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Context, Text, Intertext

Toward a Constructivist Semiotic of Writing

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*To study writing is, over and above all else, to study acts of making meaning that are mediated through "texts." "Texts" may be defined broadly as organized sets of symbols or signs. These sets of signs or symbols may themselves function, for either writers or readers, as a collocated but unitary symbol or sign, as in the case of an individual text considered as a totality. Representing writing and texts in these ways will probably not be regarded as particularly controversial. Nevertheless, the implications of doing so simply do not figure importantly in the ways writing is currently studied, regardless of how acceptable those representations may seem in the abstract. To illustrate in a preliminary way the problems I address in the present essay, I quote a passage from Graves's *Writing: Teachers and Children at Work* (1983):*

Mary Ellen Giacobbe, a first grade teacher in Atkinson, New Hampshire, passed out blank page, hardcover books with children's names em-

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bossed on the covers the first day of school. She simply said "You can write in these books." They all did . . . in their fashion. They drew pictures, wrote their names, made columns of numbers. Some wrote phrases, made invented spellings, and several wrote sentences. The important thing is they all believed they could write. No one said, "But I don't know how." (p. 3; the ellipsis is Graves's)

As the quotation from Graves indicates, and as any perusal of the literature on the development of children's writing would confirm, young children often do not think of texts or writing strictly in print-linguistic terms. Indeed, a cynic might argue that one of the principal functions of writing instruction generally is to disabuse students of the view of texts and writing with which many enter school. Theirs might be called a cultural view that permits such symbols as words, "pictures," and "numbers" to exist side by side as writing. The position of the present essay is that a broader, more culturally accurate notion of writing and text—such as the one evidenced among the children in Jacobbe's first-grade class—is necessary for understanding the writing that adults produce and use in many situations. And the purpose of the present essay is to outline a theoretical perspective that I believe is necessary in order to account for how that writing appears to get done, what it seems to be, and how it apparently functions in contemporary culture.¹

In the eight major sections that follow, I argue for a conceptualization of writing that is predicated on broader and, I believe, more realistic understandings of text and writing than have generally informed writing research to date. In the first section, I indicate—primarily through descriptions based on case studies of situated writing—the need for the theoretical perspective that the essay as a whole advances, and I identify some of the issues with which any theory of writing must deal and some of the criteria it must satisfy. The second section presents some empirical bases for the "constructivist semiotic" of my title.² It does so primarily through a contrastive analysis of three seemingly simple texts, an analysis that is elaborated in subsequent sections of the essay. In the third section, I examine critically the role that Vygotsky's "inner speech" hypothesis has played in social perspectives on writing; and in the fourth section, I do the same for the "language after the ideational fact" criticism of cognitive perspectives on writing. The fifth section explores further the language-thought problem in terms of Saussurean semiology, urging the theoretical inadequacy of approaches to writing that are

based on Saussurean ideas. The principal aim of sections two through five is to provide multiple bases for linking, in the sixth section, the broader views of text and writing set out in the first section to Charles Sanders Peirce's semiotic theory. In the seventh section, Peirce's theory is then used as the basis for positing and illustrating a dynamic and triadic relation among three constructs—context, text, and intertext—that I argue are, in concert, crucial to the development of an adequate theory of writing. In the eighth and last section, I outline some areas of inquiry to which the proposed theoretical perspective appears to have particular relevance.

RECONCEPTUALIZING WRITING: ISSUES AND CRITERIA

The nearly concurrent publication of Nystrand's (1982) essay on "speech community," Bizzell's (1982) essay on "discourse community," Odell and Goswami's (1982) study of nonacademic writing, and Heath's (1983) ethnographic study of writing in two communities altered the course of writing research. That, of course, is obvious to anyone familiar with the literature of the past decade. And equally obvious is the fact that researchers have become increasingly preoccupied with writers and writing in relation to particular settings, what I shall refer to as situated writing.³ However provocative and informative such research is, it strikes me as a bit problematic for at least one reason.

Let me indicate the problematic nature of research on situated writing by calling attention to two areas in which it is generally believed to have contributed most to knowledge of writing. A good bit of that research may be read as an elaboration on the claim that whatever processes a writer might employ in producing a text and, hence, whatever features a given text may be said to have are ultimately determined by the particular setting within which a writer works; and some of that research may be read as an elaboration on a somewhat different claim, namely, that what writers do and what writing does is alter or change or determine, in sometimes highly significant ways, the particular settings in which a text is produced or used. The two claims are, of course, complementary and reciprocal, providing microsociological arguments favoring what may be the closest we ever get to an anthropological "fact" in writing research, namely, that just as individuals may be seen as constituents of culture,

so also is culture constructed by or out of individual persons and individual persons' behaviors (cf. Geertz, 1975; Shotter, 1981).⁴

The leap I have made from "setting" to "culture" helps call attention to what seems to be absent from studies of writing in particular settings, namely, a defensible cultural perspective on writing. Such a perspective, I would argue, cannot limit itself, as do virtually all the studies of situated writing of which I am aware, to the study of printed and spoken linguistic utterances. Although traditional language, whether spoken or recorded in print, is clearly an important component in many meaning-making activities we have come to associate with the production and comprehension of traditional alphabetic text, attending only to traditional language will not permit us to account for either the production or use of many "written texts" we all encounter on a daily basis—labels on cereal boxes, traffic signs, telephone book yellow pages, the operating manuals in the glove compartments of new automobiles, television newscasts, advertising of various types, newspaper and newsmagazine stories, articles in scholarly journals, and so on—all of which rely on nonlinguistic sign systems. It is the image of these very sorts of texts that, in my judgment, young children bring with them to school. In Western cultures generally, such texts—as well as their production and use—clearly cannot be cast aside and ignored as anomalies of no interest, as—to use Saussure's (1922/1959) terminology only somewhat metaphorically—diachronic variants that have no sure place in the great synchronic universal of writing. Moreover, as contexts of production and use increasingly authorize more such texts, probably in forms or genres not yet imagined,⁵ and as technologies render their production and use more frequent and more diffuse, such texts will become even more crucial than they are already to an understanding of writing. Thus, studying the production and use of "writing" from a perspective that privileges spoken or written linguistic systems of meaning-making and ignores other systems of meaning-making can hardly yield a comprehensive or a culturally viable understanding of "writing" or "text."

But what would a culturally viable understanding of writing entail, and what are the critical issues that it must address and the criteria it must meet? Let me first approach these questions indirectly by referring briefly to Halliday's ideas on language because they would seem to represent the best-known conceptualization to date. In *Language as Social Semiotic*, Halliday (1978) argues that language (which for

Halliday includes writing; see, for example, p. 131) is the "encoding of a 'behavior potential' into a 'meaning potential' that is, as a means of expressing what the human organism 'can do' in interaction with other human organisms, by turning it into what he 'can mean'" (p. 21). In terms of Halliday's system, "meaning potential" is realized in language acts through three (or four) "functional components": the "textual," the "ideational" (which includes the "experiential" and the "logical"), and the "interpersonal" (p. 128), all of which must operate simultaneously because "any instance of language in use 'means' in these various ways" (p. 129).⁶

I shall admit to having very hastily summarized a rich, detailed, and provocative work. Nevertheless, at least two problematic components in Halliday's account limit its usefulness in the study of writing. The first problematic component is the difference between Halliday's representation of the nature of meaning-making and his own theoretical perspective. Halliday asserts that the making of meaning in language is possible only through the interaction of its textual, ideational, and interpersonal components, and he indicates that language in use and, hence, meaning-making admit study through three distinct approaches. These approaches Halliday designates as the "structural," the "psychological," and the "functional and sociological" (p. 18), and they seem to parallel, if not correspond to, the textual, ideational, and interpersonal components of language. However, only the "functional and sociological" approach is of primary interest to Halliday.⁷ It would thus appear that given Halliday's own criteria for a comprehensive theory, his "functional and sociological" theory cannot be regarded as comprehensive. And given Halliday's recognition of the "structural" and "psychological" approaches, it would appear that Halliday himself does not regard his "functional and sociological" approach as being comprehensive. Second, Halliday's approach—although certainly broad in terms of its dealing with the social and functional dimensions of language (including writing)—does not provide a way to account for the production or use of a large variety of texts that appear in contemporary culture, particularly those that embed nonlinguistic symbol systems.

But such theoretical problems are not, as I have suggested, unique to Halliday. All current approaches appear too narrow to permit a synthesis of the textual, cognitive, and social perspectives that Halliday suggests would be necessary for a comprehensive theory of language and, hence, writing, and no current theoretical approach to or per-

spective on writing accounts for writing as it is produced and used in contemporary culture. Such comprehensiveness cannot be found among general theoretical approaches to writing, including those of Britton, Burgess, Martin, McLeod, and Rosen (1975), D'Angelo (1975), Kinneavy (1971/1980), and Moffett (1968)—which are largely concerned with classifications of texts and relations among writers, readers, and subject matters through the vehicles of texts—or among approaches such as Beale's (1987) and Bazerman's (in press) that offer alternatives to or modifications of Kinneavy's theory. Nor is comprehensiveness evident in cognitive approaches to writing, as virtually all cognitive theorists recognize. Among the cognitive approaches—which advance models of discourse production and/or of the knowledge required for discourse production—I include those of Beaugrande (1984), Bereiter and Scardamalia (1987), Bracewell, Frederiksen, and Frederiksen (1982), and Flower and Hayes (1981, 1984).

The principal criteria that a theory of writing would need to meet, then, are two: (a) comprehensiveness with regard to stipulating a means of bringing together the textual, cognitive, and social and (b) viability with regard to how writing is defined operationally (i.e., in practice) through its production and use in the culture. To indicate as specifically and concretely as possible the sorts of real-world issues involved in meeting those two criteria, I offer the following six examples of situated writing, which I refer to frequently over the course of the essay but which may at this point be read either in their entirety or simply skimmed to develop a general sense of the bases for particular arguments I advance in subsequent sections of the present essay:

Example 1. An undergraduate student, in the process of putting together a "guidebook to indigenous plants" for an upperdivision horticulture course, measures and photographs varieties of native grasses, wildflowers, shrubs, and trees and makes "rough notes" and "quick sketches" that "represent information about the environments" peculiar to each of the plants photographed. When he completes the "guidebook" several weeks later, the "text" consists of traditional alphabetic writing (i.e., orthographic sentences and paragraphs), photographs, line drawings, numbers, lists, labels, and "pointers" linking alphabetic code with components of line drawings and photographs.

Example 2. The attorney of record for a municipal utility district (which is a government entity in Texas run by a popularly elected

board of directors) reviews four handwritten (in pencil and small cursive), legal-sized sheets of "notes" he made during a portion of a regularly scheduled public meeting of the board. The particular part of the meeting lasted 1 hour and 38 minutes, during which time 11 people spoke, and it focused on a request to the board by a developer (Company X) to increase the allocation of water and wastewater service to one parcel of land and to reduce the allocation to another. Both parcels were owned by Company X, and a planned sale of the second parcel to another developer was made contingent on Company X's ability to effect a transfer of wastewater service from the first parcel to the second. On the second page of the lawyer's "notes" appear (a) a table listing the district's commitments (specified through contractual agreements) for water and wastewater service to "within-district" and "out-of-district" land owners and/or land parcels; (b) a sort of combination tree diagram and flow chart depicting relations between—on one hand—Company X (including its principal owners and known investors), its consulting law firm (including the names of lawyers), and its consulting engineering firm (including engineers' names) and—on the other hand—the other "within-" and "out-of-district" development companies (including their principal owners and known investors), their consulting law firms (including the names of lawyers), and their consulting engineering firms (including engineers' names); and (c) a series of dotted lines that represent what the attorney knows about land-sale transactions currently planned or under contract. After reviewing his own "notes," the lawyer reads those of his paralegal and asks her about certain statements she had recorded. Subsequently, he calls the general manager of the district and the president of the board to confirm that the board had taken no action on the request. The lawyer then writes a paragraph for the official minutes of the public meeting. The paragraph consists of a single sentence: "The Board considered a request from [Company X] to reallocate LUEs [i.e., "living unit equivalents," a measure of wastewater capacity in a sewer line] from [tract of land A] to [tract of land B]." During a subsequent meeting, the board approved the minutes without emendation or discussion. Although representatives of Company X attended the board meeting during which the minutes were approved, they did not then or ever again request the board to transfer LUEs from tract A to tract B. During that subsequent meeting, however, Company X did request the board to transfer LUEs from tract A to tract C, the sale of which was also contingent on Company X's

securing additional wastewater service for *that* tract. In less than 5 minutes, the board heard the request and unanimously approved the transfer.

Example 3. Under the direction of a vice president of a manufacturing company, a group of five department managers and seven "assistants" construct, during weekly and (sometimes) biweekly meetings over a period of over 3 months, a form for tracking raw materials through the company and (once the materials are transformed into "finished products") to eventual customers. The meetings typically include several "heated exchanges" among representatives of the various departments, a good bit of finger pointing in attempts to assign departmental responsibility for the return or rejection of finished products (most of which are manufactured from customer-generated "spocs") by particular customers, and the frequent use of a chalkboard to "sketch out" the possible new relationships among departments and personnel that the completed form would eventually mandate. The vice president does not participate (except as a monitoring presence who makes no judgments) during any of the "heated exchanges" or finger pointing, and he produces no original text himself, even though, when first asked by others in the meetings, he sometimes orally critiques portions of the different versions of the form that emerge across time. Neither do any of the department managers produce original text, but they do write suggested changes on each successive version of the form. One person "writes" each successive version of the form.

Example 4. As she begins "writing" a course paper about a meeting that occurred at a local company, a graduate student constructs a graphic that she says "represents the speaking order of, the types of nonverbal communication exhibited by, and the flow of information among the seven participants." She finishes the course paper 23 days later.

Example 5. During a particular day, a civil engineer works on seven distinct "projects"—all of which either presently exist as drafts of "letters," "reports," or "proposals" or will take one of those forms. As he attends to various aspects of these projects, the engineer, among other things, (a) calls an attorney for a city's planning department about the status of a pending zoning ordinance, (b) writes a note instructing his personal secretary to call a bonding company in order to find out "specifics" about the "performance record" of a construction company, its owners, and its principal subcontractors, (c) makes

several lists of changes to be made on three sets of "blue lines" he reviews, (d) writes two entries for "meetings" on his desk calendar after talking with four people on the telephone, (e) "writes" a "subroutine" to compute the appropriate size for a wastewater "trunk line" through a proposed housing development that he describes as "topographically troublesome," and (f) gives another secretary oral instructions for "making" (i.e., labeling) a set of file folders. At different times during the next 4 1/2 months, the documents—all but two incorporating more than one symbol system—related to each of the seven projects are completed.

Example 6. The general manager of a municipal utility district directs his office manager to call the district's consulting engineer, legal counsel, financial counsel, and board president and to ask each for items to be included on the agenda for a public meeting of the district's board of directors, an agenda that must (according to state law) be published in a local newspaper and posted at the county courthouse and at the meeting place at least 10 working days prior to the meeting. On three of the four lists that his office manager presents to the manager, the phrase "tax problem," "tax increase," or "taxes" appears as either the first or second item; and on the fourth list, "tax deadline" appears as the last and ninth item. When the general manager writes the meeting agenda (which consists entirely of less-than-clause syntactic structures), he makes no reference to taxes in any of the 24 items; but for the penultimate item, he writes "Budgetary considerations." Because of its place on the agenda, the item is not taken up until 11:35 p.m. the night of the meeting and only one taxpayer in the district learns of a pending tax increase, and she does so only after about 40 minutes into the discussion among the board members and their consultants, all of whom talk about, for example, "budgetary" or "fiscal needs" and not "taxes."

These examples of situated writing come from a series of limited observational studies I have done since 1984 of writers in different school and workplace settings (see Witte, 1988, 1989, 1991a),⁸ and they illustrate the multiple boundary problems that I believe anyone who studies situated writing will ultimately have to deal with. The sorts of "writing activities" engaged in by the particular writers described in the previous examples as well as the multitude of functions "writing" served are not, given the writers I have studied, at all uncommon. Even though the activities and functions may not be unusual, they do raise certain theoretical questions about the objects of study in writing

research, about the boundaries that define critical constructs that are either named or implied in writing research, and about the limitations of methods used to study situated writing.

