The idea that writing is a process and that the writing process is a recursive cognitive activity involving certain universal stages (prewriting, writing, revising) seemed quite revolutionary not so many years ago. In 1982, Maxine Hairston hailed "the move to a process-centered theory of teaching writing" as the first sign of a paradigm shift in composition theory (77). But even by then "process, not product" was the slogan of numerous college textbooks, large and small, validated by enclosure within brightly-colored covers with the imprimatur of Harper & Row, Macmillan, Harcourt Brace Jovanovich, Scott, Foresman. So revolution dwindles to dogma. Now, perhaps, the time has come for some assessment of the benefits and limitations of thinking of writing as essentially—and simply—a cognitive process.

Motivation for the paradigm shift in writing theory perhaps came first from writing teachers increasingly disenchanted with red-inking errors, delivering lectures on comma splices or on the two ways to organize a comparison-contrast essay, and reading alienated and alienating essays written from a list of topic sentences or in the five-paragraph format. Reacting against pedagogy that now seemed completely ineffective, we developed methods that required students to concentrate less on form and more on content, that required them to think. We decided to talk about ideas rather than forms in the classroom and sent students off to do various kinds of free writing and writing using heuristics in order to find out what they thought about a topic—best of all, we found we didn't have to read any of this essential but private and exploratory "prewriting." We told students they had primary responsibility for the purpose of their writing: only they could decide what was important to them to write about, only they could tell whether what they intended was actually fulfilled in the writing they produced. We decided to be friendly readers rather than crabby Miss Fidditches; we said things like, "You have lots of ideas," and, with Pirsig's Phaedrus, "You know quality in thought and statement when you see it," instead of "Your essay does not clearly develop a point," and "You have made many usage errors here."

These ideas were in the air—and in print. We developed them in talking with colleagues, in reading the advice of fellow teachers Peter Elbow and Donald Murray. We found further support for them in similar ideas being developed by literary theorists, educational psychologists, and linguists—some of whom were

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also writing teachers. In literary theory the shift from a New Critical emphasis on the text to a post-structural emphasis on the reader paralleled the shift from product to process in writing theory. As Jonathan Culler and Stanley Fish adapted the nouvelle French notions to American tastes, the complementarity between reading and writing in terms of their both being mental processes became clear. Culler states that readers possess "literary competence," that they make sense of texts by applying various conventions that explain how one is to interpret the cues on the page. Writers, ideally, possess the same literary competence. Fish states that readers are guided by interpretive strategies, that these strategies are constitutive of interpretive communities, and that the strategies originate with writers. Culler's conventions, Fish's strategies, are not present in the text; rather, they are part of the mental equipment of writers and readers, and only by examining this mental equipment can we explain how writers and readers communicate.

In the fields of educational psychology and linguistics, research on how readers process texts also revealed an active reader who used strategies to recreate meaning from the cues on the page. These strategies implied certain expected structures in texts. When adopted by writing teachers, readers' expectations became a new way of explaining "errors" in student writing and a new rationale for instruction on matters of form. George Dillon, expanding David Olson's analysis, attributes much of the incomprehensibility of his students' writing to their inability to shift from the conventions of utterance to the conventions of text, conventions that enjoin explicitness, correctness, novelty, logical consistency, and so forth. Linda Flower and Joseph Williams explain how readers link new information to old information in order to comprehend texts, and they advise students, consequently, to supply context and to clearly mark old and new information in sentence structure.

Gradually, as interest in writing theory increased, a model of writing as a cognitive process was codified, and the unified perspective the model offered in turn allowed us to redefine other vexing problems: the relation between grammar and writing, the function of revision. These were all undoubtedly beneficial changes. But theoretical models even as they stimulate new insights blind us to some aspects of the phenomena we are studying. The problem with the cognitive process model of writing has nothing to do with its specifics: it describes something of what writers do and goes some way toward explaining how writers, texts, and readers are related. But the belief on which it is based—that writing is thinking and, thus, essentially a cognitive process—obscures many aspects of writing we have come to see as not peripheral.

