langer can be extended (sentences 9–12). Finally, he introduces the present research (Move 6) with a lengthy discussion of aims and justification (sentences 13–27).

However, Text 3 differs from Text 2 in significant ways. It elaborates more on every one of the six rhetorical moves and is more than twice as long. Where Text 2 devotes four sentences to introducing the topic (Moves 1–3), Text 3 devotes eight. Where Text 2 discusses four previous studies (Moves 4–5), Text 3 discusses twelve. Most important, where Text 2 introduces present research (Move 6) by simply stating a thesis, Text 3 introduces present research via an elaborate, hierarchically organized series of hypotheses. Clearly, Nate has not only become aware of the standard rhetorical moves of this genre, he has also learned how to use them to better effect. Text 3 draws more on information reported in antecedent texts by other researchers than does Text 2. It is also more sensitive to the possibility that, without the necessary evidence and warrants, some readers may not accept the claims the writer is about to make. Although there remain a few "off-register" metaphorical expressions such as "dead center," (5) and "nourished" (6) most of the prose in this text is cast in the neutral, "objective" style that characterizes the research writring that Nate had been reading in the fields of psycholinguistics, cognitive psychology, and educational research. Readers may want to flip back a few pages and compare the style of this text to the more informal, "oral" style in Text 1. Here Nate is projecting a more "scientific" *persona*. In fact, one of the most striking differences between Text 1 and Text 3 is the transformation of the relationship between persona and subject matter. In Text 3 the writer directs the reader's attention toward the issues under discussion, rather than to his own sensibility as he had done in Text 1. Even in Text 2, the writer had occasionally adopted the first-person pronoun. For example, in sentence 7 of that text he had asserted, "Though I do not argue the place or nature of expressive writing, I do argue that another image

Carol Berkenkotter, Thomas N. Huckin, and John Ackerman

TEXT 3
Toward a Generative Computer Environment:
A Protocol Study
The Problem

Although reading and writing have received national attention with the advent of the literacy crisis, only recently have researchers begun to study relationships between reading and writing processes. (1) That research has focused primarily on how reading affects the development of young writers (Smith, 1982; Scardamalia and Bereiter, 1984). (2) There is little research at all that looks specifically at how reading and writing facilitate each other (for a speculative study see Petrosky, 1982). (3) This dearth is especially curious in the light of the amount of academic learning that depends on simultaneous expertise in both modes of expression.* (4)

*It is increasingly accepted that reading, along with writing, is a constructive act where the reader, like the writer, uses goals, knowledge, and strategies to make meaning. (This note belongs to Nate's text.)

Dead center in the reading-to-write question is the role of experiential knowledge. (5) Accomplished writers (who are surely accomplished readers) admonish novice writers for straying too far from topics nourished by experience or substantial study (Murray, 1981 & McPhee, 1984). (6) Similarly, research overwhelmingly supports our intuitions that background knowledge significantly affects the construction of meaning in a text (Anderson, 1977; Goodman and Goodman, 1978; Harste, Burke and Woodward, 1982; and Langer, 1984). (7) What advice, then, do we give our students—when they continually face reading and writing assignments demanding facility with both text-based and experience-based knowledge? (8)

The Study

Judith Langer (1985) partially answered that question by analzying the effects of text-based topic knowledge on 10th grade writing. (9) She found, via a free-association test, a direct and positive relationship between her subjects' ability to hierarchically display the meaning of a passage and the ability to compose later a "coherent" draft. (10) Following Langer's lead, this study explores how topic knowledge affects academic writing and, more specifically, how experiential knowledge becomes the major variable in a reading and writing scenario. (11) Although Langer's study begins with much the same question for research, important distinctions must be noted. . . . (12) (Here Nate elaborates on differences between his project and Langer's. We have omitted this passage for the sake of brevity.)