One of the overarching questions the examples raise is "Where does one draw the line between writing and nonwriting, whether the word *writing* be understood in terms of writing process(es), social or cognitive, or in terms of written products?" For example, should the undergraduate student's "guidebook to indigenous plants"—which ultimately consisted of traditional alphabetic text, photographs, line drawings, and so on—be studied as both writing and nonwriting, even though the student, as well as his professor and fellow students, regarded the finished product holistically? And is the graduate student, who is preoccupied with making a graphic as she *begins* "writing" a course paper, not really writing? Are the "lists," the "notes," and the "subroutine" that the engineer "writes" unimportant to an understanding of "writing" because they are not extensive and traditional alphabetic texts and because they do not appear verbatim in the finished documents he ultimately writes? Is the engineer not writing when he gives detailed instructions to a secretary for "labeling" file folders containing documents that he will refer to many times as he inches toward completing two of the in-progress documents? Is (are) the undergraduate student's "writing process(es)" to be studied only with reference to the production of extensive and traditional alphabetic text, or is it desirable to think of his photographing plants and his making of line drawings as also in some sense writing? And what of the graduate student, the engineer, and the lawyer—all of whom make "drawings" as they "write"?

The undergraduate's "guidebook" also raises questions about beginnings and endings with respect to writing process(es), as do the engineer's seven "in-progress" texts, the lawyer's construction of the item for the minutes, the graduate student's writing of her course paper, and the collection of individuals at work on the company form. How should the protracted composing process(es) of such writers be studied? Should the beginning and ending of protracted composing be marked by the production of alphabetic text?

Although all six of the writers whose activities I have described engaged extensively in different sorts of collaboration,⁹ four of the examples above call attention to the important role collaboration plays in much situated writing, collaboration that need not be mediated through linguistic symbols. How do we distinguish among the

text(s) the lawyer wrote on paper (e.g., his notes, his graphics, the sentence for the "official minutes") and the intersecting sets of spoken and written texts, as well as the unspoken and the unwritten texts, during the public meeting, the "notes" on the meeting made by his paralegal, and the "memories" of those with whom he spoke before drafting the minutes? Who is actually "the writer" of the lawyer's single-sentence "summary" for the official minutes? And having somehow answered that question, what shall we call the others who figured importantly in the situation(s) out of which or within which the lawyer worked? Similar questions also arise when we think about the form "written" for tracking raw materials through the manufacturing company, the agenda item written by the general manager, and the multiple collaborations in which the engineer was involved through, for example, the notes and lists he wrote, the telephone conversations in which he engaged, and the oral directions he gave.

The examples raise other questions about "situation" as well. In the case of the attorney, we might ask questions such as the following: What elements of "situation" are embedded in the single-sentence entry in the "official minutes" and how are they distinguishable? Do elements of situation embedded in a written statement also imply nonembedded elements? Can we know which situational elements are important and which unimportant? In the absence of telltale conversational exchanges, how do we explain the seemingly enigmatic behavior of the developer who never challenges the board's "decision" not to take action on his request or the seemingly equally enigmatic behavior of a board that spent 1 hour and 38 minutes of a four-hour meeting arriving at "no decision" on a very specific request and that, during a subsequent meeting, took less than five minutes to approve a similar request? In the case of the collaborative writing of the form in the manufacturing company, why did the writing take over three months and why was a vice president in charge of the meetings?

I would argue that no matter how we might ultimately decide to answer some of these questions, it is clear not only that meaning-making is central to any conceptualization of writing but also that meaning-making functions on several levels through all the activities and texts referenced in or implied by the six examples, regardless of the symbol system through which those texts and activities were mediated. But how do we represent the impacted nonverbal meanings signaled by texts like the undergraduate student's "guidebook,"

the lawyer's single sentence, or the general manager's "Budgetary considerations"? And how do we decide whether these signaled meanings from the perspective of the individual writer(s) coincide with those constructed by the various readers—whether intended or not—of those texts?

These are not unimportant questions inasmuch as they point to the necessity of making some fairly fundamental decisions about what we mean when we say we are studying writing, about what we mean when we refer to "the writer" or "the reader," about what we mean when we refer to "written texts," about what we mean when we say that we wish to understand writing ability, about what we mean when we say we want to understand writing in terms of discourse communities, and about what we mean when we say we want to understand the cognition of composing. In fact, the questions posed above are so important and the decisions they imply so fundamental that one might expect them to be discussed both regularly and thoroughly in the literature.

But most of them are not.

My sense is that such questions are not usually discussed because, at present, researchers do not have a theory capable either (a) of bridging the gaps among the textual, cognitive, and social dimensions of writing or (b) of addressing questions that arise with regard to the nature of writing, whether *writing* be defined as process(es) or product(s). In the absence of such a theory, the debates (polemics, actually, in some cases) about data and methodologies that surface with some frequency nowadays in professional publications and during professional meetings seem a bit premature and a lot shortsighted. There are, as I think the six examples of situated writing demonstrate, a host of much more fundamental issues and questions than are presupposed by current debates about data and methodologies. I would argue that if we are to understand the course paper that the graduate student *begins* to write by drawing a graphic, or the processes involved in the undergraduate's writing of his "guidebook," or the situational determinants of the lawyer's single-sentence contribution to the minutes, or the sorts of thinking represented in the activities—all collaborative in some sense—of the lawyer, the students, the engineer, the government manager, and the group constructing the tracking form, *then* we need to look beyond this or that flavor of linguistic science for our understandings of both "texts" and the meaning-constructive acts in which people engage as "writers" and "readers."

Previously in the present essay, I specified comprehensiveness and cultural viability as the two criteria that a theory of writing must meet. Let me summarize briefly what I think the examples above say about what those minimal criteria include. First, the examples suggest that any conceptualization of writing must be able to accommodate not only the production and use of extensive alphabetic texts but also the production and use of minor (e.g., lists, labels, notes) forms of "writing" and texts such as engineering proposals, guidebooks to indigenous plants, and scholarly articles, all of which typically employ more than one symbol system. Second, the examples suggest that any conceptualization must be able to account for both the meaning-constructive and social-constructive dimensions of writing, regardless of whether writing be viewed as a process or a product and regardless of whether the writer traffics in linguistic or nonlinguistic symbols. Third, the examples suggest that any conceptualization must be able to account for both the protracted and the collaborative nature of composing regardless of the symbol system the "writer" might employ at a given time. In my view, none of the perspectives by which meaning-making has been treated in writing research and none of the perspectives into which writing research is currently collapsed meets these three criteria, in large part because those perspectives all presuppose verbal language as the only sign system relevant to the study of writing.

RECONCEPTUALIZING WRITING: AN EXPLORATION

The most straightforward way to set out the constructivist semiotic—the triad of context, text, and intertext that I believe the study of writing demands—is to illustrate concurrently why that semiotic is needed and what it consists of. Thus in the present section, I analyze three examples of writing (see Figure 1), which some might not be willing to call writing at all but which, nevertheless, do all the things we often expect written texts to do.

The three examples of writing in Figure 1 are, indeed, grocery lists. I collected them—along with 51 others—in July and August of 1987 at a Lucky Foods store on the southwest corner of Pacifica Avenue and De Anza Boulevard in Cupertino, California. I include the three texts in the present discussion for two reasons. First, they allow me to illustrate fairly clearly the general theoretical principles that are needed

we know that they are grocery lists and not, say, lists recording the inventories of kitchen cabinets?

Answering such questions will inevitably lead us, I believe, to what Malinowski (1923/1946), in his examination of the influence of context on meaning, suggested might be called the cultural context, a notion later developed more thoroughly by Sapir (1961) and used extensively by both Halliday (1978) and Kinneavy (1971/1980) in developing their respective theories. For Malinowski (1923/1946), who was interested in "the analysis of a primitive linguistic text," all "language is essentially rooted in the reality of culture, the tribal life and customs of a people, and . . . it cannot be explained without constant reference to these broader contexts of verbal utterance" (p. 305). According to Malinowski, an analysis of the relation between "interpretation" and the "culture to which the language belongs"

shows convincingly that neither a Word nor its Meaning has an independent and self-sufficient existence. The Ethnographic view of language proves the principle of Symbolic Relativity as it might be called, that is that words must be treated only as symbols and that a psychology of symbolic reference must serve as the basis for a science of language. Since the whole world of "things-to-be-expressed" changes with the level of culture, with geographical, social and economic conditions, the consequence is that the meaning of a word must be always gathered, not from a passive contemplation of this word, but from an analysis of its functions, with reference to the given culture. Each primitive or barbarous tribe, as well as each type of civilization, has its world of meanings and the whole linguistic apparatus of this people . . . can only be explained in connection with their mental requirements. (1923/1946, p. 309)

Malinowski's view of culture would appear compatible theoretically with that of Lotman (1977b), who defines culture both broadly and narrowly as the "non-hereditary memory" (p. 213; italics in original) of a people or group. From my perspective, Lotman's "memory" can be constructed only through the joint operation of what Malinowski calls "the principle of Symbolic Relativity" and what he calls "a psychology of symbolic reference," a "principle" and a "psychology" that would need—it seems reasonable to assume—to be extended at some point to the (cognitive) operations by which an individual's memory organizes itself in response to particular situations. For the time being, however, defining culture and its construction in the terms used by

LIST 1	LIST 2	LIST 3
bread	carrots	mushrooms
Hamburger	canned milk	broc—
cigs	syrup	Fl lettuce
TP	cottage cheese	B sprouts
del Monte	canned pears	6 kiwi
eggs	lettuce	1 pineapple
marg	milk	milk
Soup	eggs	cheese
cherrios	sugar	cleo
orange juice	aspirin	peanut clus
Buns		granola
Milk		Pepsi
dark brown sugar		designer water
		Windex
		Cheer
		sirloin - 4lb
		gr beef
		white wine
		cold cereal
		candles
		napkins
		French bread
		True Blues

Figure 1: Three Examples of Writing

in order to account for the production and use of situated writing. Second, they were all used for the same purpose in the same setting, even though each was written by a different writer. That the texts were used for the same purpose in the same setting makes them more comparable than any other set of example texts from the various contexts for writing that I have studied.

If people who have attended talks and lectures in which I discussed these or other grocery lists are any indication, few, if any, readers of this essay will have failed to recognize the examples in Figure 1 as grocery lists, even though the appearances of those lists are altered somewhat by the typesetting. But that recognition raises the question of how we know the examples are lists and not random collections of names of things. And apart from the fact that I indicated there are three lists and labeled them as such, how do we know that they are not, for example, one list divided into three parts? More particularly, how do

Malinowski and Lotman is adequate because doing so does not preclude (a) the possibility of an individual having membership in more than one cultural group, (b) the possibility of cultural groups becoming embedded within or overlapping one another, or (c) the possibility of individual persons each having a "non-hereditary memory" that is in some ways distinct from the "memory" of the larger group, which is a prerequisite not only for particular sorts of discourses such as arguments but also—and more fundamentally—for the existence of the "self" as in any way distinct from the "other."

Because we view the grocery lists through culturally shaped ways of seeing—that is, in terms of "non-hereditary memory"—we infer that the lists are not random collections of names (i.e., nonpurposive, nonfunctional collections of names). We know that it is common in many parts (but certainly not all) of North America for people to make such lists before going to the supermarket. Similarly, we infer that the lists do not represent the contents of kitchen cabinets because very rarely do people in North America construct such inventories in writing. In addition, we infer that the lists are not really a single list divided three ways because we know it is unlikely that a single grocery list would repeat words (e.g., "milk"), use different terms (e.g., "marg" and "oleo"; "hamburger" and "gr[ound] beef") to refer to the same things, or (perhaps, less certainly) employ three different styles of capitalization. Except for the "picture" (a discussion of which I shall postpone for the time being) at the bottom of the second list, the three grocery lists do not appear unusual at all.

If the context of culture allows us to recognize these three samples as grocery lists, I would argue that it does so in part because, as Kinneavy (1971/1980) points out, "no text is autonomous—it exists within a biographical and historical stream." This is so because, as Kinneavy also notes, "Language is, after all, only a part of life" (p. 24). The existence of texts "within a biographical and historical stream" is part of what Kinneavy discusses, in terms of the aims of discourse, as "ethnologic" (pp. 129, 249), a notion that is not, as Jolliffe (in press) points out, extensively developed by Kinneavy.¹⁰ In the language currently fashionable, we might say that, from the standpoint of the cultural context, we recognize the texts as grocery lists because they relate "intertextually" to the individual set of grocery lists that each of us has used and/or written, none of which could be represented as a "source of" or a "determinant for" any of the three lists, their writing, or their writers. At its most basic level, "intertextuality" refers to a

social fact, namely, as Todorov (1984) puts it, that "there is no [meaningful] utterance without relation to other utterances" (p. 60). The concept of intertextuality is often traced to Bakhtin's notion of "dialogized heteroglossia" (1934-35/1981, p. 273), which is central to Nystrand's (1986, 1989) theory of reciprocity between writers and readers, a theory Nystrand has more recently (1990) described as a "social-interactive model of writing."¹¹ But the term *intertextuality* used to refer to the phenomenon of "dialogized heteroglossia" derives from Kristeva, who uses it—largely following Bakhtin's representation of the "dialogic"—to argue that "each word (text) is an intersection of word (texts) where at least one other word (text) can be read," that "any text is constructed as a mosaic of quotations," and that "any text is the absorption and transformation of another" (1969, trans. 1980/1986, p. 37).

Thus we might say that we recognize the three samples as grocery lists because they relate not only to one another but also to a culturally enacted stream of discourse that allows people to construct particular meanings through particular sorts of texts, in this case grocery lists. That is to say, we infer function and meaning for the three texts because they are part of an intertextual network that can be characterized by what Halliday (1978) calls a "meaning potential" (p. 19) and because individuals are capable of constructing meaning for them. Inasmuch as each of us (or most of us, at any rate) is able to recognize the three lists in Figure 1 as grocery lists, the concept of intertextuality can be seen as an hypothesis about the source of the prior knowledge that has long been recognized as critical to both reading and writing processes.¹² That knowledge would seem unlikely to have been "acquired" (and I don't much like that word) independently of the operation of what Malinowski (1923/1946) called "a psychology of symbolic reference."

I have now used all of the three constructs—context, text, and intertext—that I indicated earlier would figure importantly in the conceptualization of writing I believe is necessary. In the following section, I use the examples of the three grocery lists to probe somewhat more deeply into the constructs themselves and to align them more closely with writing and texts as those phenomena seem to be understood operationally in contemporary Western culture. Achieving those ends will ultimately lead to an assessment of how Vygotsky's notion of "inner speech" has been appropriated into the literature advocating a social perspective on writing.

RECONCEPTUALIZING WRITING: THE NATURE AND ROLE OF "INNER SPEECH"

I have indicated that each of the three texts, the grocery lists of Figure 1, has a meaning potential that might be represented in terms of something like referential meaning and in terms of function, and I suggested that we could construct referential meaning for the items on each list and infer a function for the three lists because they relate intertextually within a larger cultural context that each of us has come to know through something like "a psychology of symbolic reference." But there is more to it than that. For the context of culture allows us not only to construct and use texts like grocery lists but to do so in particular situations. Hence another of Malinowski's (1923/1946) key concepts, "the context of situation" (pp. 306 ff.). Examining the three grocery lists a little more closely in terms of the "context of situation" will reveal some additional and, I think, helpful ways of thinking about how context, text, and intertext are related.

The first thing to note is that these three texts each served two constructive functions, which are mediated through signs, the majority of which are alphabetic linguistic signs but also one graphic sign. These are matters to which I shall return shortly. But with regard to function, the three lists served as each writer's symbolic construction of what was missing from or needed for, as it were, a kitchen cabinet, and they served to construct the social activity of going to the grocery store, initially in anticipation of doing so and eventually as a sort of guidebook for the particular users, which in the case of the second list was a person different from the writer. We might even say that the grocery lists are fairly concrete examples of what has been called "genre as social action" (cf. Miller, 1984; see also Halliday, 1978, and Swales, 1990).

With regard to "genre as social action," however, the three texts are very different in terms of what they enabled their users to do. Compare, for example, List 1 and List 2 with List 3. There are, of course, some obvious differences: Lists 1 and 2 are shorter, and List 3 names not only more items but also a larger variety of items. But there is another important difference that is less obvious, even though some readers will undoubtedly have already noticed it: Unlike Lists 1 and 2, List 3—at least down to the term *white wine*—clearly groups certain items (e.g., the first six items are all fresh fruits and vegetables; "sirloin" and "ground beef" appear one after the other).