Like all theoretical models, the cognitive process model projects an ideal image, in this case an image of a writer that, transmitted through writing pedagogy, influences our attitudes and the attitudes of our students toward writing. The ideal writer the cognitive process model projects is isolated from the social world, a writer I will call the solitary author. The solitary author works alone, within the privacy of his own mind. He uses free writing exercises and heuristics to find out what he knows about a subject and to find something he wants to say
to others; he uses his analytic skills to discover a purpose, to imagine an audience, to decide on strategies, to organize content; and he simulates how his text will be read by reading it over himself, making the final revisions necessary to assure its success when he abandons it to the world of which he is not a part. The isolation of the solitary author from the social world leads him to see ideas and goals as originating primarily within himself and directed at an unknown and largely hostile other. Writing becomes a form of parthenogenesis, the author producing propositional and pragmatic structures, Athena-like, full grown and complete, out of his brow. Thus, the solitary author perceives the functions that writing might serve in limited and abstract terms. All four of the major pedagogical theories James Berlin describes assume that the function of writing is solely cognitive, a matter of discovering the truth and communicating it: the solitary author can express his feelings, pass on information, persuade others to believe as he does, or charm others with his exquisite phrases (cf. Kinneavy's taxonomy of the aims of writing). Finally, the solitary author sees his writing as a goal-directed piece of work, the process of producing a text.

Such images of the solitary author inspire a great deal of what goes on in writing classes today—and more of what is recommended in composition textbooks, especially those that depend on the latest theory. But many classes still escape its tyranny, classes in which students engage in group work, activities such as collaborative brainstorming on a topic, discussions and debates of topics or readings, writers reading their texts aloud to others, writers editing other writers' texts. Some teachers eschew setting writing assignments (even writing assignments that are "rhetorically based") in favor of letting writing emerge from the life-situations of their students, whether this writing takes the form of papers that fulfill requirements for other courses, letters written for employment or business purposes, journals kept as personal records, reports of projects completed or in progress. And in some classes, students even use writing to interact with one another: they write suggestions to their teacher and to other students; they produce class newspapers full of interviews, jokes, personal stories, advice, information.

Such changes in writing pedagogy indicate that the perspective allowed by the dominant model has again become too confining. I suggest that what goes on in these classes signals a growing awareness that language and texts are not simply the means by which individuals discover and communicate information, but are essentially social activities, dependent on social structures and processes not only in their interpretive but also in their constructive phases. I am not, of course, the only—or even the first—writing theorist to notice this. In 1981, for example, Kenneth Bruffee argued that "writing is not an inherently private act but is a displaced social act we perform in private for the sake of convenience" (745). And, more recently, James A. Reither, summarizing the work of four other prominent theorists, comes to the same conclusions I have as the beginning point of his attempt to redefine the writing process:

the issues [Larson, Odell, Bizzell, and Gage] raise should lead us to wonder if our thinking is not being severely limited by a concept of process that
explains only the cognitive processes that occur as people write. Their questions and observations remind us that writing is not merely a process that occurs within contexts. That is, writing and what writers do during writing cannot be artificially separated from the social-rhetorical situations in which writing gets done, from the conditions that enable writers to do what they do, and from the motives writers have for doing what they do. (621)

The idea that language use is essentially social also underlies much current work in literary theory and sociolinguistics. David Bleich proposes a literature classroom in which students transform their initial responses to a text into communally negotiated and thus valid interpretations: "although the resymbolization of a text is usually a fully private affair, it is always done in reference to some communal effort" (137). Fredric Jameson, perhaps the foremost of the neo-Marxist theorists, argues that interpretation "must take place within three concentric frameworks, which mark a widening out of the sense of the social ground of a text" (75). Among linguists, William Labov is renowned for his demonstrations that the so-called verbal deprivation of children in ghetto schools is an artifact of the means of data collection, face-to-face interviews of black children by white adult investigators, and that "the consistency of certain grammatical rules [of black English vernacular] is a fine-grained index of membership in the street culture" (255). And in Ways with Words, a book already nearly as influential as Labov's Language in the Inner City, Shirley Brice Heath delineates the complex relationship between children's differential acquisition of reading and the uses of and attitudes toward texts in their home communities.