The primary goal of this study is to describe how experts use experiential knowledge to invent original, effective organizational patterns in their plans and drafts. (13) Bonnie Meyer (1984) has documented a reader's affinity for hierarchical text plans, or what might be called

the traditional mental representations that guide comprehension in print. (14)   Since Aristotle we know that rhetorical discourse follows common logical patterns. (15)   From years of exposure to these basic plans—antecedent/consequent, comparison, description/response, time-order—a writer who is first a reader might naturally turn such a plan into a traditional albeit unoriginal plan for writing. (16)   However, a writer becomes "noteable" when he or she strategically deviates from these norms (Elbow, 1984), creating what is essentially an organic, experience-based plan that improves upon time-worn organizational patterns. (17)   Stephen White (1985), through extensive product analyses of personal narrative assignments, has begun to document how students successfully create autonomous, experience-based text structures. (18)   This study seeks to explore this phenomenon as well, tracing the decisions and variables that speed the process. (19)

An exploratory study need not be run blind. (20)   Findings from previous research and protocol analyses suggest the following list of predictable behaviors in the reading-to-write scenario. (21)   A subject might:

Balance text-based and experiential knowledge successfully to complete the task—
   using both to form a coherent, organized, and original design for the draft.
   choosing a personal organizing principle inherent in the recollection to structure the paper and otherwise structure the key issues in the texts.
   choosing one of Meyer's text-specific organizational patterns to structure a draft, adding substance with experience-based elaborations. (22)
Lean on experiential knowledge and lose sight of the task—
   selecting only those issues in the reading that comfortably match experience, ignoring other germane issues.
   ignoring the texts altogether, digressing into a narrative or personal elaboration which distorts the task.
   misrepresenting key points in the texts by illogically attaching personal background knowledge. (23)
Rely on text-based knowledge exclusively, ignoring any and all related experience. (24)

These predictions in effect create a working hypothesis on the range of behaviors possible in a reading-to-write assignment. (25)   Coupled with the findings here they will form a data base on which a model of expert behavior can be built. (26)   That model and a computer tutorial based on that model are the long range goals of this research and should offer substantive answers to the educational question of how can facility with experiential and text-based knowledge be taught. (27)

of the writer is equally viable." In contrast to the twenty-three first-person singular pronouns in Text 1 and the four first-person singular pronouns in Text 2, here Nate avoids the first-person singular pronoun altogether. The frequent use of first person, the informal oral style, and the metaphorical constructions in Text 1 created the sense of the writer's personal involvement with the object of study. In Text 3 the writer's expression of a personally "felt difficulty" has been replaced by a "neutral" description of a "significant" research issue. The writer documents the significance of this issue by using citations. For example, the string of citations that appear in sentence 7 refers anaphorically to subject and verb of the sentence ("research . . . supports") and serves to instantiate the writer's claim that "research supports our intuitions that background knowledge significantly affects the construction of meaning in a text." Nate's use of this technique as well as his "socially appropriate" persona and style are signs of his increasing command over the conventions of writing about research.

Text 3 would probably be the most difficult of the three introductions to decipher for readers outside of the community of specialists to whom Nate was writing. To many readers Nate's meaning would appear to be obfuscated by a thicket of jargon. One encounters throughout a technical terminology familiar primarily to a specialized readership of cognitive psychologists and psycholinguists. Some examples of this terminology are: "experiential knowledge" (5, 11, 13), "experience-based knowledge" (8), "experienced-based plan" (17), "autonomous experience-based text structures" (18), "text-based knowledge" (8), "text-based topic knowledge" (9), "topic knowledge" (11), "hierarchically display(ed) meaning" (11), "reading and writing scenario" (11), "hierarchical text plans" (14), and "mental representations" (14). Nate's use of this terminology suggests that he is able to speak in the discourse of a specialized readership. His use of this lexicon also indicates that he is building a conceptual framework that will allow him to interact with other members of this specialist community, to identify important research issues and problems, and in a general sense, to share (although perhaps not to be cognizant of) the community's epistemological assumptions.