But even that is only a part of the story, which cannot be discerned from the text when it is separated from its use: List 3 is also organized entirely in terms of the sequence of aisles (11 of a total of—if I recall correctly—16) that a particular shopper (whom I will call Marilee) encountered when she entered Lucky's through the northeast door; moreover, the items on List 3 are in the exact order she encountered them when going up and down the aisles. In other words, her list served the function of a map through the store in a way that neither List 1 nor List 2 could for their respective users. In fact, List 2 was not even written for use in the particular grocery store in which it was used, and—according to their users—both List 1 and List 2 were written over the course of at least 3 days each. What is particularly interesting in regard to List 3 is that it was written less than an hour before I spoke with Marilee at the grocery store. According to Marilee, during a period of about 50 minutes before she arrived at Lucky's, she (a) helped her youngest child get ready for day school; (b) opened and read her mail, including a letter from her mother, on the back of which Marilee wrote her grocery list; (c) delivered her child to day school; and (d) wrote a grocery list that mapped precisely her route through the grocery store. Now although it could be argued that the particular items named on Marilee's list represent thinking in words, it is far more difficult to make such an argument for either the organization of Marilee's list or the way her list organized the activity of grocery shopping. In fact, when I asked Marilee what she was thinking about as she wrote her list, one of the things she told me was, "I just see the inside of the store, the aisles and where everything is." Thus, although Marilee's knowledge may have had a semantic base, she seems to have represented some portion of that knowledge mentally, in non-verbal terms.

Not unrelated to the foregoing hypothesis about the sort of internal representation of knowledge and the sort of thinking that Marilee probably did in constructing her grocery list are the multiple instances of nonverbal representations involved in the writing processes and written products of the six writers referenced near the beginning of this essay and the "pictorial" sign that appears at the bottom of List 2 in Figure 1. That nonverbal sign, "written" by a Portuguese immigrant, appeared on List 2 because, according to her husband who used the list, she had "no word" for the object the line drawing represents, a common household plunger used for unstopping a clogged sink. The possibility (*probability* is perhaps the better word) that Marilee's

mental representation of the grocery store could exist independently of any verbal thought, that her "visual" representation of the store is not marked by the words on the list but by the order of their appearance (which is only incidentally a linguistic phenomenon), and that the pictorial sign at the bottom of List 2 was "read" as meaningful in the same way as the words on the list were should indicate that what allows texts to mean cannot be altogether explained by their connection to verbal structures (e.g., words) *per se*. Rather, what allows a text to mean for an individual user is its link, mediated *vis-à-vis* any shared symbol system, to an underlying and necessarily internalized semantic network. Any symbol system would, I suggest, allow us to think, to use Vygotsky's (1934/1986) words, in "pure meanings" (p. 249). Thinking in "pure meanings" is, of course, what Vygotsky calls "inner speech" (p. 249). My sense is that "inner speech" needs to be construed more broadly than it is in the literature advocating a social perspective on writing. And in this regard, I would argue that Vygotsky himself probably thought of "inner speech" more broadly and, further, that the term *inner speech* might never have been used if the project Vygotsky undertook had not been to address the inadequacies of Piaget's (1926) concept of "egocentric speech."

However speculative the foregoing remark is with regard to the development of Vygotsky's own theory of "inner speech," it seems unlikely that for Vygotsky "social speech" is the only semiotic process out of which develops the "inner speech" that permits the development of "higher intellectual functions" (p. 166). Indeed, my sense is that Vygotsky himself recognized that although "social speech" contributes in powerful ways to the development of "inner speech," so also do other semiotic processes. For example, in writing of "the process of concept formation in general," Vygotsky (1934/1986) references an "experimental study [that] proved that it is a functional use of the word, or any other sign, as a means of focusing one's attention, selecting distinctive features and analyzing and synthesizing them, that plays a central role in concept formation" (p. 106; *italics mine*). And three sentences later he writes, "Words and other signs are those means that direct our mental operations, control their course, and channel them toward the solution of the problem confronting us" (pp. 106-107; *italics mine*). It is important to note that the expressions "or any other signs" and "other signs" do not support an argument that Vygotsky merely uses the term *sign* as a synonym for *word*.

Subsequently, Vygotsky urges that once the "elementary functions" become

involved in the process of concept formation, they appear in it in an entirely new form. They enter it not as independent entities, with their own logic of development, but as subordinated functions whose performance is mediated by *word or sign*. It is in this new role that these functions contribute to the process of problem solving, simultaneously entering into such new interrelationships with each other that only can reveal their true functional psychological meaning. (p. 107; *italics mine*)

However, in the sentences immediately following the above quotation—in a move quite at odds with his words-and/or-signs idea—Vygotsky writes:

We may say, therefore, that neither the growth of the number of associations, nor the strengthening of attention [as in Vygotsky's treatments of Muller, p. 106], nor the accumulation of images and representations [as in Vygotsky's treatment of Bühler, p. 106], nor determining tendencies [as in Vygotsky's treatment of Ach, p. 106]—that none of these processes, however advanced they might be, can lead to concept formation. Real concepts are impossible without words, and thinking in concepts does not exist beyond verbal thinking. That is why the central moment in concept formation, and its generative cause, is a specific use of words as functional "tools." (p. 107)

Thus whereas initially Vygotsky posits a words-and/or-signs explanation of semiotic mediation, he subsequently adverts, for reasons not at all obvious, to a words-only explanation.

I have quoted Vygotsky at length to suggest that Vygotsky is, first, not entirely consistent in his explanation of semiotic mediation and, second, not entirely consistent in his explanation of "verbal thinking" or "inner speech." In three places in the material quoted, Vygotsky (a) places words and signs on equal footing with respect to explaining the "process of concept formation" through "inner speech" or "verbal thinking," (b) then dismisses the arguments of Muller, Bühler, and Ach with a "Therefore" that follows logically from his distinctions between words and signs, and (c) then asserts—in a move quite at odds with what he had just noted about the role words and/or other signs play in semiotic mediation—that "Real concepts are impossible

without words, and thinking in concepts does not exist beyond verbal thinking" (p. 107). But Vygotsky's shift to "words" as the only necessary components of concept formation (and, hence, ultimately "verbal thinking" and "inner speech") is short lived because four paragraphs later he writes that "learning to direct one's own mental processes with the aid of words or signs is an integral part of the process of concept formation" (p. 108; italics mine) and, further, that the "process of concept formation, like any other higher form of intellectual activity" and "unlike the lower forms, which are characterized by the immediacy of intellectual processes, this new activity [i.e., "the process of concept formation"] is mediated by signs" (p. 109; italics Vygotsky's).¹³

Although it may be true that in other sections of Vygotsky's *Thought and Language* sign does not generally stand next to word, I suggest that there is some evidence that Vygotsky was not entirely clear in his own mind whether his response to Piaget's "egocentric speech" could be formulated in strictly verbal terms whereby "social speech" (primarily one dimension of speech, namely, words) becomes the only social semiotic that goes internal via the development of "inner speech." My sense is that Vygotsky's own uncertainties about his hypothesis admit support from a number of different directions.

One sort of support comes from the work of Bower (e.g., 1989) over the past two decades or so in the area of infant learning. Bower and his colleagues have been able to demonstrate that infants, even before they learn speech and, in some cases, even before they can hold their heads up, are capable of performing certain perceptual and motor tasks that presuppose "logical" reasoning through the use of such abstract categories as negation, conjunction, similarity-difference, and condition. Bower's experiments, in concert with his success in programming a computer to mimic the "logic" demonstrated by babies in performing such tasks, lead Bower (1989) to remark that although he does "not think for a moment that babies think in English," there is evidence that "their thought is propositional" (p. 103). If a baby's thought is propositional, it is so because it is organized semantically, but neither its semantic base nor the "logical" operations performed on it during the tasks could have been constructed vis-à-vis speech. Bower's experimental evidence of very young children performing logical operations on a hypothesized propositional base cannot be explained if abstract thinking depends on the prior development of "social speech," if abstract thought can be mediated only through verbal signs, and if internal representations of knowledge

consist entirely of "word meanings" constructed interactively through "social speech."

Second, there is also the sort of evidence that comes from works such as Arnheim's (1969) *Visual Thinking*, which sets out to "extend the meaning of the terms 'cognitive' and 'cognition' to include perception" (p. 13). Although scholars such as Latour (1986/1988) dispute his claim, Arnheim argues that there is "no way of withholding the name of 'thinking' from what goes on in perception." It is Arnheim's position that "no thought processes seem to exist that cannot be found to operate, at least in principle, in perception." According to Arnheim, "Visual perception is visual thinking" (p. 14) and, in contrast to Vygotsky, "In the perception of shape lie the beginnings of concept formation" (p. 27), an assertion that finds some support in the work of Bower discussed above. Although it would be wrong to make too much of the matter, not unrelated to the notion of "visual thinking" is the fact that the origins of different of writing systems are frequently traced to representations displaying much higher iconographic values than most modern-day scripts (cf. Baron, 1981; Gelb, 1952; Marcus, 1980/1982; Schmandt-Besserat, 1978/1982). Moreover, as Eisenstein's (1979) account of changes effected by the invention of printing shows, the printing press made visual images just as widely accessible as printed words.

Third, linking the ability to think in "pure meanings," which is how Vygotsky characterizes "inner speech," to origins in "social speech" raises a question that was suggested to me in reading Baron's (1981) *Speech, Writing, and Sign*. That question is—given the supposed origin of "inner speech" in "social speech"—whether "higher intellectual functions" could ever develop among those of us who are born without the natural ability to hear or to speak, or those—such as Helen Keller—who are also born without sight. Accounts of the development of "inner speech" through "social speech" alone would suggest not.

Fourth, a large body of anecdotal evidence suggests that rather large "thoughts" can, indeed, be thought without recourse to "verbal thinking." Sebeok (1991), making much of the best known of these anecdotes, is worth quoting:

Einstein, for one, it will be recalled, constructed his model [of the universe] from nonverbal signs, "of visual and some muscular type," and labored long and hard "only in a secondary stage" to transmute this creation into "conventional words and other signs," so that he could

communicate it to others. "The words or the language, as they were written and spoken," Einstein wrote in a letter to Hadamard . . . , "do not seem to play any role in my mechanism of thought. The psychical entities which seem to serve as elements in thoughts are certain signs and more or less clear images which can be 'voluntarily' reproduced and combined." (p. 57)

Sebeok also makes reference to similar accounts from Mozart and Picasso. Partly on the basis of such accounts, Sebeok asserts that "this kind of nonverbal modeling is indeed primary, in both a phylogenetic and in an ontogenetic sense" and that "language itself, is, properly speaking, a secondary modeling system" (p. 57).

For Sebeok, another part of the explanation of why language is a "secondary modeling system" is that semiotic systems, indeed semiotic mediation itself, have their origins in natural semiotics ("zootic semiotics" or "endosemiotics"; see Sebeok, 1976) such as those by which, say, our immune systems distinguish between the good and the harmful, between what belongs and what does not belong (see Schmeck, 1974, p. 36; quoted in Sebeok, 1991, p. 37 [see also, pp. 151-158]), between—dare we claim—the "self" and the "other." (Incidentally, following several other writers, Nöth's [1990, p. 13] etymological history of *semiotic* and related words associates their early use with a branch of medicine because Galen referred to medical diagnosis as *semiosis*.)

Finally, a number of other studies suggest the need to reach beyond the notion that higher-order thinking is necessarily dependent on the internalization of "social speech." Not unrelated, I think, to accounts such as Einstein's regarding nonverbal thinking is Gardner's (1983, 1985) recent work—particularly *Frames of Mind: The Theory of Multiple Intelligences* (1983), in which Gardner fairly convincingly argues for types of intelligence that seem not to depend on "verbal thinking" for either their existence or their evolution. Also related to Einstein's account, and to Sebeok's contention that language is not the "primary modeling system," is the plethora of examples that Latour (1986/1988) and other writers included in Lynch and Woolgar's (1988) *Representation in Scientific Practice* provide of visual images constructed or discovered through scientific activity determining new ways of speaking about the world. In this regard, it is fascinating to read Gould's (1989) account of how new ways of "seeing" the iconographies of fossils found in the Burgess Shale of British Columbia led to new ways of "thinking" and "talking" about evolution and the nature of history.

What may appear to some readers to have been an unnecessary digression on or as a needless dispute over attempts to link the development of "inner speech" (i.e., the development of the ability to think in "pure meanings") solely to "social speech" was necessary because such ideas appear to figure importantly in recent representations of the "social" in writing (e.g., Bizzell, 1982; Faigley, 1985, 1986, 1989). In such instances, the following syllogism obtains: All language is social. Thought is impossible without language. Therefore, all thought is social and linguistic. "Inner speech," with its hypothesized source in "social speech," is increasingly linked with Bakhtin's notion of the "dialogic" (see Cazden, 1989; Emerson, 1981/1986; Wertsch, 1985; Wertsch & Stone, 1985) and the combination of Vygotsky and Bakhtin used (e.g., Faigley, 1985, 1986, 1989) to justify essentially a "social" approach to the study of writing that consistently ignores everything nonverbal both in text and thought. My critical examination of the origin of "inner speech" and my suggestion that anything resembling "inner speech" or thinking in "pure meanings" would need to be linked to a broader semiotic system than language (which is what I think Vygotsky actually intended) was necessary in order to establish a basis for a culturally viable theory of writing, one that is sensitive to both the social and the cognitive and one that allows the relation between thought and language to be understood productively.

RECONCEPTUALIZING WRITING: THE PROBLEM OF "LANGUAGE AFTER THOUGHT"

Much recent literature on writing has posited a relation between thought and language such that social and cognitive dimensions of writing appear as contraries rather than complements. To the extent that such dichotomization exists, it grows out of criticisms of the cognitive approach to writing. Consider one of the major criticisms (cf. Bizzell, 1982; Faigley, 1986; Nystrand, 1986, 1989) of the cognitive process theory of Flower and Hayes (e.g., 1981),¹⁴ namely, that—in the words of Faigley (1986)—"language comes after ideas are formed" (p. 534) or—in the words of Nystrand (1986) in a book section titled "Language After the Ideational Fact" (pp. 23-31)—"The character of writing as language . . . is trivialized when the generation of language is presumed to be ancillary to the generation of ideas—that is, when words are seen as the garb of thought" (p. 27; see also, Nystrand, 1989).

Such criticism of the cognitive approach serves as a justification for a social approach and as a basis for asserting the greater efficacy of a social approach. However, given the evidence in the previous section that thinking is not necessarily dependent on language, such criticism may ultimately point as much to the inadequacy of a purely "social perspective" as it does to the inadequacy of the Flower and Hayes cognitive process theory. My own view is that it is both possible and necessary to entertain concurrently, not as contraries but as complements, the idea that thought can occur independently of language in the linguistic sense and the idea that language can serve as an instrument of thought. Only by entertaining both hypotheses can a theoretical perspective on writing as writing be practiced and used be managed.

Contrary to the positions that Bizzell, Faigley, and Nystrand appear to take, I—when my students, my colleagues, or the writers I study tell me that they know what they mean but that they don't know how to say it or can't find the words to say it—I regard their statements as ethnographic "facts" with interesting and significant cognitive implications. These are facts and implications that simply cannot be dismissed, as Faigley (1986) does, as empty or misguided "everyday metaphors" (p. 534). If language always comes before thought, before the "ideational fact," then it surely must be concluded that when I use such ordinary words as *sunrise* and *sunset*, I am either articulating a Ptolemaic conceptualization of the universe, because that is the only conceptual frame—the only ideational context—within which the two words can mean *rise* or *set*, or I am using language that is at odds with my own internal conceptualization of the universe. In the latter case, I suppose I would be—according to Bizzell, Faigley, and Nystrand—either a liar or linguistically deprived. To argue that astronomical discoveries following Copernicus (including Einstein's theory of relativity) create a context that allows me to use the terms *sunrise* and *sunset* to refer to my internal representation of the solar system and its movements in post-Copernican terms is simply to beg a host of questions that are left unanswered. The fact is (a) that people literally talk about sunrises and sunsets as though the sun actually moved with respect to the earth rather than the reverse and (b) that when they talk at any length about sunrises and sunsets in a non-Ptolemaic and post-Copernican way, they typically find themselves without adequate words and resort to using gestures or pictures to articulate their knowledge, which is no less real simply because they do not have the words to express it.