Just as such research calls for new models of the interpretation of literature and of language use, so too do the intuitively developed methods we are now beginning to use in writing classes and in literacy programs call for a new model of writing. Describing such a model explicitly will lend coherence to these intuitions by bringing out the assumptions on which they are based, illuminating aspects of writing that we have perceived but dimly heretofore through the gaps in the cognitive process model.

What I would like to propose is an ecological model of writing, whose fundamental tenet is that writing is an activity through which a person is continually engaged with a variety of socially constituted systems. Ecology, the science of natural environments, has been recently mentioned by writing researchers such as Greg Myers, who, in his analysis of the social construction of two biologists' proposals, concludes: "Like ethologists, we should not only observe and categorize the behavior of individuals, we should also consider the evolution of this behavior in its ecological context" (240). The term ecological is not, however, simply the newest way to say "contextual"; it points up important differences between the model I am proposing and other contextual models such as Kenneth Burke's dramatistic pentad.

Such models, oddly, abstract writing from the social context in much the way that the cognitive process model does; they perceive the context in which a piece of writing is done as unique, unconnected with other situations. Kenneth
Burke's is perhaps the best contextual model that is applied to writing; Burke develops a heuristic for interrogating the immediate situation in order to impute motives for individual language acts. The terms of his pentad are conceived of as formal or transcendent, and Burke tellingly labels his description of them a "grammar," a model of "the purely internal relationships which the five terms bear to one another" (xvi). Actual statements about motives utilize these "grammatical resources," but the grammar determines the statements only in a formal sense, much as syntactic rules predict the occurrence of certain structures in sentences. One's perspective, or "philosophy," crucially guides how the terms will be applied, and, since Burke proposes no link between the grammar and the perspective, what perspective is chosen appears to be arbitrary, and, perhaps, trivial: "War may be treated as an Agency, insofar as it is a means to an end; as a collective Act, subdivisible into many individual acts; as a Purpose, in schemes proclaiming a cult of war" (xx). Thus, though the grammar allows one to assign labels to important aspects of a situation, it does not enable one to explain how the situation is causally related to other situations. Burke is perhaps more aware of the limitations of his model than are some of his disciples. The description of linguistic forms the pentad enables is, in his opinion, "preparatory": "the study of linguistic action is but beginning" (319).

In contrast, an ecology of writing encompasses much more than the individual writer and her immediate context. An ecologist explores how writers interact to form systems: all the characteristics of any individual writer or piece of writing both determine and are determined by the characteristics of all the other writers and writings in the systems. An important characteristic of ecological systems is that they are inherently dynamic; though their structures and contents can be specified at a given moment, in real time they are constantly changing, limited only by parameters that are themselves subject to change over longer spans of time. In their critique of sociobiology, R. C. Lewontin et al. describe how such systems operate:

all organisms—but especially human beings—are not simply the results but are also the causes of their own environments. . . . While it may be true that at some instant the environment poses a problem or challenge to the organism, in the process of response to that challenge the organism alters the terms of its relation to the outer world and recreates the relevant aspects of that world. The relation between organism and environment is not simply one of interaction of internal and external factors, but of a dialectical development of organism and milieu in response to each other. (275)

In place of the static and limited categories of contextual models, the ecological model postulates dynamic interlocking systems which structure the social activity of writing.

The systems are not given, not limitations on writers; instead they are made and remade by writers in the act of writing. It is in this sense that writing changes social reality and not only, as Lloyd Bitzer argues, in response to exigence. A historian writes a letter of appreciation to an anthropologist whose article she has read and connects with a new writer with whom she can exchange
ideas and articles. A college president who decides to write a Christmas letter to his faculty creates a new textual form that will affect his other communications and at the same time alters, slightly, the administrative structure of his institution.