The differences between these three texts written over three consecutive semesters suggest some summary inferences regarding the manner in which Nate appears to have migrated toward the specialist's perspective. Text 3 is "intertextual" in a way that Texts 1 and 2 are not. It is heavily indebted to concepts and terminology in the literature that Nate cites (de Beaugrande and Dressler, 10–11; Porter, 35). While Text 3 gains strength through this intertextuality, it remains collaborative as well, since it is staged within a local conversation and is directed at an immediate readership. In Text 1 the writer had been an isolated newcomer inquiring whether anyone shared his "dilemma." In Text 2, we see the embryonic researcher

learning a theoretical model and research methodology reflected in the terminology he is beginning (albeit somewhat awkwardly) to use. By Text 3 Nate has assimilated a literature and a lexicon and therefore is more comfortably able to speak in the discourse of his subspecialty.

Conclusion

In his case study of two biologists revising to accommodate their referees' criticisms, Myers raises the questions, "How does a researcher learn all [the] complex conventions of the scientific article? What part do such negotiations play in the education of a doctoral student, or in the choice of problem or shifts of specialty?" ("Texts as Knowledge Claims," 628). From the changes appearing in the three texts above, we can infer some of the complex social negotiations that writers engage in as they prepare to enter an academic field. Although we are reluctant to generalize from our findings to other students entering academic discourse communities as graduates, we would like to offer the following observations and speculations.

First, it appears that, for students with backgrounds similar to Nate's, making the transition from *composition teacher* to *composition researcher* (i.e., from practitioner to specialist) involves a difficult passage from one academic culture to another. Developing communicative competence requires that they master the ways of speaking, reading, and writing which are indigenous to the new culture.

Second, although many students entering interdisciplinary doctoral programs with an emphasis on empirical research like the one at Carnegie Mellon will be reading in new and unfamiliar fields, students with prior training in the sciences or social sciences may be more likely to bring previously developed procedural schemata for writing about research than those with backgrounds in literary studies or composition pedagogy. We base this observation partly on Nate's predictable difficulty mastering the conventions and language of social science reporting and partly on observational data from the earlier study (1988) which indicated that most entering graduate students struggled to gain competence with either key issues or the locally preferred conventions for reading and writing. Though far from conclusive, the earlier study and our analysis here raise the question of what type of training or teaching experience best prepares a graduate student to enter a community of writing researchers.

Finally, we suggest that the development of *academic* communicative competence (or academic literacy) involves the ability to adapt one's discourse as the situation requires. In this study we saw a writer struggling in his first assignments to use a comfortable voice and style to address

an uncomfortable and unfamiliar writing assignment. As his training progressed, he learned through exposure, practice and reinforcement to use a different voice and style. Some theorists have proposed that similar struggles characterize undergraduates' writing instruction and experiences (Bartholomae). How much information regarding the discoursal expectations of those who teach, write, and read in the sciences, the social sciences, and the various humanities needs to be made explicit to students in their undergraduate and graduate curricula? At what level of sophistication should such information be presented? In what instructional contexts should it be provided?

Like many sophisticated language users, Nate was able to adapt his discourse over time to achieve various intellectual social and professional ends. We do not mean to imply that he was a linguistic chameleon, as is a professional journalist who may infiltrate a wide range of discourse communities (Swales, *Article Introductions*, 7). Nor did Nate, in the process of becoming a composition researcher, abandon his previous writing community of friends and teachers. Rather, he brought bits and pieces of his experience as writing teacher to his new role as an apprentice researcher.

This is not to say that his passage does not raise some interesting questions for scholars interested in the growth of knowledge in composition studies. How, for example, do the sociopolitical constraints that govern the "manufacture of knowledge" (Knorr-Cetina) in this emerging field affect a graduate student's choice of research program? To what extent are the issues that concern composition teachers subsumed by the agendas of mentors as they join powerful research or scholarly enterprises, such as the one that we studied? How will the increasing graduate specialization in rhetorical studies and educational research affect the development of the canon within composition studies? We raise these questions because composition studies is a young field bound to be affected by the above factors.