My sense is that an adequate theory of writing must be able to account for the fact that writing can be both a process of translating ideas or thoughts into visible language and a process of discovering meaning through language. To ignore the former and to recognize only the latter (i.e., to maintain that all thought is language and, hence, social) leads, it seems to me, to the denial of such constructs as creativity, originality, change, or even "new" knowledge; and it leads, *mutatis mutandis*, to the denial of "the self." To deny "the self" is also to deny "the other" for without "the self," there can be no "other." Moreover, without both "the self" and "the other," there can be nothing like the "human sciences" (to borrow a term from Foucault's [1966/1970] *The Order of Things: An Archaeology of the Human Sciences*), one of which surely the study of writing would be a part of—assuming, of course, that "man" has not yet ceased to exist in the Foucaultian scheme of things. In terms of a purely "social theory" of writing, which cannot exist without the "speech before thought" assumption, there can be nothing like an individual voice that speaks against the background of the multitude of different voices through the "dialogized heteroglossia" of the novel, or the discourse, of which Bakhtin writes. All voices would become as one, a great choral planarian constantly reproducing its missing parts in its own image. Bakhtin's vision is, I believe, a larger one. It is, after all, both the collocation of individual acts and the particular and distinctive individual acts that define the Bakhtinian carnival. And it is the need to account for both the social collocation and the individual and distinctive act that leads Leoniev (1991), who draws extensively on Vygotsky and Bakhtin, to observe that "cultural phenomena" must be characterized as representing "a dialectical unity of two flows: (a) overcoming of existing standards and stereotypes and (b) standardization and stereotypization of innovations." Innovations are difficult to explain in purely social terms. Moreover, it appears to me to be the constant dialectic of the social and the individual that underlies Latour's (1986/1988) interest in "inscriptions" (regardless of the symbol systems they incorporate) as invented objects "which have the properties of being mobile but also *immutable, presentable, readable, and combinable* with one another" (p. 26; Latour's italics).

If the "evidence" and arguments I have presented constitute anything like a plausible alternative hypothesis to the one associated with Vygotsky—namely that "inner speech," the ability to think in "pure meanings," develops solely and exclusively out of "social speech"—

then it would follow that the very notions of text, context, and intertext that figure so importantly in current research on writing need to be reconceptualized in a way that accommodates not only the writing activities of the six writers described previously but also the culturally salient images of writing that many young children appear to bring with them to school and the self-reported difficulties many writers experience in putting ideas into words. In my judgment, such a reconceptualization would bring the concepts or terms *text*, *context*, and *intertext* closer to the Latin root they share with one another, namely, *texere*, which refers to weaving, interweaving, or plaiting and braiding without regard to the specific material on which the operation is or can be performed.

We can return now to the third grocery list in Figure 1, a further analysis of which will indicate more precisely the sorts of implications such reconceptualizations might have for the study of writing. As a starting point, let me use that list to suggest how at least two "contexts of situation" (cf. Malinowski, 1923/1946)—production and use—can influence and be influenced by what people write. The "context of production" and the "context of use" (cf. Nystrom, 1986) both support somewhat different—though not unrelated—meaning potentials, presuppose or signal different sorts of intertextual relations, and relations, and relate to each other semiotically (i.e., through the use of signs).

For Marilee, the context of production was influenced, at least in part, by three sorts of "texts," each woven from different sorts of semiotic materials: (a) those that had what might be called a material or hard-copy existence, (b) those that had what might be called a memorial existence, and (c) those that existed potentially as anticipated or projected events.

Among the "texts" that existed in material form were four recipes that called for several of the items on Marilee's list. One of the recipes pictured a furnished table on which the completed dish was prominently displayed. Recipes are, of course, simply one of many sorts of "texts" that employ multiple-symbol systems, texts of the sort that almost anyone who shops for groceries will inevitably read and process, texts such as grocery ads and labels on tins of vegetables. Texts that use more than one symbol system are, of course, less common as grocery lists, such as Example 2 in Figure 1, but readers nevertheless experience little difficulty in constructing meaning for them, just as readers have little difficulty constructing meaning for the

texts, described previously, of the undergraduate student, the graduate student, and the engineer.

In addition to "material texts" like recipes, Marilee also consciously drew on several "memorial texts" and perhaps subconsciously drew on several others. Among the memorial texts that apparently figured in Marilee's context of production were several conversations with her four children and her husband regarding food and meals and at least one conversation Marilee had had with her husband about a dinner two days hence, which had been planned for themselves and another couple and their two children. Moreover, Marilee apparently also drew memorially on both the oral "texts" that had emerged during previous family meals and during previous meals with the guest couple and their children and on the various "texts" she had learned to follow in preparing and presenting meals.

And, by her own account, Marilee certainly had in mind her previous grocery lists and the more general "text" she had learned to follow in doing grocery shopping, both of which she indicated served to limit dramatically the number of "compulsive purchases" that she and her husband had previously (i.e., until the birth of their third child) been prone to make during their trips to the grocery store. (The idea for the sort of list Marilee used actually had come to her during a financial planning workshop she and her husband attended; hence another, though temporarily more distant, "memorial text.") When we consider how Marilee used both the "hard-copy" texts and the various oral texts she remembered, it becomes clear how heavily collaborative even relatively simple writing tasks such as making a grocery list can be. Moreover, as was true of the sorts of collaboration evident in the descriptions of four of the six writers at the beginning of this essay, Marilee's collaboration cannot be understood solely in terms of "verbal" text or "verbal thinking."

Both Marilee's material "texts" (including the grocery list she wrote) and her memorial "texts" appear to be related to "texts" that she "projected." I mean by those projected "texts" the preparation of meals, the meals themselves, the conversations likely to occur during her family meals and during the more formal meal with guests, and so forth—all of which are a part of the stream of discourse into which Marilee's written text (i.e., her grocery list) entered. And Marilee's projected texts do not differ in kind from those of the writers whose activities were briefly described near the beginning of this essay.

Consider, for example, the single sentence—"The Board considered a request from [Company X] to reallocate LUEs [i.e., "living unit equivalents," a measure of wastewater capacity in a sewer line] from [tract of land A] to [tract of land B]"—that the lawyer wrote for the official minutes of a public meeting of a government entity. That single-sentence text illustrates fairly clearly how memorial texts and projected texts often interact with one another during the writing of material texts, even when the memorial texts never existed in either written or spoken form. For the lawyer, one of the central problems to be solved in composing the sentence was to respect or "protect" the board's unofficial (and unauthorized by statute) practice of using its power to control zoning within the service area under its jurisdiction—a practice that could, for obvious legal reasons, never be articulated directly in written or spoken form. Because zoning lay outside the statutory authority of the District and the statutory duties of its elected officials and because taking public stands on zoning questions could expose both the District and its board members to liability suits, neither the District nor individual board members could produce a spoken or a written text that intimated any involvement whatever in zoning activities. Zoning and zoning decisions were the statutory province of the city in whose "extra-territorial jurisdiction" the District existed and operated. Nevertheless, for reasons apparently having to do with such matters as property values, traffic flow and congestion in neighborhoods consisting principally of single-family homes, and suburban crime, the board appeared to use the legal powers it did have to control zoning covertly whenever possible.

In the case of the 1-hour-and-38-minute segment of the public meeting that the lawyer reduced to a single sentence, the board had no authority to prevent the sale of the property in question, which had been replatted for an apartment complex rather than for single-family homes. The board was aware of those "development" plans because all such plats needed to be "signed off on" by the District to indicate the availability of water and wastewater service before the city could take whatever zoning action might be necessary in order to issue the appropriate building permits to developers. Moreover, the board had only "questionable authority" in the matter of the requested LUE transfer because all of the LUEs in question had been "purchased" by means of contract agreements with the District and secured through letters of credit (on file at local banks) by the developer hoping to sell the tract.

According to the lawyer, the long discussion during the meeting followed by no decision by the board was simply a delay tactic on the part of the board, a tactic that the board had apparently used before to "control" development in the area. In the particular case at hand, the board's strategy seemed to be to buy time in hopes that the sale of the tract (which sale was governed, according to the lawyer, by a contract specifying a closing date three days before the board's next scheduled meeting and containing a contingency clause with regard to the required transfer of LUEs to the property) "would fall through." In addition, the board had knowledge of the pending sale of the second tract by the same developer, a tract that had also been replatted for multifamily housing. Neither the new plat for the second piece of property involved in a pending sale nor a request from the developer for the transfer of LUEs to the second tract had yet been presented to the board, although the lawyers for the potential buyers of the second tract had been in touch with both the District's lawyer and its general manager regarding the availability of water and wastewater service. In the second case, however, the tract in question both adjoined a major thoroughfare and was located about a mile from any single-family dwelling within the jurisdiction of the District and its board.

According to the lawyer, the board members were gambling that the developer would not "vigorously pursue the issue" of getting LUEs transferred to the first tract for fear that the board would use its ability to delay its authorization of the transfer of LUEs to the second tract, the sale of which would net the developer, the lawyer estimated, about 2.5 million dollars more than the sale of the first tract. According to the lawyer, his single sentence reinforced and reiterated the unspoken and unwritten "message" the board wanted to "send unofficially" to developers generally and, at the same time, limited the "board's exposure to a civil suit."

It is in these senses that the lawyer's single-sentence entry in the minutes both gathered up the unspoken and unwritten texts of the meeting itself and, at the same time, affected the construction of a number of texts the lawyer had "projected." These "projected" texts included the final transaction involving the sale of the second tract, the dissolution of the contract governing the proposed sale of the first tract, the unofficial "message" to developers that would be gleaned (given the proper background knowledge, which is why developers often hire local lawyers with histories of working in certain areas of cities) from repeated readings of the official minutes of meetings over time.

Others of the cases described previously also indicate the role of projected texts in the composing of material texts. For example, the utility district manager's two-word agenda item—"Budgetary considerations"—literally constructed the text of the subsequent meeting of the board of directors by eliminating, as the manager put it, "premature input from the taxpayers before the board has a picture of the financial issues and understands their [i.e., the board's] opinions." Similarly, projected texts were fairly obvious to the vice president of the manufacturing company—with his "hands-off control" of the group's construction of the form for tracking materials through the various company operations represented by the five department managers involved in the process. The vice president's ultimate goal was, of course, "to increase the margin of profit," which would show up in quarterly and annual reports (texts that would employ, at least, alphabetic and numeric symbols), but he believed that that goal could not be realized unless the department managers agreed among themselves on "a mechanism for locating the source of problems when things go wrong." The committee collaboration (see Note 9) evidenced through the composing of the form for tracking raw materials through the company had the effect of restructuring relations among the five departments and altering the nature of conversations across the departments. These outcomes were achieved through the "negotiations" (which clearly represented one sort of text the vice president projected) that occurred throughout the protracted process of composing the document and through the subsequent companywide use of the form itself, which became both the written record of what had been achieved by way of restructuring and the means by which the restructuring was reinforced on a day-to-day basis.

Although similar demonstrations of the roles of projected texts during composing are possible for each of the six cases described at the beginning of this article, those demonstrations would only reinforce what should already be obvious, namely, that projected texts can interact in powerful ways with both extant and in-progress material texts and, further, that—like their extant and current counterparts—projected texts cannot be understood simply with reference to spoken texts or traditional alphabetic texts. As in the case of the three sorts of "texts" associated with Marilee's context of production, the three sorts of texts that figure in the contexts of production for the various cases may be said to have influenced semiotically the processes of composing. In Marilee's case, writing the grocery list literally functioned to

construct the activity of grocery shopping, to say nothing of how it would likely construct the social texts of subsequent meals and other human interactions.

It may be objected that I have been using the term *text* in some fairly unconventional ways. That is, of course, true if *conventional* means limiting the notion of text—after the manner of most writing instruction and research—to extended alphabetic representations of meaning that can be described, with some measure of success, according to structuralist categories and definitions from linguistic science. But my use of the term *text* is not at odds with some work in sociology (e.g., Berger & Luckmann, 1966; Brown, 1987; Goffman, 1971, 1975; Harré, 1989)—which treats phenomena such as face-to-face interaction as text—and much recent work in semiotics (e.g., Eco, 1976, 1979; Granger, 1968; D. MacCannell, 1979; Nattiez, 1990; Sebeok, 1976, 1979/1988, 1991; Uspenskij, 1977; I. P. Winner, 1979; T. G. Winner, 1979)—which often treats symbolic representations without regard to sign system (cf. Eco, 1976, pp. 3-31; J. F. MacCannell, 1981, p. 289). This is particularly true of cultural semiotics, which, as Orr (1986) points out, "has broadened the meanings of the terms 'text,' 'language,' and 'reading' to include almost everything perceived as partaking in a sign-relationship" (p. 812). Thus although speech or extended alphabetic texts may be privileged from a linguistic perspective, from a semiotic perspective—which subsumes the linguistic one—it is difficult not to regard as "text" any ordered set of signs for which or through which people in a culture construct meaning, regardless of whether that set of signs manifests itself in day-to-day human relations, religious rituals, hockey games, paintings, grocery lists, rock and roll songs, novels, motion pictures, scholarly articles, and so on, even though some part or all of such "texts" do not readily submit to linguistic description or analysis. Texts, regardless of the particular symbols through which they are expressed or through which writers discover their meaning, are woven out of the materials of multiple symbol systems.

RECONCEPTUALIZING WRITING: LANGUAGE, THOUGHT, AND SAUSSUREAN SEMIOLOGY

The foregoing analyses bring me to another point that I believe the grocery lists illustrate, namely, that writing—because it can exist as,

for example, a grocery list and serve socially constructive ends and take different symbolic forms—cannot be explained satisfactorily by appealing to Saussure's (1922/1959) conceptualization of semiotics. Saussure's conceptualization is, of course, related to three distinctions that underlie his *Course in General Linguistics*: (a) Saussure's distinction between language as human speech (*langue*) and language as system (*langue*) (see p. 9), (b) his distinction between language as system (*langue*) and language as speaking (*parole*), which is situationally variable (see p. 13), and (c) his distinction between the "synchronic" and "diachronic" aspects of language (i.e., *langue*), the systemic universal and the nonsystemic historically variable (see pp. 81, 98). Although Saussure sees linguistics as "only a part of the general science of semiology" (p. 16), Saussure himself limits his discussion of "semiology" to linguistic signs, largely because he regards linguistics as the *patron général*, or prototype, of semiotics (see p. 68). Thus Saussure's linguistic framework becomes the basis for what he calls "semiology," which he defines as a "science that studies the life of signs within society" (p. 16; italics in original).

For Saussure, a sign is actually a linguistic sign relation that "unites, not a thing and a name, but a concept and a sound-image." According to Saussure, the "sound-image" is not "the material sound, a purely physical thing, but the psychological imprint of the sound, the impression that it makes on our senses" (p. 66). Within this mentalist framework, which is represented in Figure 2, Saussure calls the concept the "*signifié*" or "signified" and the sound-image the "*signifiant*" or "signifier" (p. 67). Together, the two components form the "*signe*" or "sign" (i.e., the sign relation), which is a "two-sided psychological entity" (p. 66). Moreover, for Saussure, the relation between the two components is a direct and bidirectional one (see Saussure's representation on p. 66 of *The Course*) such that "the idea of the sensory part [i.e., the sound-image] implies the idea of the whole [i.e., the concept]" (p. 67). Or to put the matter another way, for Saussure, the Latin "*arbor*" is called a sign only because it names the concept "tree" (p. 67). That is to say, although the particular sound-image/concept relation may be arbitrary in the sense that there is no necessary connection between the two components of the sign relation, that relation once formed or created socially by convention becomes fixed. Once the relation becomes fixed or stable, language and thought become, in effect, an identity, become inseparable. Saussure puts the matter in the form of a metaphor:

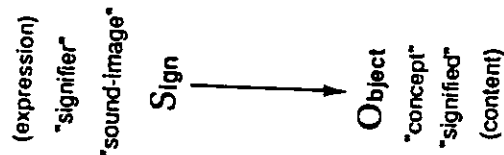


Figure 2: Saussure's Model of Semiology

Language can . . . be compared with a sheet of paper: thought is the front and sound is the back; one cannot cut the front without cutting the back at the same time; likewise in language, one can neither divide sound from thought nor thought from sound; the division could be accomplished only abstractly, and the result would be either pure psychology or pure phonology. (p. 113)

From my perspective, Saussure's metaphor is compelling so long as it is taken to mean that where there is language there is thought. But when it is taken to mean that where there is thought there is language, the metaphor—and the theory supporting it—begin to run into insurmountable difficulties.