Furthermore, the systems are concrete. They are structures that can be investigated, described, altered; they are not postulated mental entities, not generalizations. Every individual writer is necessarily involved in these systems: for each writer and each instance of writing one can specify the domain of ideas activated and supplemented, the purposes that stimulated the writing and that resulted from it, the interactions that took place as part of the writing, the cultural norms and textual forms that enabled and resulted from the writing.

One can abstractly distinguish different systems that operate in writing, just as one can distinguish investment patterns from consumer spending patterns from hiring patterns in a nation's economy. But in the actual activity of writing—as in the economy—the systems are entirely interwoven in their effects and manner of operation. The systems reflect the various ways writers connect with one another through writing: through systems of ideas, of purposes, of interpersonal interactions, of cultural norms, of textual forms.

The system of ideas is the means by which writers comprehend their world, to turn individual experiences and observations into knowledge. From this perspective ideas result from contact, whether face-to-face or mediated through texts. Ideas are also always continuations, as they arise within and modify particular fields of discourse. One does not begin to write about bird behavior, say, without observing birds, talking with other observers, and reading widely in the literature of animal behavior in general. One does not even begin to have ideas about a topic, even a relatively simple one, until a considerable body of already structured observations and experiences has been mastered. Even in writing where the focus is not on the development of knowledge, a writer must connect with the relevant idea system: if one is recommending ways to increase the efficiency of a particular department of a publishing firm, one must understand what the department does and how it fits into the firm as a whole.

The system of purposes is the means by which writers coordinate their actions. Arguments attempt to set agendas; promises attempt to set schedules and relationships. Purposes, like ideas, arise out of interaction, and individual purposes are modified by the larger purposes of groups; in fact, an individual impulse or need only becomes a purpose when it is recognized as such by others. A contributor to a company newspaper writes about his interest in paleontology; his individual purpose is to express himself, to gain attention, purposes we all recognize; but within the context of the company newspaper, his purpose is also to deepen his relationship with other employees.

The system of interpersonal interactions is the means by which writers regulate their access to one another. Two determinants of the nature of a writer's interactions with others are intimacy, a measure of closeness based on any similarity seen to be relevant—kinship, religion, occupation; and power, a measure of the degree to which a writer can control the action of others (for a particularly detailed discussion of these factors, see Brown and Levinson). Writers may play
a number of different roles in relation to one another: editor, co-writer, or addressee, for instance. Writers signal how they view their relationship with other writers through conventional forms and strategies, but they can also change their relationship—or even initiate or terminate relationships—through the use of these conventions if others accept the new relationship that is implied.

The system of cultural norms is the means by which writers structure the larger groups of which they are members. One always writes out of a group; the notion of what role a writer takes on in a particular piece of writing derives from this fact. I write here as a member of the writing theory group, and as I write I express the attitudes and institutional arrangements of this group—and I attempt to alter some of them.

The system of textual forms is, obviously, the means by which writers communicate. Textual forms, like language forms in general, are at the same time conservative, repositories of tradition, and revolutionary, instruments of new forms of action. A textual form is a balancing act: conventional enough to be comprehensible and flexible enough to serve the changing purposes of writing. Thus, new forms usually arise by a kind of cross-breeding, or by analogy, as older forms are taken apart and recombined or modified in a wholesale fashion.

The metaphor for writing suggested by the ecological model is that of a web, in which anything that affects one strand of the web vibrates throughout the whole. To reiterate, models are ways of thinking about, or ways of seeing, complex situations. If we look at, for example, a particularly vexed problem in current writing theory, the question of audience, from the perspective of this model, we may be able to reformulate the question in a way that helps us to find new answers. Though I cannot attempt a complete analysis of the concept of audience here, I would like to outline briefly how such an analysis might proceed.

The discussion of how authors should deal with their audience has in recent years focused on the opposition between those who argue that authors must analyze the characteristics of a real audience and those who argue that authors always imagine, or create, their audience in their writing. The opposition, of course, has classical roots: in the Phaedrus Plato suggests that the rhetorician classify types of audiences and consider which type of speech best suits each; while, at the other extreme, epideictic rhetoric sometimes took the form of a contest in which speakers imagined an audience. Lisa Ede and Andrea Lunsford characterize “the two central perspectives on audience in composition” as “audience addressed and audience invoked” (156). Douglas Park identifies the conception of audience “as something readily identifiable and external” with Lloyd Bitzer, and the opposite conception of audience as represented to consciousness, or invented, with Walter Ong (248).