Socialization studies such as the one we have reported above may also raise pedagogical questions that will concern composition teachers and scholars: What does learning the multiple registers and codes of various academic communities entail both cognitively and socially for undergraduate students? How does acquiring specialized literacy affect the graduate writer's world view, or his or her ethnic and gender identity? Finally, to quote Nate, what does it mean to the undergraduate or graduate student to become "sensitized to the scientific canon," or the literary canon, or the canons of the many subspecialties within these broad fields of inquiry?

It is to Nate that we turn to provide, if not an answer, an insight:

> I just need to do it if for no other reason than you have to know something from the inside before you can fairly criticize it.

NOTES

1. Our goal in analyzing Nate's enculturation and growth as a writer was to bring multiple perspectives and methodologies into play. Our analysis is based on close familiarity and participation in the CMU discourse community, on the relative detachment and objectivity afforded by the linguistic methods, and on the triangulation of our observations and interpretations. The assumptions and procedures of this eclectic methodology are elaborated in our 1988 article.

2. A more detailed account of Nate's register shifts can be found in Berkenkotter, Huckin, and Ackerman (1988).

BIBLIOGRAPHY

Bartholomae, David. "Inventing the University." In *When a Writer Can't Write,* ed. M. Rose, 134–65. New York: Guilford, 1985.

Bazerman, Charles. "Modern Evolution of the Experimental Report in Physics: Spectroscopic Articles in *Physical Review,* 1893–1980." *Social Studies of Science* 14 (1984): 163–95.

Bazerman, Charles. "Scientific Writing as a Social Act: A Review of the Literature of the Sociology of Science." In *New Essays in Technical and Scientific Communication: Research, Theory, Practice,* ed. P. V. Anderson, R. J. Brockmann, and C. R. Miller, 156–84. Farmingdale, N.Y.: Baywood, 1983.

Bazerman, Charles, "What Written Knowledge Does: Three Examples of Academic Discourse." *Philosophy of the Social Sciences* 11 (1981): 361–82.

Bazerman, Charles. "The Writing of Scientific Non-fiction: Contexts, Choices, Constraints." *Pre/Text* 5 (1984): 39–74.

Berkenkotter, Carol, Thomas Huckin, and John Ackerman. "Conversations, Conventions and the Writer: Case Study of a Student in a Rhetoric Ph.D. Program." *Research in the Teaching of English* 22 (1988): 9–44.

Bizzell, Patricia. "Cognition, Convention, and Certainty: What We Need to Know about Writing." *Pre/Text* 3 (1982): 213–43.

Bizzell, Patricia. "College Composition: Initiation into the Academic Discourse Community" [Review of *Four Worlds of Writing* and *Writing in the Arts and Sciences*]. *Curriculum Inquiry* 12 (1982): 191–207.

Chapman, David W., and Gary Tate. "A Survey of Doctoral Programs in Rhetoric and Composition." *Rhetoric Review* 5 (1987): 124–86.

Crane, Diana. *Invisible Colleges.* Chicago: University of Chicago Press, 1972.

Crookes, Graham. "Towards a Validated Analysis of Scientific Text Structure." *Applied Linguistics* 7 (1986): 57–70.

de Beaugrande, Robert, and Wolfgang Dressler. *Introduction to Text Linguistics.* London: Longman, 1981.

Dudley-Evans, Tony. "Genre Analysis: An Investigation of the Introduction and Discussion Sections of MSc Dissertations." In *Talking about Text,* ed. M. Coulthard, 128–45. Birmingham, Eng.: English Language Research, 1986.

Dyson, Anne H. "Emerging Alphabetic Literacy in School Contexts: Toward De-

fining the Gap Between School Curriculum and Child Mind." *Written Communication* 1 (1984): 5–55.

Fahnestock, Jeanne. "Accommodating Science: The Rhetorical Life of Scientific Facts." *Written Communication* 3 (1986): 275–96.

Fahnestock, Jeanne, and Marie Secor. "The Rhetoric of Literacy Criticism." Paper delivered at the Penn State Conference on Rhetoric and Composition, July 1982.