Let me try to indicate the nature of these difficulties. From Saussure's assertion that "linguistics can become the master-pattern [i.e., the *patron général*] for all branches of semiology" (p. 68), it would seem to follow that language is—to use a term that comes from the Moscow-Tartu school of semiotics (see Sebeok, 1991, pp. 49-58)—the "primary modeling system"¹⁶ by which people come to understand the worlds in which they live. Without attending specifically to its relation to Saussurean semiology, Sebeok argues against the Moscow-Tartu identification of language as the "primary modeling system." He notes

that it is informed by the work of 20th-century German biologist Jakob von Uexküll (e.g., 1909, 1928/1973; see also T. Uexküll, 1988), who used the notions of *Innenwelt* (roughly, "inner world") and *Umwelt* (roughly, "environment") to develop a semiotic theory of biology. However, Sebeok argues that the Moscow-Tartu school ignores a distinction that von Uexküll articulated throughout the first four decades of the 20th century. Sebeok's critique of the Moscow-Tartu identification of language as the "primary modeling system" is to the point:

The *Innenwelt* of every animal comprises a model—whether of a minimal A-W type [i.e., approach-withdrawal as per Schneirla (1965)] or of a more elaborate kind—that is made up of an elementary array of several types of nonverbal-signs (variously elaborated by Jakob von Uexküll [1982, pp. 10-11] under such labels as *Ordnungszeichen*, *Inhaltszeichen*, *Lokalszeichen*, *Richtungszeichen*, *Wirkzeichen*, and the like . . .). Solely in the genus *Homo* have verbal signs emerged. To put it in another way, only homonids possess two mutually sustaining repertoires of signs, the zoosemiotic nonverbal, plus, superimposed, the anthroposemiotic verbal. The latter is the modeling system that the Soviet scholars call primary but which, in truth, is phylogenetically as well as ontogenetically secondary to the nonverbal; and, therefore, what they call "secondary" is actually a further, tertiary augmentation of the former. (p. 55)

Sebeok also argues that positing the zoosemiotic nonverbal as phylogenetically and ontogenetically prior to the verbal permits the only defensible theory of the evolution of both homo sapiens and language. Following Gould and Vrba (1982, p. 13), Sebeok notes that the "common flaw in much evolutionary reasoning"—"the inference of historical genesis from current utility"—has egregiously contaminated all rescarches . . . into the problem of the origin of language" (p. 56). This is exactly the sort of flaw that we find in Saussure's theory—which stipulates the prior existence of language to thought—when it is extrapolated to language origins, and it is the sort of flaw we find in critiques of Flower and Hayes' cognitive process theory—all of which assume the prior existence of language to thought—when those critiques are extrapolated to the origin of language.

If we agree that language in the Saussurean sense could not have functioned initially as the "primary modeling system," then a somewhat different picture of the relation between thought and language, between the concept and the sound-image, emerges. According to Sebeok's hypothesis, the evolution of language would necessarily

follow the ability of early humans, first, to represent to themselves natural sign relations of a very simple sort (e.g., the co-occurrence of sun and light) and, second, to attribute significance to such co-occurrences. In my view, neither Saussure's theory—with its insistence on the identity of language and thought—nor other related theories can generate a reasonable hypothesis that explains even the survival of a species that would eventually become the most sentient and cognitive of beings in a fairly hostile world. Moreover, any linguistic system, even in its most rudimentary form, would have to presuppose the thought or level of thinking necessary to recognize, act on, and purposively reproduce the combination of sound-image and concept that Saussure stipulates. And that brings us back to the prior necessity of postulating some sort of in situ signification process prior to the emergence of language in the linguistic sense. In my view, Halliday (1978) provides ample evidence for language as a nonprimary semiotic system. In Halliday, the interpersonal component must ultimately be explained in terms of such necessarily prior and fundamentally semiotic relations as would be included under body language and proxemics, which themselves must be informed by an a priori and minimal distinction between "self" and "other," unless—of course—one is prepared to argue the rather tenuous position that the class of personal pronouns preceded the development of the ability to make that distinction.

Thus it would seem that any attempt to account for the social function of language generally (e.g., Halliday, 1973, 1975, 1978) or of writing particularly (e.g., Nystrand, 1986) must presuppose the prior existence of (a) other semiotic systems and (b) individuals capable of using them in a cognitive as well as social way. Speaking in situ incorporates not just the linguistic system but also the semiotics of, for example, body language, proxemics, and deictics. To argue that language precedes thought or that language is a priori necessary for thought is, thus, to argue that language is also a priori necessary for the semiotics of body language and proxemics. Such an argument would seem to stand on fairly shaky ground indeed. What appears to be necessary for thought is the emergence and use of a semiotic system, not language as the semiotic system.

The impossibility of dealing meaningfully with in situ signification vis-à-vis the assumed identity of language and thought is, in my judgment, the reason Saussure's theory takes the particular directions it does. In his semiotic as in his linguistic theory, Saussure skirts

issues such as in situ signification by choosing—to use terms from Hjelmslev's (1943/1961) interpretation of and enlargement upon Saussure—to deal with "expression" rather than "content," not in terms of the former's variability or situational dependency but in terms of its hypothesized abstract, invariable nature. Thus when Saussure urges that the Latin *arbor* gathers up the concept "tree," he is—in effect—asserting that as far as his semiotic and linguistic theory is concerned, any variability in meaning that the sound-image *arbor* may achieve in different contexts, among different groups of speakers, or for a given individual speaker is both unimportant and uninteresting. In fact, once an identity between thought and language, between concept and sound-image, is stipulated, the study of meaning can then become a function of structural differences within and across linguistic systems. And that is the importance to Saussure's (1922/1959) theory of the notion of value (see esp. pp. 113-120), which is "determined by [the word's] environment" (p. 116). To be "determined by its environment" means that a given word (as a sign), or any other linguistic element, does not exist in a linguistic system unless it can be differentiated from another word (also a sign) in the system. Thus, for Saussure, whereas the "arbitrary nature of the sign explains . . . why the social fact alone can create a linguistic system" (p. 113), the principle of differential value allows meaning to be represented in terms of form or structure (see pp. 113-114), a notion that provides the basis for structuralism in general and for Hjelmslev's structural semantics in particular (cf. Nöth, 1990, p. 61).

It would seem, then, that unless the relationship between the sound-image and the concept were "static" (as presumably it would be for *langue*), it would be difficult to argue the mentalist and essentially structuralist position that Saussure's *Course in General Linguistics* adopts. In this regard, Nattiez (1990) raises one critical issue:

Can we . . . rest content with this "static" conception of the sign? An example can be drawn . . . from the realm of verbal language: forcing the signifier "happiness" to correspond to one signified, whose description could embrace the thing that all English-speaking individuals associate with the word "happiness" in every possible situation where the word might be used, would seem a difficult task indeed. (p. 5)

If language as a sign system is posited as arbitrary and altogether conventional in the social sense and if language and thought are posited as necessarily identical in the psychological sense, then it

would seem (a) that native speakers using the same language would never have difficulty understanding one another and (b) that two people uttering the same words within the same overall linguistic structure would be able to signify exactly the same concept or concepts. Ordinary experience suggests that neither consequence actually obtains.

By way of illustration, consider the following example text, which I believe meets all the Saussurean requirements for signification and value (i.e., meaningfulness) in terms of *langue*: "This is not a sign." In point of fact, that text can have any number of different significations and values (to use Saussure's terms), both for individual speakers (or writers) and individual listeners (or readers) and for different communities of speakers (or writers) and listeners (or readers). If, for example, the statement were to appear on a side of a building along *chemin de la Côte des Neiges* in Montréal (which is where I first saw it), the statement would mean something different to a reader visiting Montréal from Georgia who has no knowledge of the laws against "English only signs" in Québec than it would to an Anglophone native of Québec, who would not likely be very pleased with the law against "English only signs." It would mean something else again to a Francophone native who sees the law as a way of preserving Québec as a "distinct society." And if it were to appear (as, in fact, it also did) in St. Albans, Vermont—where a fair number of Québécois from Montréal travel to take advantage of the benefits of "cross-border shopping"—as finger-writing on a stationwagon's dirt-covered rear window directly above a license plate reading "*je m'esouviens*," the text would mean yet something else. It would mean something different if it were written by a visitor to Vermont from Ontario than if it were written by a native of St. Albans, and it would mean still something else if the stationwagon were owned and driven by an Anglophone rather than a Francophone Québécois. Clearly, whatever meaning the text may represent for a given language user, that constructed meaning would be dependent on the context in which the text appeared and on a host of prior texts experienced by the language user, texts that exist(ed) in both verbal and nonverbal forms.

The point of the foregoing example is, of course, to suggest that to proffer a semiotic theory that fails to account for situational variability (*vis-à-vis parole* in Saussure's terms) in what or how a sign relation might signify for different speakers in different situations is to fail to recognize (a) individual psychological processes of meaning con-

struction, (b) the role that situational context plays in individual acts of meaning-making, and (c) the semiotic nature of the concept or signified. These are matters, as I argue in the following section, that can be accommodated through the semiotic theory of Charles Sanders Peirce.

RECONCEPTUALIZING WRITING: LANGUAGE, THOUGHT, AND PEIRCEAN SEMIOSIS

Although Saussure's system may account for some theoretically interesting abstract universals in language, it seems considerably less capable of dealing with how people actually use language to mean. It was with this realization that writers such as Malinowski (1923/1946) began calling attention to "situation" and Jakobson (e.g., 1960) began to call attention to language "codes." Attention to language codes and situational uses of language led, of course, to the emergence of disciplines such as sociolinguistics (e.g., Gumperz, 1968/1972; Hymes, 1964/1972, 1977; Labov, 1970) and the sociology of language (cf. Bernstein, 1971, 1973; Fishman, 1969/1972). Texts in the world of everyday life, even linguistic texts, require a less abstract and a less narrow semiotic than Saussure's, a semiotic that does not depend on the language-thought identity that underlies Saussure's theory. These were the problems that Ogden and Richards (1923/1946) addressed in *The Meaning of Meaning*, a book that may be best remembered now for Malinowski's essay on the "context of situation," which appears as Supplement 1 to that volume. As we have already seen, in that essay Malinowski argues that in order for people—whether as speakers or hearers—to construct meaning through language, language must be understood with reference to its contexts of production and use, which is exactly what Saussure's semiotic seems to deny and exactly what Saussure seems to have sought an escape from by focusing on the universal and abstract nature of language (i.e., *langue*), whether seen in linguistic or semiotic terms, and by asserting the identity of language and thought. In fact, it may be regarded as theoretically impossible to account for in situ meaning-making while maintaining a language-thought identity.

I shall skip over Ogden and Richards' (1923/1946) and Malinowski's (1923/1946) particular semiotic discussions because they apply principally to linguistic signs and turn instead to a simplified version of

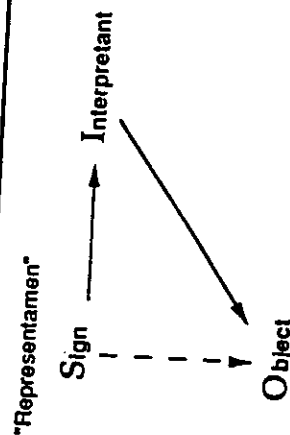


Figure 3: Peirce's Triadic Model of Semiosis

Charles Sanders Peirce's semiotic theory¹⁷ because (a) Peirce's theory is more comprehensive, (b) it is not limited to linguistic sign relations, and (c) it can be used to explain how language and other semiotic systems are constructive in both a cognitive sense *and* a social sense. Although much of Peirce's writing on semiotics antedates Saussure's by several decades, I shall treat Peirce's theory as though it were developed as an alternative to Saussure's, a procedure that is perhaps warranted (a) because Saussure's work is generally better known among writing researchers than Peirce's and (b) because there is no evidence that Saussure knew Peirce's work. (Incidentally, although Peirce's semiotic is in many ways compatible with the "words-and/or-signs" formulation of semiotic mediation I have attributed to Vygotsky, I know of no clear evidence that Vygotsky knew Peirce's work either.)

Figure 3 depicts the three principal components of Peirce's semiotic, which can be easily discerned in Peirce's definition of the triadic sign relation. As Parmentier (1985) points out, Peirce's semiotic incorporates two aspects, one focusing on representation and the other on determination. With regard to representation, Peirce relies on and expands the medieval formula of *aliquid stat pro aliquo* (e.g., cf. Sebeok, 1991, p. 17) or "something standing for something else".¹⁸

A sign, or *representamen*, is something which stands to somebody for something in some respect or capacity. It addresses somebody, that is, creates in the mind of that person an equivalent sign, or perhaps a more developed sign. That sign which it creates I call the *interpretant* of the first sign. The sign stands for something, its *object*, but in reference to a sort of idea. (2.228)

With regard to determination Peirce writes that

A Sign, or *Representamen*, is a First which stands in a genuine triadic relation to a Second, called its Object, as to be capable of determining a Third, called its *Interpretant*, to assume the same triadic relation to its Object in which it stands itself to the same Object. The triadic relation is *genuine*, that is its three members are bound together by it in a way that does not consist in any complex of dyadic relations. (2.274)

Determination, in the Peircean sense, seems to derive from the relation between the object of the sign and a thinking subject (the "somebody" in Peirce's definition). A sign refers to its object (which may be either things like chairs or ideas like freedom and imaginative beasts like mermaids and unicorns), but the sign is determined by its object, which also determines its interpretant, which—in turn—refers to the object. The interpretant—as well as the triadic relation itself—presupposes an interpreter because, Peirce observes, "nothing is a sign unless it is interpreted as a sign" (2.208), an observation that makes thought itself a sign, which need not be a linguistic sign.

The differences between Peirce's and Saussure's theories are many, and some are readily apparent when Peirce's basic definitions are compared to Saussure's semiology. The first obvious difference is that whereas Saussure limited his semiology to linguistic signs and saw linguistics as the *patron général* of semiotic systems, Peirce makes no reference in his definition to linguistic signs at all, primarily because for Peirce linguistic signs are simply one type of sign in a "universe [which] is perfused with signs, if it is not composed exclusively of signs" (5.448). Second, whereas Saussure defines the "sign relation" as a dyadic one, Peirce defines it as a triadic one, consisting of what he calls the "representamen" (or the "sign"), the "object," and the "interpretant." It is important to note that, for Peirce, unless all three components are present, there does not and cannot exist a sign relation. Third, whereas for Saussure the connection between the "sound-image" (i.e., the "signifier") and the "concept" (i.e., the "signified") appears fixed and stable, for Peirce the connection between the "sign" and the "object" seems much less so, a matter that I have attempted to depict in Figure 3 by means of the broken line drawn between the sign and its object. A fourth major difference between Peirce and Saussure is that what Saussure calls the "signifier" (limited, of course, in his semiology to the "sound-image") is bifurcated by Peirce into

two components, the sign (i.e., the representamen) and the interpretant. The "interpretant" for Peirce represents an interpretation, which is mediated through the sign, of the object of the sign. The interpretant is a crucial component because for Peirce "nothing is a sign unless it is interpreted as a sign" (2.208), which turns the triadic sign relation depicted in Figure 3 into a model of an active and constructive meaning-making process.

Peirce's "interpretant"—a component that is not present in, anticipated by, or derivable from Saussure's mentalist semiology—represents a critical difference between the two theorists. Whereas for Saussure the critical elements of semiology are signification and value with regard to a stable dyadic sign relation, for Peirce the crucial element is the constructive process—which, following Morris (1938, p. 1), can be called "semiosis." The constructive semiosis that characterizes the tripartite sign relation (which is not limited to linguistic sign relations) makes individual cognition a central feature in Peirce's theory.

As Peirce seems well aware, the triadic sign relation by itself is limited. Although it offers a more realistic understanding of a sign relation than Saussure's dyad, it cannot overcome the difficulty posed by the stable and fixed relation between Saussure's signifier and his signified, or between language and thought, when—in fact—sign relations, even linguistic ones, are neither stable nor fixed, as we saw in the case of the political slogan printed on the building in Montréal and on the station wagon in Vermont. Thus, if we recognize that, in the Saussurian sense, the relation of the sign *sister* and the concept *sister* might be interpreted in a multitude of ways (e.g., in terms of physiological features, personality traits, closeness to a sibling or parent), we immediately begin to see (a) that relationships between signs and objects can be multidimensional, variable, and unstable and (b) that a given sign user can, through interpretants, construct the meaning of the sign in any number of ways, some of which will likely be at odds with the ways that other sign users construct the meaning of that sign.