I would like to draw attention, however, to what unites both these perspectives: whether the writer is urged to analyze or invent the audience, the audience is always considered to be a construct in the writer’s mind. Park specifies four meanings of audience, then argues that “the last two meanings are obviously the most important for teachers or for anyone interested in forms of discourse”: “the set of conceptions or awareness in the writer’s consciousness,” and “an ideal conception shadowed forth in the way the discourse defines and creates
contexts' (250). Park concludes, "Any systematic answers to these important questions will depend upon keeping in constant view the essential abstractness of the concept of audience" (250).

The internalization of the audience, making it into a mental construct often labeled the "general audience," is inescapable within the perspective of the cognitive process model. By focusing our attention on what goes on in an author's mind, it forces us to conceive all significant aspects of writing in terms of mental entities. Even Fred Pfister and Joanne Petrick, often cited as proponents of the idea of real audiences, begin by conceding that for writers the "audience is unseen, a phantom. . . . Students, like all writers, must fictionalize their audience. But they must construct in the imagination an audience that is as nearly a replica as is possible of those many readers who actually exist in the world of reality and who are reading the writer's words" (213-14). Less surprisingly, in her text-book Linda Flower labels one of her "problem-solving strategies for writing" "talk to your reader," but she actually recommends that the writer play both roles in the conversation (73).

Barry Kroll, who breaks down approaches to audience into three perspectives—the rhetorical, the informational, and the social—demonstrates, in his definition of the third perspective, how pervasive the tendency to internalize all aspects of writing is: "writing for readers is, like all human communication, a fundamentally social activity, entailing processes of inferring the thoughts and feelings of the other persons involved in an act of communication" ("Writing for Readers" 179). The redefinition of social activity as a cognitive process is even more striking here in that it is unmarked, mentioned as an afterthought in the gerundive phrase. Kroll goes on to conclude, "From [the social] view, the process of writing for readers inevitably involves social thinking—or 'social cognition'" (182-83). In a more recent discussion of studies of the relation between social-cognitive abilities and writing performance, Kroll more clearly advocates the social-cognitive approach to audience: "It seems reasonable that individuals who can think in more complex ways about how other people think ought to be better writers" ("Social-Cognitive Ability" 304). But, as he also admits, "successful performance (in terms of creating texts that are adapted to readers' needs) may not always reflect social-cognitive competence, because writers probably learn to employ many of the linguistic and rhetorical devices of audience-adapted writing without needing to consider their readers' characteristics, perspectives, or responses" (304).

As should be obvious, the perspective of the ecological model offers a salutary correction of vision on the question of audience. By focusing our attention on the real social context of writing, it enables us to see that writers not only analyze or invent audiences, they, more significantly, communicate with and know their audiences. They learn to employ the devices of audience-adapted writing by handing their texts to colleagues to read and respond to, by revising articles or memos or reports guided by comments from editors or superiors, by reading others' summaries or critiques of their own writing. Just as the ecological model transforms authors (people who have produced texts) into writers (people engaged in writing), it transforms the abstract "general audience" into
real readers (for an insightful discussion of the use of "audience" vs. "reader," see Park 249-50).

These real readers do appear in discussions of audience dominated by the cognitive process model, if only in glimpses. Ruth Mitchell and Mary Taylor point out that "the audience not only judges writing, it also motivates it. A writer answers a challenge, consciously or unconsciously. The conscious challenges are assignments, demands for reports, memos, proposals, letters" (250-51). Ede and Lunsford criticize Mitchell and Taylor's model from the familiar cognitive process perspective: "no matter how much feedback writers may receive after they have written something (or in breaks while they write), as they compose writers must rely in large part upon their own vision of the reader, which they create . . . according to their own experiences and expectations" (158). But in their account of the readers of their own article, it is the real readers who are obviously most important: "a small, close-knit seminar group"; each other; Richard Larson, who "responded in writing with questions, criticisms, and suggestions, some of which we had, of course, failed to anticipate"; and readers of College Composition and Communication, pictured as "members of our own departments, a diverse group of individuals with widely varying degrees of interest in and knowledge of composition" (167-68). Ede and Lunsford know their readers through real social encounters; the cognitive act of analyzing them or creating them is superfluous. As Park suggests, "as a general rule it is only in highly structured situations or at particular times that writers consciously focus on audience as a discrete entity" (254).