Faigley, Lester, and Karen Hansen. "Learning to Write in the Social Sciences." *College Composition and Communication* 34 (1985): 140–49.

Gilbert, Nigel G., and Michael Mulkay. *Opening Pandora's Box: A Sociological Analysis of Scientists' Discourse*. Cambridge: Cambridge University Press, 1984.

Heath, Shirley Brice. *Ways with Words: Language, Life, and Work in Communities and Classrooms*. New York: Cambridge University Press, 1983.

Heath, Shirley Brice. "What No Bedtime Story Means: Narrative Skills at Home and at School." *Language in Society* 11 (1982): 49–76.

Herrington, Anne. "Writing in Academic Settings: A Study of the Contexts for Writing in Two College Chemical Engineering Courses." *Research in the Teaching of English* 19 (1985): 331–61.

Hill, S., B. F. Soppelsa, and G. K. West. "Teaching ESL Students to Read and Write Experimental-Research Papers." *TESOL Quarterly* 16, 3 (1982): 333–48.

Huckin, Thomas. "Surprise Value in Scientific Discourse." Paper presented at the Conference on College Composition and Communication, Atlanta, Ga., 1987.

Hudson, Richard A. *Sociolinguistics*. Cambridge: Cambridge University Press, 1980.

Knorr-Cetina, Karen D. *The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science*, Oxford: Pergamon, 1981.

Latour, Bruno and Steve Woolgar. *Laboratory Life: The Social Construction of Scientific Facts*. Beverly Hills: Sage, 1979.

McCarthy, Lucille P. "A Stranger in Strange Lands: A College Student Writing Across the Curriculum." *Research in the Teaching of English* 21 (1987): 233–65.

Miles, Matthew B., and A. Michael Huberman. "Drawing Valid Meaning from Qualitative Data: Toward a Shared Craft." *Educational Researcher* 13 (1984): 20–30.

Myers, Greg. "The Social Construction of Two Biologists' Proposals." *Written Communication* 2 (1985): 219–45.

Myers, Greg. "Texts as Knowledge Claims: The Social Construction of Two Biology Articles. *Social Studies of Science* 15 (1985): 593–630.

North, Stephen M. "Writing in a Philosophy Class: Three Case Studies." *Research in the Teaching of English* 20 (1986): 225–62.

Porter, J. E. "Intertextuality and the Discourse Community." *Rhetoric Review* 5 (1986): 34–47.

Selfe, Cynthia L. "The Predrafting Processes of Four High- and Four Low-Apprehensive Writers." *Research in the Teaching of English* 18 (1984): 45–64.

Selinker, Larry, R. Mary Todd Trimble, and Louis Trimble. "Presuppositional Rhetorical Information in EST Discourse." *TESOL Quarterly* 10, 3 (1976): 281–90.

Shultz, Jeffrey J., Susan Florio, and Frederick Erickson. "Where's the Floor? Aspects of the Cultural Organization of Social Relationships in Communication at Home and in School." In *Children in and out of School: Ethnography and Education*, ed. P. Gilmore and A. A. Glatthorn, 88–123. Washington, D.C.: Center for Applied Linguistics, 1982.

Swales, John. *Aspects of Article Introductions*. Aston Reearch Reports No. 1. Aston, Eng.: University of Birmingham, 1981.

Swales, John. "Research into the Structure of Introductions to Journal Articles and its Application to the Teaching of Academic Writing." In *Common Ground: Shared Interests in ESP and Communication Studies*, ed. R. Williams, J. Swales, and J. Kirkman, 77–86. Oxford: Pergamon, 1984.

Swales, John, and Hazem Najjar. "The Writing of Research Articles: Where to Put the Bottom Line?" *Written Communication* 4 (1987): 175–91.

Toulmin, Stephen. *The Uses of Argument*. Cambridge: Cambridge University Press, 1958.

Yearly, Steven. "Textual Persuasion: The Role of Social Accounting in the Construction of Scientific Arguments." *Philosophy of the Social Sciences* 11 (1981): 409–35.