To account for such variability in the constructive process of meaning-making and for the fact that a given sign might "mean" multiple things to any given person, Peirce proposed the idea of multiple interpretants. Following Nattiez (1990), I have indicated the triadic relation with multiple interpretants in Figure 4.¹⁹ Peirce explains his notion of multiple interpretants in the following way:

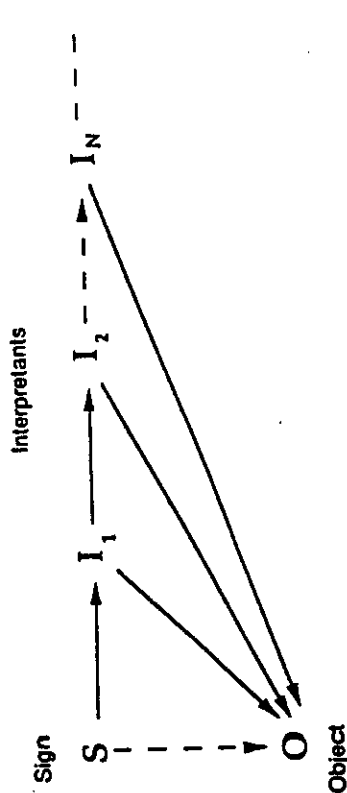


Figure 4: Peirce's Multiple Interpretants

Genuine mediation is the character of a Sign. A Sign is anything which is related to a Second thing, its *Object*, in respect to a Quality, in such a way as to bring a Third thing, its *Interpretant*, into relation with the same Object, and that in such a way as to bring a Fourth into relation to that Object in the same form, *ad infinitum*. If the series is broken off, the Sign, in so far, falls short of the perfect significant character. (2.92)

Commenting on the phenomenon of multiple interpretants in semiotic mediation, Parmentier (1985) notes that for Peirce "one semiotic moment in which the sign elements are in a genuine triadic relation requires an infinite series of similar moments; in other words the sign relation is a process" (p. 27). I believe that it is at this point that Peirce's and Vygotsky's (1934/1986, pp. 244-246) thinking about meaning could converge. Vygotsky, it will be recalled, argued that "word meaning" is relatively stable, whereas "word sense" varies according to context of use (p. 245) and gathers up the "sum of all the psychological events aroused in our consciousness by the word" (p. 244). To oversimplify both Vygotsky and Peirce somewhat, we could say that "word meaning" might be understood as that which is constructed through the sign-object-interpretant relation without Peirce's multiple interpretants and that "word sense" is that which is constructed through the triadic relation with multiple interpretants. At any rate, it seems to me that some similar conceptualization is necessary in order to explain how in a given situation a given sign relation (whether linguistic or not) would be able to suggest or connote multiple interpretants to a single individual but other interpretants to another

individual. And therein lies the importance of Peirce's conceptualization to both psychological and social theories of meaning: In defining the sign "as something which stands to somebody for something in some respect or capacity" (2.228), Peirce seems to recognize that "meaning" is altogether contingent on individual experience, which is itself mediated through signs such that a given sign (e.g., a word) can "mean" in accordance with, to quote Vygotsky again, the "sum of all the psychological events aroused in our consciousness by the word" (p. 244). Inasmuch as the experience that is necessary for semiosis may in some sense be shared, there is the possibility of socially constructed meaning. And because much of the experience that is necessary for semiosis cannot be shared, there is also the possibility that individually constructed meanings will remain distinct from socially constructed ones. Such a view of semiotic mediation allows us to see how meaning-making can be represented at a fundamental level as an interplay between the self and the other.

However provocative Peirce's triad is as I have represented it with its multiple interpretants, there is yet a missing aspect that is explicit in Peirce's definition of the triad, namely, that the interpretant that the "mind" creates is also itself a "sign" (2.228; quoted above). That the interpretant is also a sign adds yet another dimension to the semiotic process, the semiosis, Peirce describes. That dimension may be called "unlimited semiosis," which I have represented graphically in Figure 5. Peirce sets out his notion of "unlimited semiosis" in at least two ways. First, he writes that "In the consequence of every sign determining an Interpretant, which is itself a sign, we have a sign overlying a sign" (2.94). Second, he notes that a sign is "anything which determines something else (its *interpretant*) to refer to an object to which itself refers (its *object*) in the same way, the interpretant becoming in turn a sign, and so on *ad infinitum*" (2.300). That is to say, once the interpretant is itself recognized as a sign, then that sign becomes part of a new triadic relation such that the original interpretant, now a sign, participates also in a new dynamic relation with an object and another interpretant, which—becoming itself a sign—permits the occurrence of yet another semiotic "moment." Thus the process of semiosis has, at least the potential to go on endlessly; and, as Gallie (1966) notes, the "endless series" would actually continue *ad infinitum* as Peirce indicates were it not for the fact that the "exigencies of practical life inevitably cut short such potentially endless development" (p. 126). In this connection, it is important to recognize the relation of unlim-

Thinking always proceeds in the form of a dialogue—between different phases of the ego—so that, being dialogical, it is essentially composed of signs, its Matter, in the sense in which a game of chess has chessmen for its matter. Not that the particular signs employed are themselves the thought! Oh no; no whit more than the skins of an onion are the onion. (About as much so however.) One selfsame thought may be carried on the vehicle of English, German, Greek, or Gaelic; in diagrams, or in equations, or in Graphs: all these are but so many skins of the onion, its inessential accidents. Yet that thought should have *some* possible expression and some possible interpreter, is the very being of its being. (4.6; quoted from Parmentier, 1985, p. 44)

My sense is that what Peirce describes in this passage and in his accounts of unlimited semiosis is the sort of conceptualization that Vygotsky, in the passages examined previously, was struggling after in his attempts to formulate a position counter to that of Piaget. For Peirce, Vygotsky's "inner speech" (i.e., thinking in "pure meanings") would be characterized as unlimited semiosis that operates regardless of any particular sign "vehicle" or medium, that operates regardless of any "inessential accident."

PEIRCEAN SEMIOSIS AND THE RECONCEPTUALIZATION OF WRITING

Peirce's semiotic theory has several implications for the broader conceptualization of writing that I think is needed, implications that touch directly on how we might think about the writing-related activities of the six writers that I described near the beginning of this essay. Among those implications are the following: First, Peirce's semiotic shows that meaning does not reside in the sign but is constructed by people through individual cognitive acts. Second, it suggests that the ability to construct meaning for particular sign relations, which are always situated in particular contexts, is likely to be constrained by both prior experience in constructing meaning through sign relations of a particular type and the context in which the sign appears. Third, Peirce's model implies that additions to one's knowledge, or a reorganization of one's knowledge, will likely result in additions to, or changes in, the "pool" of available interpretants or result in different choices regarding the interpretants involved in unlimited semiosis. Fourth, in specifying that knowledge and cogni-

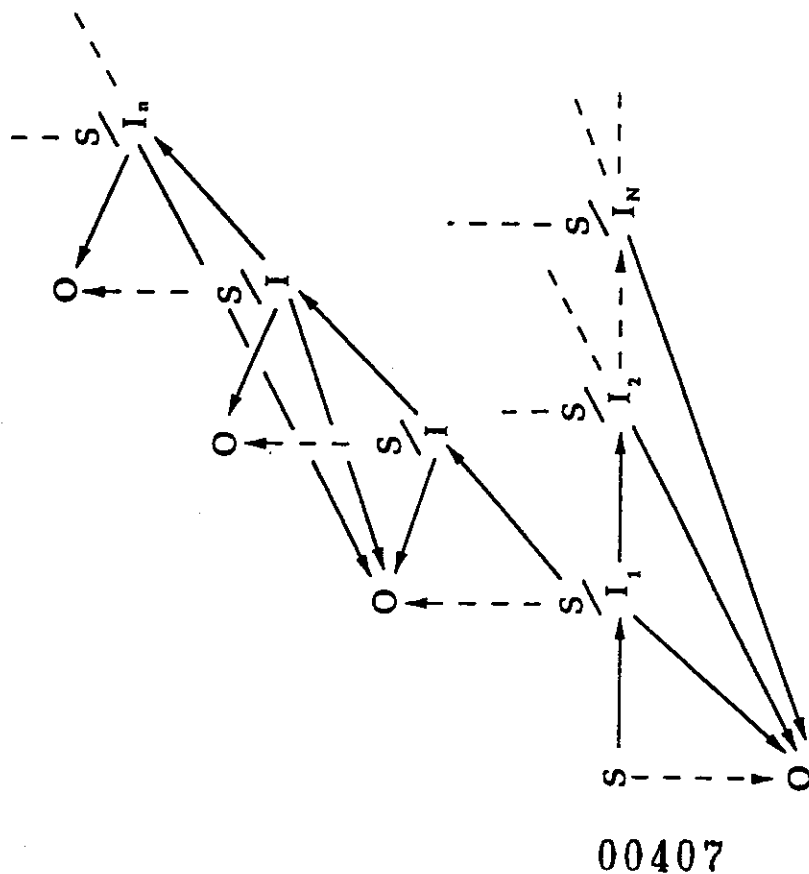


Figure 5: Peirce's Unlimited Semiosis

ited semiosis to thought and thinking in Peirce. For Peirce, the sign relation consists of a "triple connection of sign, thing signified, [and] cognition produced in the mind" (1.372). If we recognize that the interpretant in Peirce's scheme is that "cognition produced in the mind" and that the interpretant becomes "in turn a sign," then it follows that, first, all thoughts are themselves signs (i.e., triadic sign relations) and, second, that thinking and cognition cannot occur except within the framework of unlimited semiosis. That is to say, *semiosis is thinking*.

Not unimportant to the central argument of the present essay is a passage in which Peirce urges that the medium of the sign is completely irrelevant to thought, which he describes as "dialogue":

tion are always mediated through an iterative semiotic process of meaning construction without regard to symbol system, Peirce's theory helps to account for why "writers" quite naturally traffic in multiple symbol systems and why language in the traditional linguistic sense can, in fact, come after the ideational fact. Fifth, Peirce's model, because it excludes nothing from the class of objects that might participate in a sign relation, allows for the social to be constructed semiotically (i.e., made "knowable") by individual minds. Sixth, Peirce's unlimited semiosis probably provides one sort of theoretical justification for the current interest in "situated cognition" (Brown, Collins, & Duguid, 1989; Grceno, 1989) and "situated action" (Suchman, 1987), notions that have recently been assimilated into writing research programs (e.g., Flower, 1989), neither of which would seem possible without the operation of semiosis in the broad and constructive sense in which I have defined it.

It might seem that we are now, as they say in Texas, a "fur piece" from the six writers and the three grocery lists discussed previously. But actually we are a bit closer to explaining some things about them and about writing in general that I could not explain before stopping off at Peirce and semiotics. Recall that I suggested that context, text, and intertext are related—in fact, nearly inseparable—"in" Marilee's grocery list, even though I had to do some reconstruction predicated on what Marilee told me in order to make that point. For the context-text-intertext relation to figure in the grocery list, as I have indicated, presupposes that Marilee was able to represent that relationship to herself. An important question then arises, "How did she do so?" Given what I was able to learn from Marilee about her grocery list, I can offer a hypothesis, which could be invoked with regard to the activities of the six case study writers as well. With an adaptation of Peirce's notion of "unlimited semiosis" (as in Figure 6), I believe that it is possible to suggest—at least at the level of theory—how the triadic relation among context, text, and intertext functioned for Marilee as she constructed her grocery list. In my adaptation of Peirce, I have substituted "context" for Peirce's "object," substituted "text" for Peirce's "sign," and substituted "intertext" for Peirce's "interpretant." That is to say, representation (*aliquid stat pro aliquo*) and determination in the Peircean sense can be used to account for the triadic relation that must surely exist among context, text, and intertext if those constructs are to have any explanatory power in writing research. Accordingly, I have made two of the arrows depicting the resulting

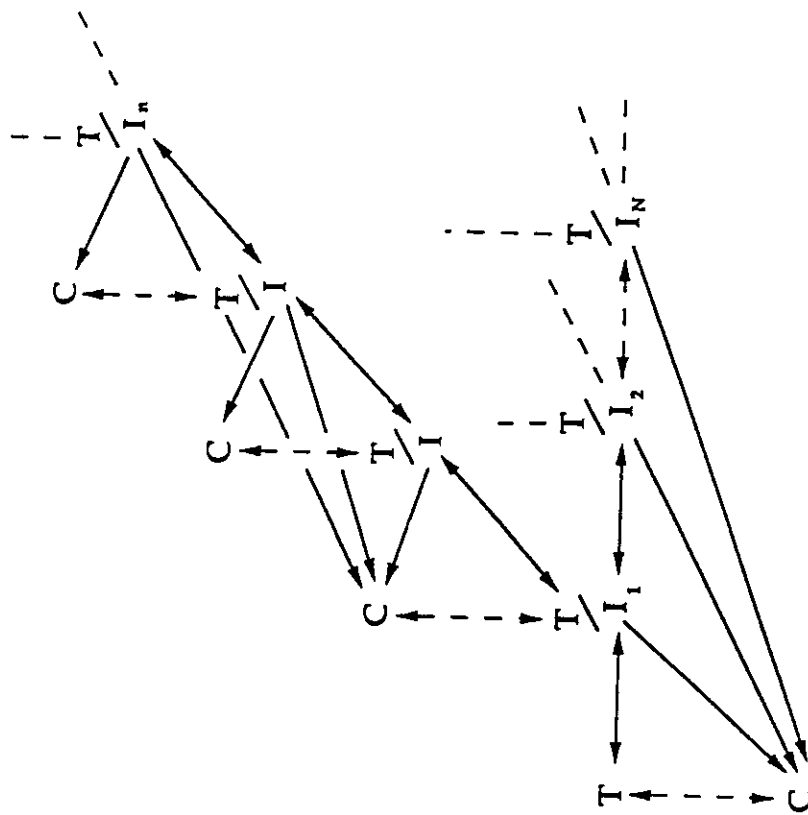


Figure 6: Semiosis of Context, Text, and Intertext

triadic relationship bidirectional to suggest (a) that the relation of a "text" to its "context" is a reciprocal one and (b) that the relation of a "text" to its "intertext(s)" is also reciprocal.

Depicting those relations as reciprocal is necessary in order to accommodate the sorts of influences that we saw operating in the individual production and the use of Marilee's grocery list. In writing the grocery list (i.e., the "text"), Marilee was influenced by her knowledge of the grocery store context; and her grocery list itself constructed the context of shopping for her as it would later construct the various familial contexts of meal preparation, the meals themselves, and so forth. The same sort of reciprocal relationship existed between the

grocery list and its various intertexts. For example, the conversation Marilee and her husband had about the projected guest meal can be seen as subsumed by an intertext of semiotically constructed meanings between Marilee and her husband. As I have suggested, *that* intertext figured in the writing of the grocery list. Moreover, the intertextual stream of which that intertext was a part would be perpetuated and enlarged both by the shopping trip and by the guest meal itself.

To indicate further not only why the context-text-intertext triadic relationship was important in the production of the grocery list and why it probably needs to be represented as I have indicated, consider what might happen if you were to take Marilee's grocery list to the supermarket without having represented to yourself very many of the contextual and intertextual influences on its production and use. Although you would recognize Marilee's list as a grocery list, it is quite unlikely that you would be able to read it in such a way that it would lead you to the Lucky Foods Store in Cupertino. Yet if you happened to enter Lucky's with the list and were sharp enough, you might actually detect the built-in relationship between the ordering of items on Marilee's list and the layout of the store. But then you would probably start running into trouble, even though you might buy the right mushrooms and even though you might figure out "broccoli," "R[omaine] lettuce," and "[B]ean sprouts." But would you look for six firm or soft kiwi fruit? Would you buy whole milk, low-fat milk, or skimmed milk? And how much? Would you know what "designer water" meant? Would you know what "True Blues" are? In Marilee's case, these very sorts of questions constituted the principal reason why Marilee did "all the shopping" in her family: As she told me, "Jim always ends up getting the wrong stuff"—a comment that I found particularly interesting because I could not think of anyone other than Marilee's husband who would come closer to sharing the intertextual knowledge that seemed to inform the writing and use of Marilee's grocery list.