The focus on readers as real social beings opens up new vistas for research on audience and for classroom methods. Questions we might seek answers to include: What kind of interactions do writers and readers engage in? What is the nature of the various roles readers play in the activity of writing? What institutional arrangements encourage writer-reader interaction? How do writers find readers to work with? How do writers and readers develop ideas together? How do writers and readers alter textual forms together?

In the classroom, we can enable our students to see each other as real readers, not as stand-ins for a general audience. Students learn about how to deal with their readers not "by internalizing and generalizing the reactions of a number of specific readers" and thereby developing a "sense of audience" (Kroll, "Writing for Readers" 181), but by developing the habits and skills involved in finding readers and making use of their responses. Students, like all writers, need to find out what kind of readers best help them in the role of editor, how to work with co-writers, how to interpret criticisms, how to enter into dialogue with their addressees.

In contrast, then, to the solitary author projected by the cognitive process model, the ideal image the ecological model projects is of an infinitely extended group of people who interact through writing, who are connected by the various systems that constitute the activity of writing. For these "engaged writers" ideas are not so much fixed constructs to be transferred from one mind to the page and thence to another mind; instead, ideas are out there in the world, a landscape that is always being modified by ongoing human discourse. They "find
ideas’ in writing because they thus enter the field of discourse, finding in the exchange of language certain structures that they modify to suit their purposes. Nor for them do purposes arise solely out of individual desires, but rather arise out of the interaction between their needs and the needs of the various groups that structure their society. As Dell Hymes says about purposes in speaking, “Ultimately, the functions served . . . must be derived directly from the purposes and needs of human persons engaged in social action, and are what they are: talking [or writing] to seduce, to stay awake, to avoid a war” (70). The various roles people take on in writing also arise out of this social structure: through interacting with others, in writing and speaking, they learn the functions and textual forms of impersonal reporting, effective instruction, irony, story-telling. In the same way they learn the attitudes toward these roles and toward purposes and ideas held by the various groups they interact with, and they come to understand how these interactions are themselves partly structured by institutional procedures and arrangements. These attitudes, procedures, and arrangements make up a system of cultural norms which are, however, neither stable nor uniform throughout a culture. People move from group to group, bringing along with them different complexes of ideas, purposes, and norms, different ways of interacting, different interpersonal roles and textual forms. Writing, thus, is seen to be both constituted by and constitutive of these ever-changing systems, systems through which people relate as complete, social beings, rather than imagining each other as remote images: an author, an audience.

It is important to remember that the image the ecological model projects is again an ideal one. In reality, these systems are often resistant to change and not easily accessible. Whenever ideas are seen as commodities they are not shared; whenever individual and group purposes cannot be negotiated someone is shut out; differences in status, or power, or intimacy curtail interpersonal interactions; cultural institutions and attitudes discourage writing as often as they encourage it; textual forms are just as easily used as barriers to discourse as they are used as means of discourse. A further value of the ecological model is that it can be used to diagnose and analyze such situations, and it encourages us to direct our corrective energies away from the characteristics of the individual writer and toward imbalances in social systems that prevent good writing; one such analysis by my colleague Michael Holzman appeared recently in CE.

Writing is one of the activities by which we locate ourselves in the enmeshed systems that make up the social world. It is not simply a way of thinking but more fundamentally a way of acting. As Wilhelm von Humboldt says of language, it “is not work (ergon) but activity (energia)” (27), an activity through which we become most truly human. By looking at writing ecologically we understand better how important writing is—and just how hard it is to teach.

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