My guess is that anyone reading this essay would pretty much make a mess of Marilee's trip to the grocery store, no matter how good his or her intentions and no matter how functional Marilee's grocery list was for her. And the mess that would be made of Marilee's shopping trip would demonstrate to us why writing, or any other system of meaning-making, cannot be very usefully described in terms of an encoder sending messages via some channel (with or



Figure 7: Semiotic Trace Model of Communication

without "noise") to a decoder, which is the way writing is often described. Such "transmission" models assume that meaning resides in texts, that texts are autonomous, that writers put the meaning in and readers take it out. What our examination of Marilee's grocery list reveals is that readers of "texts" are no less active constructors of meaning than writers (see, for example, Bracewell, Frederiksen & Frederiksen, 1982; Nystrand, 1986; Spivey, 1990; Tierney & Pearson, 1983). The reason is that "texts," regardless of the symbols out of which they are made, are no more than Peircean signs—no more than semiotic "traces" (see Nattiez, 1990, pp. 17-18)—that, even under the best of circumstances, suggest only a "meaning potential," to use Halliday's term, or a "semantic potential," to use Rommetveit's (1974) term, even though writers are fully capable of constraining the trace in some ways (cf. Nystrand, 1986). But as Figure 7—which resembles Nystrand's (1989) "Social-Interactive Model of Written Communication" and his model of "textual space" (Nystrand, 1982, 1989) in some ways but not all—indicates, the "meaning" suggested by the signs of the "trace" must ultimately be constructed by readers just as it is by writers. When texts—or "inscriptions," to use Latour's (1986/1988) term—are used or read by their writers, the metaphorical space between the contexts of production and use is relatively small and the intertext(s) that shape and are shaped through the text-context(s) relation would seem more or less predictable. But anytime a reader who is not the writer enters the picture, the metaphorical space between production and use widens, and the influence of alternate intertexts on the constructive processes increases dramatically. In such cases, writing and reading become processes of negotiating the intellectual and emotional space between the "self" and the "other," between the individual and the social, as the multiple voices of distinct constructive semioses mix on what might be called the battlefield of the "trace." It is for this reason that Bakhtin (1934-35/1981) insists that all discourse—including written discourse—is fundamen-

tally dialogic and never in a strict sense monologic (see also, Nystrand, 1986, 1989, 1990).

Thus it would seem reasonable to assert that readers engage in meaning-constructive activities mediated through an iterative semiotic process of internal representation that would not, in theory, be much different from the one I hypothesized for writers (see Figure 6). As in the case of a writer, a reader's internal representation of the text would shape and be shaped by his or her internal representation of the context that the text enters and by the reader's representation of the intertext(s) called into play through a situated act of reading during which the intertext(s) called up would shape and be shaped by the reader's representation of both text and context.

Let me try to particularize all this a bit. Had I done Marilee's shopping, she and her guests would have eaten grilled sirloin, not beef stroganoff; and her children would have been eating corn flakes or Special K for breakfast rather than Frosted Flakes and Captain Crunch. The projected world of family and guest meals that Marilee drew on in constructing her grocery list would have been radically reconstructed by my grocery shopping. Were I the intended user of the text Marilee wrote, my blunders in "reading" Marilee's grocery list could, of course, be represented as something of a failure on Marilee's part to establish through her text the necessary conditions for reciprocity between reader and writer (cf. Nystrand, 1986). I was not, however, the intended reader or user of Marilee's grocery list.

The probability of the context-text-intertext(s) configuration that informs a given writer's constructive semiosis matching exactly that of a given reader is fairly minimal. Hence what I write to mean will likely be read by someone else—in some way—to mean something else. The downside, of course, is that we—writer and reader—can only ever communicate approximately, which is generally the case between a "self" and an "other." But approximate communication is a negative only when it is construed as misunderstanding. Equally probable are alternate or different understandings, which may be construed just as positively as misunderstandings may be construed negatively. Indeed, it might be argued that it is the phenomenon of approximate communication that often provides a necessary—although not a sufficient—condition for the creation of new knowledge. And I should point out that any resolution of differences between the misunderstood and the newly understood will always depend on the sort of constructivist semioses I have described.

SOME AFTER WORDS

In the foregoing sections, I have argued that reconceptualizing writing (and reading) in terms of a constructivist semiotic that can operate on or with different symbol systems and that can accommodate the sorts of multisymbol collaborations through which many texts in this culture are produced has some potential for overcoming some conceptual difficulties associated with certain contemporary perspectives on writing. Using examples and analyses of situated writing as a starting point, I argued that neither approaches to writing that depend on print-linguistic formulations of writing nor approaches that insist on maintaining the "language before/during thought" assumption are capable of studying the ways writing is produced, the forms it takes, or the functions it serves. In no instance, however, have I argued for an "either-or," "this-or-that," position. Rather, I have urged a "both-and" position. Demonstrating that writing—whether process or product—occurs through the use of multiple symbol systems and without a writer necessarily adverting to a "language-before-thought" model led to my suggesting the need for a constructivist semiotic of writing.

Many particulars associated with the constructivist semiotic perspective I have proposed will need to be worked out. Two of those particulars have to do with defining "text" and "writing." I have argued that traditional linguistic-based notions of text and writing no longer have the power (if, indeed, they ever did) to explain texts and writing in a cultural sense. Although I have argued that a constructivist semiotic can provide a theoretical basis for developing more culturally viable understandings of both constructs, I have not specified how exactly those constructs ought to be understood. My sense is that those understandings will likely be developed over time through the collaborative efforts of many researchers interested in what it means to be able to write and to use texts in contemporary culture. Another set of particulars has to do with defining "context" and "intertext." Rather than trying to stipulate particular definitions for these terms, I have in the present essay tried to use those terms in ways that imply the richness of the theoretical constructs to which they refer, with "context" being something akin to a writer's representation of the externally situated or projected "self" and "intertext" being something akin to a writer's representation of the situated "other," or the "social."

The absence of hard and fast definitions (which do not presently exist in any theory of writing) of such key terms and constructs notwithstanding, the constructivist semiotic I have outlined would seem to have some immediate relevance to the study of writing generally and of situated writing particularly. By way of summary more than by way of additional argument, let me suggest five areas of relevance for the study of writing.

First, because it does not privilege a given code or a given symbol system and because it recognizes that all meaning-making is in some sense collaborative, a constructivist semiotic provides a theoretical basis for dealing with "written texts" as many texts presently exist in the world and as many more texts will surely exist as people come to rely more and more on technologies that allow "texts" to be constructed out of the "material" of different symbol systems and that allow even greater opportunities for collaboration. Recognizing that "writing" and "text" can no longer be conceived in terms of alphabetic or print-linguistic texts alone means that those who would understand either writing or reading, production or comprehension, will need to advert to a theory capable of dealing with multiple symbol systems, not so much in terms of their distinctive features but in terms of their convergences in acts of meaning-making. The constructivist semiotic I have proposed provides something of a theoretical basis for doing so.

A second area in which the constructivist semiotic I have proposed has some relevance is the combined area of writing instruction and assessment, which prompted my own interest in situated writing in the first place. The position I have set out would imply that writing instruction needs not only to "address" the sorts of activities in which the six case study writers engaged but also that it needs to reconstruct itself from the ground up on a different sort of conceptualization of "writing" and "text" than is reified in and valorized by those icons of the status quo we call "textbooks." But doing so will not be an easy task because such a reconceptualization entails not only "re-envisioning" what we teach but also how we go about it. And underlying whatever re-envisioning might occur will be that constantly perplexing question of what we mean when we talk about writing ability. And if the implications for writing instruction are large and perplexing, they are equally so for writing assessment, particularly because writing assessments at local, state, and national levels so greatly influence the nature of writing instruction and curriculum.

A third area for which the constructivist semiotic would seem to have implications is the general area of learning. The theoretical position I have set out, I think, allows us to speculate profitably about the conditions under which learning occurs and about how knowledge (and hence expertise) develops. Based on the trace model I have described, studies of the constructive semioses of people working or learning in different "knowledge domains" should yield insights into how learning and creativity occur, about how expertise develops, and about how differences between experts and novices can be understood. Such studies would be particularly relevant to writing research because many of the studies of situated writing that I cited near the beginning of this essay suggest how closely related disciplinary writing and disciplinary expertise can be. Moreover, using the trace model of constructive semiosis as an interpretive tool should yield valuable information—for people with diverse cultural and social backgrounds—about what learning to write in or for different contexts actually entails and about how the production and use of writing, defined semiotically, enables and supports the development of expertise in particular "knowledge domains."

A fourth area is more strictly a methodological one. What I have in mind here is the gap that currently exists between, say, anthropological and psychological approaches to the study of writing, in particular with respect to the units of analysis valorized by the two respective approaches. Whereas the anthropological approach seems to assume "culture" as the basis for understanding individual acts and behaviors, the psychological approach seems to assume "individual acts and behaviors" as the basis for understanding culture. In either case, moving between the two units of analysis is fairly problematic if one is less than open-minded about methodologies. The gap between the respective units of analysis is not an insignificant one because it raises questions about the relative status of each unit. My sense is that the framework I have outlined does a good deal to bridge that gap by hypothesizing a necessary connection between the two vis-à-vis the context-text-intertext(s) configuration that undergirds the semioses by which individuals in particular situations participate in the construction of the "non-hereditary memory" (Lotman, 1977b, p. 213) that is culture.

Finally, and not unrelated to the former, it seems to me that the framework I have proposed for studying writing implies that the current division of the field of writing research into textual, psycho-

logical, and social perspectives is itself not defensible, regardless of whether we seek to understand writing from the standpoint of processes or products, or both. Given the framework I have proposed and the reconceptualization of writing and the study of writing it implies, the boundaries constructed and maintained around the three perspectives appear to dissolve. In this, the world of writing seems a bit like our planet Earth: The oceans that separate land masses, as it turns out, also join them. The issue then becomes one of navigation, not one of separation. And my sense is that the constructivist semiotic framework I have proposed has considerable potential for charting those very waters.

NOTES

1. At the outset, I want to acknowledge a number of debts—in addition to those already noted. First, I am grateful to a number of people who have generously shared their reactions to presentations I have made based on ideas developed more fully in the present essay. Among those colleagues are Mark Aulls, Deb Brown, Joanne Dillabough, Linda Flower, Kay Halseck, George Hillocks, Jim Kinneavy, Fred Lightall, Peter Medway, Mike Rose, Pete Smagorinsky, Nancy Spivey, Janica (The Moment) Tessier, and Rob Tierney. Greater debts are owed Elaine Chin and David Elias. In the wake of the various Stanford University "projects" on which we collaborated and of our countless interactions during courses and dissertations, both will no doubt recognize in the present essay several ideas, and perhaps even some words, for which the three of us as individuals could never establish ownership. The same sort of debt—but an even larger one—is owed Roger Cherry, with whom I have—for several years now—been kicking around, arguing about, and fussing over many of the ideas set out in the present essay. I can only hope that the present essay is not quite an embarrassment to such excellent and spirited collaborators.

I have also to acknowledge two both general and specific debts. The first is owed to Marty Nystrand—via conversations over the years and his publications, particularly his *The Structure of Written Communication* (1986), portions of which I read in typescript before it was published, but also his other work (cited elsewhere), all of which articulates a social theory of writing. Nystrand and I share many concerns, but we sometimes disagree on how some of those concerns ought to be represented and addressed, as in the case of his "language after the ideational fact" critique of Flower and Hayes's cognitive process theory. Yet in spite of our differences, Nystrand has repeatedly called my attention to critical issues in writing and the study of writing. The second debt is owed to Bob Bracewell, whose "Cognitive Processes in Composing and Comprehending Discourse" (Bracewell, Frederiksen, & Frederiksen, 1982), "Investigating the Control of Writing Skills" (Bracewell, 1983), and "Le diagnostic cognitif dans la rédaction" (Bracewell & Breuleux, 1989a; see also 1989b) I regard as being among the best work done to date that takes a cognitive perspective on writing. Bracewell has served as a

sounding board, sometimes even willingly, for many of the ideas developed in the present essay. My hope is that the present essay will provide a basis for bringing together the positions represented in the work of these two colleagues as well as positions represented in the work of other colleagues.

2. "Semiotics" refers, in general, to the study of signs, sign systems, and sign use. To borrow Eco's definition, "semiotics is in principle the discipline studying everything which can be used in order to *lie*" (1976, p. 7; italics in the original). It is not entirely clear to me whether "semiotics," which I put in quotes because there seems to be no consensus as to whether the phenomenon should be known by that name (cf. "linguistics") or "semiotic" (cf. "rhetoric") or "semiology" (cf. "biology") or ought to be considered a discipline or a way of thinking that crosses disciplinary boundaries. Without any claim on my part for comprehensive coverage, the works below will serve as a broad-based introduction to semiotics. For readers who are interested in the history of semiotics from classical antiquity forward, I recommend Deely (1978, 1982), Clarke (1990), which interweaves primary texts and historical commentary, and Innis (1985), which includes selections from major contributors to semiotics dating from Peirce in the 19th century through Sebeok in the 1970s. For collections that represent fairly well the range of contemporary semiotic thinking, I recommend Sebeok (1977) and Blonsky (1985). With regard to semiotic thinking in recent times, two traditions seem to dominate, one traceable to Saussure (1922/1959) and the other to Peirce (1931-1958, particularly Vols. 2 and 5), whose influence in some cases appears mediated through the work of Morris (1938, 1946, 1964), an observation for which I am indebted to Bruno Emond (personal communication). Semioticians following the Saussurian tradition have typically focused almost exclusively on linguistic signs, and those following the Peircean tradition have generally seen semiotics less narrowly. For contemporary formulations and applications of semiotic theory, see Baron (1981), Barthes (1964/1967), Eco (1976, 1979, 1984), and Sebeok (1972, 1979/1988, 1991). To my knowledge, the most comprehensive overview of semiotics and semiotic thinkers in English is Nöth's (1990) *Handbook of Semiotics*, which is an enlarged revision of Nöth's (1985) earlier *Handbuch der Semiotik*. The *Handbook* probably contains the most extensive bibliography on semiotics to appear in a single volume in English. The role of semiotic thinking in anthropology, which is not covered as systematically as it might have been in Nöth's *Handbook*, seems to me particularly relevant to the study of writing. In addition to some of the works cited above, see Cohen (1985), Coertz (1973), Singer (1978, 1984), and some of the essays collected in Hymes and Gumperz (1970) and in Winner & Umiker-Sebeok (1979).

3. A systematic review of this literature is not crucial to the arguments I advance. Nevertheless, readers may wish to refer to the various essays collected in such volumes as those edited by Bazerman and Paradis (1991), Matalene (1989), Odell and Goswami (1986), and Witte, Nakadate, and Cherry (in press); to book-length studies such as those of Bazerman (1988), Brodkey (1987), Flower, Stein, Akerman, Kantz, and McCormick (1990), and Swales (1990); and to individual articles such as those by Clark and Doherty-Farina (1990), Doherty-Farina (1986), Dyson (1984), Herrington (1985), Himley (1986), McCarthy (1987), and Myers (1985a, 1985b). Both Dyson's and Himley's essays provide good illustrations of children's representations of "writing" and "texts."

I should also point out that in recent years scholars have begun looking at the role of visual representation in science writing. A quite provocative collection of such scholarship has recently been assembled by Lynch and Woolgar (1988). Among the essays in that volume, the ones by Latour (1986/1988), Amann and Knorr Cetina (1988),

Lynch (1988), Bastide (1988), Myers (1988), and Law and Lynch (1988) are extremely suggestive with regard to thinking more broadly about "text" than writing researchers typically do. Myers' essay provides a brief but clearly focused overview of previous important studies in the area. With regard to Latour's (1986/1988) treatment of "inscriptions" and the use of two-dimensional flat surfaces in scientific representations, it is interesting to speculate with regard to the students studied by Donlin, Bracewell, Frederiksen, and Dillinger (1992 [this issue]) how much closer the students' "texts" instructing people to use the Bank Street Writer would have been to the "expert model" had those students been working in a "visual" or in combined visual and print-linguistic media rather than in a print-linguistic medium.

4. Geertz (1975) and Sholler (1973, 1981) argued, in effect, that the concept of "personhood" appears in all "human groups" as a "substantive universal" and functions as the principal means of distinguishing between "self" and "other," which distinction is necessary for maintaining and repairing social order (see Sholler, 1981, p. 280). Indeed, notions of normative behavior and performance (and their contraries) in all societies seem to depend in a fundamental way on the notion of "personhood" and what it implies about differences between "self" and "other." Any attempt to understand "otherness" or difference in human terms always presupposes an understanding of "personhood," which must itself be understood on three planes—the genetic (including the biological, the physiological, and the neurological), the psychological, and the social—all of which constantly interact with one another through, I would argue, sign systems that operate within and between the various planes. It is my belief that something like this conceptualization underlies Foucault's *Madness and Civilization* (1961/1965), *The Birth of the Clinic* (1963/1973), and *Discipline and Punishment* (1975/1977), even though Foucault seems principally—at one level, at least—concerned with how "otherness" (and, hence, "personhood") gets defined or constructed through different social institutions at different times. With Foucault's work providing a backdrop, it is interesting to read McCarthy's (1991) insightful analysis—which I regard as more semiotically oriented than McCarthy knows (and that's not a criticism)—of the "epistemological and textual consequences" (p. 363) of one psychiatrist's use of the current version of the American Psychiatric Association's (1980) descriptive and taxonomic *Diagnosis and Statistical Manual of Mental Disorders* known as *DSM-III*. McCarthy points out that the *DSM-III*'s "definitions of many disorders were established on the basis of the developers' clinical experience and thus are controversial and have been called arbitrary and incomplete," and further, that the "developers of *DSM-III* concede that these allegations are true (Spitzer, Williams, and Skodol [1983])" (p. 359). And commenting on the potency of the "biomedical model" that underlies *DSM-III* and how that model "dominates theory and practice," McCarthy, quoting Mishler et al. (1981, p. 1), points out that the model is "often understood as the representation or picture of reality rather than understood as a representation" (p. 360). It is to me interesting how compatible the word *representation* in a semiotic sense is with McCarthy's demonstration of how *DSM-III*, which is itself a representation (i.e., a representation of a representation), "shapes reality" for the psychiatrist and "shapes what she knows about mental illness and how she communicates that knowledge" (p. 359). In this regard, McCarthy shows how the *DSM-III* "controlled not only the information" the psychiatrist "selected as significant, but also how she analyzed that information, how she reasoned from her data to reach a diagnosis" (pp. 365-366). McCarthy's demonstration illustrates how institutions, even when defined as disciplines or disciplinary commu-

nities such as psychiatry and counseling psychology, once they have acquired power and authority (to use Foucault's terms) through the development and promotion of specialized knowledge, however tentative and indeterminate that knowledge may be, can then construct—through interpretations (which would be, at least, third-level representations) of both verbal and nonverbal symbols—even such fundamental cultural constructs, such as substantive universals, as "personhood" (and, of course, "otherness"). McCarthy's approach is, it seems to me, consistent with Hutchinson's (1988) approach to institutions in *Dwelling on the Threshold*. Whether the psychiatrist McCarthy studied produced a diagnosis that can be considered "true" or "valid" in any objective sense simply cannot be known. But the diagnosis would, I suspect, be very "true" in a social sense and in a psychological one. In a social sense, the diagnosis would be "true" because it would be carried forward in time on a stream of discourses through the vehicles of, for example, insurance forms and school records, which always traffic primarily in the semiotics of "self" and "other." And in a psychological sense, the diagnosis would be "true" because it would enter the psychological stream of discourses through which the individual child would actively construct or reconstruct his self-concept (i.e., his own internal representation of his "personhood") in relation to his internal representation of "otherness"). McCarthy's study illustrates in many ways, I believe, the process of constructive semiosis that I develop in the present essay.

5. Technological change frequently leads to new genres and forms, one example of which comes readily to mind, although with regard to "texts" not generally included within the domain of writing, namely, the evolution of "pop" and "rock" music, a field in which the term (*songwriter*) is quite common. Those old enough to recall the late 1950s when the recording industry developed the long-play album will remember that for several years thereafter LPs were little more than anthologies of "singles," essentially five 78s placed one after another on one side of an LP. And although trends in radio play, which valorize the 3-minute wonder, continue to dictate the habits of a large segment of the listening public, songwriters (and so far as I can tell, only those who were also singers) discovered the potential of the new medium represented by the LP, which permitted not only longer songs to reach the listening public but also sets of thematically (whether defined with reference to lyrics or sound or both) linked songs of a single artist, thus giving rise to what Neal Buck (personal communication) insists on referring to as "album-oriented rock," a phrase that presupposes a broad and pluralistic notion of "rock" but one altogether appropriate because songwriters/performers like Bob Dylan and Van Morrison keep demonstrating how different musical traditions (e.g., Delta blues, jazz, folk, Chicago blues, country and western, rhythm and blues, gospel) can be assimilated into "rock" sounds and lyrics. (Incidentally, commentators on and historians of "rock" regularly discuss what might be called the "intertextuality of rock," even though they don't use the terms that are based on Bakhtin's work.) Readers interested in the semiotics of music will find Nattiez's (1990) *Music and Discourse: Toward a Semiology of Music*, which deals principally with classical music, a fascinating adventure.

6. Readers familiar with the work of Morris (1946) and Kinneavy (1971/1980), who draws on Morris in this regard, will recognize in Halliday's textual-ideational-interpersonal triad vestiges of Morris's syntactic-semantic-pragmatic "semiotic" triad which for some years defined the general boundaries within the field of linguistics. It must be remarked that Halliday's attempt to deal with all the components of the semiotic/linguistic triangle distinguishes him from most other linguists.

7. I should also point out that Faigley (1985)—who seems to follow Halliday's ideas rather closely—partitions the study of writing triadically—into the "textual," the "individual" (i.e., cognitive), and "social" perspectives—and argues the presumed greater efficacy of the social. Elsewhere, Faigley (1986) posits a triad for "competing theories of process" that comprises the "expressive," the "cognitive," and the "social" and then urges researchers "toward a synthesis" (see pp. 537-539) of the three "competing theories." Although it is not entirely clear how Faigley's two triads relate to one another since they share two concepts but not a third and although it is not clear why the "social" would be privileged in the 1985 essay and a "synthesis" of the "expressive," "cognitive," and "social" in the 1986 essay, it is clear that both of Faigley's triads presuppose writing as print linguistic. I also see Halliday's triad as paralleling in some ways Nystrand's (1989; but which is also developed at different levels and to different degrees in Nystrand, 1982, 1986, 1990) characterizations of three general theoretical perspectives on meaning-making where traditional alphabetic texts are concerned: the formalist (which assumes that meaning resides in texts), the idealist (which holds that meaning resides in writers or readers), and the interactionist (which sees meaning as negotiated through a dialogic relation between writer and reader). Nystrand's own "interactionist" perspective is articulated as a set of corollaries that can be represented as testable hypotheses. However, Nystrand's theory seems in some senses offered only as a way of dealing with language in the traditional sense.

8. There are 41 of these studies, through 11 of which I attempted to account for all the writing each of 11 writers did during particular "workdays." Of those 11 writers, 4 were students from junior high school through graduate school and 7 were college-educated people in different occupations. Although the "on-site observations" of these 11 writers were tied to particular workdays, each required a great deal of subsequent "field work" because the dispensation of documents either "in progress" or completed during the given workdays could often not be determined until sometime later. The remaining case studies all focused primarily on individual written documents in particular school or workplace settings. All of the studies were motivated by the need to learn more precisely what it means to be able to write, a question that very early on I began representing to myself as two subordinate questions: "What is required in order for writers to make transitions across different contexts for writing (e.g., from school to different workplace settings)?" and "What sorts of transformations in individual writers do such transitions entail or cause?" As the above descriptions based on six cases suggest, there is a great deal of theoretical and conceptual work to be done before either the global question of what the writing ability construct might include or the two subordinate questions can be addressed in anything but a partial way.

9. In talking about the case studies (e.g., Witte, 1988, 1989, 1991a, 1991b, 1991c, 1991d), I have typically distinguished among four types of collaboration, which can overlap during the production of any given text: (a) the *Traditional*, which refers to two or more writers working jointly on the same text and assuming equal responsibility for the text produced; (b) the *Committee*, which refers to two or more people working on the same text but having different levels of responsibility for the text produced, even to the extent that the person actually drafting the text has little actual responsibility for it and to the extent that the person ultimately responsible for the completed text may never have "put pen to paper" during its production; (c) the *Incidental*, which refers to brief, often highly focused interactions (which may be either planned or unplanned and writing directed or not) between people (only one of which need be the "writer")

through any medium; and (d) the *Covert*, which refers to writers' interactions (which need not be conscious and often are not) with other persons through both linguistic and nonlinguistic texts.

10. I should point out that Bazerman (in press) argues that Kinneavy's communication triangle (with the three angles representing the "encoder," "decoder," and "real-ity" and the area enclosed representing the "signal") ought to be reconstructed as a "neo-Kinneavian pyramid" by adding "intertextuality" as the necessary fourth point. Bazerman's argument for his proposed new geometry is that, for Kinneavy, "context" exists only outside of discourse and that some new configuration and conceptualization is necessary to bring it in. Bazerman may, of course, be right, but Bazerman's position may not adequately account for the fact that Kinneavy (1971/1980) (a) defines "discourse study" as "the study of the situational uses of the potentials of language" (p. 22), (b) notes that "discourse . . . is characterized by individuals acting in special times and places" (p. 22), and (c) insists that "cultural context and situational context determine text" (p. 24), which suggests a reciprocal relation between text and context.

11. For an understanding of Bakhtin's notion of language as "dialogized heteroglossia," it is useful to separate the two components of the concept and to treat both as adjectives modifying the term *language*. It is also important to realize that Bakhtin's best-known statements come from an essay on the novel. At any rate, the separation of the two components allows us to see Bakhtin's opposition to two not unrelated theoretical positions prominent in his day, namely, formalist literary theory and Saussurian-based linguistic theory. With regard to the former, Bakhtin (1934-35/1981) notes that "from the point of view of stylistics, the artistic work as a whole—whatever that whole might be—is a self-sufficient and closed authorial monologue, one that presumes only passive listeners beyond its own boundaries" (p. 274). In opposition to this formalist representation of text as monological and autonomous, Bakhtin proposes that "we imagine the work as a rejoinder in a given dialogue, whose style is determined by its interrelationship with other rejoinders in the same dialogue (in the totality of the conversation)" (p. 274). With regard to the orientation of Saussurian linguistic thought, Bakhtin observes that the focus is on "the firmest, most stable, least changeable and most mono-semantic aspects of discourse—on phonetic aspects first of all—that are further removed from the changing socio-semantic spheres of discourse" (p. 274). In Saussurian linguistics and—I might add—semiotics, "The direct word . . . encounters in its orientation toward the object only the resistance of the object itself . . . , but it does not encounter in its path toward the object the fundamental and richly varied opposition of another's word" (p. 276). For Bakhtin, and this is the basis of his "dialogic heteroglossia," the "word" (in the sense of "text"; see Emerson, 1981/1986) becomes the fundamental unit of analysis and "no living word relates to its object in a singular way: between the word and its object, between the word and the speaking subject, there exists an elastic environment of the other, alien words about the same object, the same theme" (p. 276). According to Bakhtin,

any concrete discourse (utterance) finds the object at which it was directed already as it were overlain with qualifications, open to dispute, charged with value, already enveloped in an obscuring mist—or, on the contrary, by the "light" of alien words that have already spoken about it. It is entangled, shot through with shared thoughts, points of view, alien value judgments and accents. The word, directed toward its object, enters a dialogically agitated and tension-filled

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environment of alien words, value judgments and accents, weaves in and out of complex interrelationships, merges with some, recoils from others, intersects with yet a third group; and all this may critically shape discourse, may leave a trace in all its semantic layers, may complicate expression and influence the stylistic profile.

The living utterance, having taken meaning and shape at a particular historical moment in a socially specific environment, cannot fail to brush up against thousands of living dialogic threads, woven by the socio-ideological consciousness around the given object of utterance; it cannot fail to become an active participant in social dialogue. (p. 276)

Thus it is that, for Bakhtin, "the prose writer confronts a multitude of routes, roads and paths that have been laid down in the object by social consciousness . . . [and] witnesses as well the unfolding of social heteroglossia surrounding the object, the Tower-of-Babel mixing of languages that goes on around any object," which makes the object "a focal point for heteroglot voices among which his [the writer's] own voice must also sound," voices that "create the background necessary for his own voice" (p. 278). But the "internal dialogism of the word" is not determined merely by past and present voices because, according to Bakhtin, by "forming itself in an atmosphere of the already spoken, the word is at the same time determined by that which has not yet been said but which is needed and in fact anticipated by the answering word" (p. 280).

12. For a respectable and interesting attempt to make some sense of the terminological and conceptual thicket that characterizes research on knowledge, primarily within the field of cognitive psychology, see Alexander, Schallert, and Hare (1991).

13. Because I do not read Russian, I cannot judge whether the difficulties to which I have pointed are the result of translation. I can, however, point to the use of the words in the earlier English translation (Vygotsky, 1934/1962) which, though missing paragraphs included in the 1986 translation that I have quoted above, suggests the same uncertainty. For example, when Vygotsky writes about the inadequacy of association, attention, imagery, and so on, he states that "they are all indispensable, but they are insufficient without the use of the sign, or word, as the means by which we direct our mental operations" (p. 58; italics mine). And on the following page, we find that "learning to direct one's own mental processes with the aid of words or signs is an integral part of the process of concept formation" (p. 59; italics mine). The former passage, with "or word" set off by commas, could signify an intended synonymy; the latter passage, however, seems not to support the claim of synonymy. As I have indicated in my discussion, the first of these two passages is rendered in the 1986 translation as "Words and other signs" (p. 106), thus eliminating any suggestion of synonymy. In the 1986 translation, the second of the two passages quoted above appears on p. 108 in the exact form as in the 1962 translation.

14. I call specific attention to the Flower and Hayes theory here because it is targeted by Bizzell, Faigley, and Nystrand as the cognitive perspective on writing. Such, however, is actually not the case. According to Alain Breuleux (personal communication), Flower and Hayes deal with control processes and strategies in writing (e.g., planning) only at an abstract level that needs to be elaborated and specified in more detail both in terms of theoretical models of planning and in terms of methods for the analysis of writers' planning in think-aloud protocols (cf. Breuleux, 1990, 1991). I should also point

out that Bob Bracewell (personal communication) insists that critiques of the Flower and Hayes theory (e.g., Bizzell, 1982; Faigley, 1985, 1986) seriously misrepresent key components of both the Flower and Hayes model and of cognitive science in general. Discussion of such matters, however, is beyond the scope of the present essay.

15. I am indebted to Elaine Chin for sending me a copy of Leoniev's paper.

16. Without giving a title, Sebeok (1991) cites the work of the Moscow-Tartu semioticians A. A. Zaloznjak, V. V. Ivanov, and V. N. Toporov as collected in Lucid (1977)—which was not available when needed for this reference—as the source for the term "primary modeling system," and he posits Lotman's (1977a) "Primary and Secondary Communication-Modeling Systems" also in Lucid (1977) as representing the "canonical delineation," which defines a "primary modeling system" as "a structure of elements and rules for combining them that is in a state of relaxed analogy to the entire sphere of an object of knowledge, insight or regulation. Therefore a modeling system can be regarded as a language. Systems that have a natural language as their basis and that acquire supplementary superstructures, thus creating languages of a second level, can appropriately be called secondary modeling systems" (quoted from Sebeok, 1991, pp. 49-50).

17. The literature on Peirce is large, ranging from treatments of his philosophical pragmatism (e.g., Gallie, 1966) to efforts to construct a formal grammar from his semiotic (e.g., Emmond, 1988). Readers will find references to and discussions of Peirce's work in many, if not most, of the works cited previously in this essay, particularly in those listed in Note 1 above. Peirce's influence in semiotics has been large, most notably in and through the work of Charles Morris, Thomas Sebeok, and Umberto Eco (all of whom I have already cited). Peirce is not easy to read, and he is not entirely consistent in the terminology he uses in his writings on semiotics, which are spread across about a half century and interspersed among writings on many different subjects. In addition to works already cited, those of Fisch (1978, 1986) and Zeman (1977) provide good overviews of Peirce's semiotic theory. Having already referred to Ogden and Richards' (1923/1946) *Meaning of Meaning*, I should point out that their position is influenced in important ways by Peirce, and they provide an overview of Peirce's theory in their Appendix D (see pp. 279-290). I have referred to a "simplified version" of Peirce's theory partly because I do not deal explicitly with, for example, the philosophical foundations (e.g., "Firmness," "Secondness," and "Thirdness" as ontological, universal categories) of Peirce's theory or with his complex schemes for classifying signs (e.g., "Symbol," "Icon," and "Index"; "Qualisigns," "Sinsigns," and "Legisigns"). My not treating such topics in this essay should not be taken as a "sign" that those topics have no relevance to the present considerations, even if I have not specifically worked them into the view of writing I advance in the present essay.

18. In accord with standard practice in Peirce scholarship, all Peirce quotations in the present essay are, unless otherwise indicated, from the eight volumes of his *Collected Papers* (1931-1958). Also in accord with standard practice, all citations to Peirce's work are to volume numbers and "paragraph" numbers, not to page numbers, in the *Collected Works*; such are the numbers (i.e., 2.228) that appear in parentheses after the following quotation.

19. Figure 4 is based on a similar figure appearing in Nattiez (1990, p. 6, and 1977, p. 126). According to Nattiez (1990), the original figure appears in Granger (1968).

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