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## Writing, Cognition, and Affect From the Perspectives of Sociocultural and Historical Studies of Writing

CHARLES BAZERMAN

**I** begin with a personal introduction. I am not trained as a psychologist; nor do I do psychological research, and I am not associated primarily with psychologically based theories. Rather, I am a writer, a teacher, a researcher, and a theorist of writing—working largely from sociocultural and historical perspectives. I have studied how writing forms relations and shares meanings with others and how writing creates new social realities with the historical changes in the tasks, forms, contexts, technologies, processes, and meanings of writing. Yet, as a writer, I spend much time with my thoughts, searching for emergent communicative impulses and identifying the ideas and emotions I want to communicate. I also go through roller coasters of emotions as I struggle with writing. As an observer of my growth as a writer I have witnessed six decades of learning, associated with expanding cognitive possibilities. I remember specific cognitive development episodes such as stylistic imitation in adolescent years, a curiosity about text structure in the middle of my undergraduate years, a fascination with metaphor during the summer when I was 22, and an obsession with genre and intertextuality in my 30s and 40s. These and many other episodes of focused thought and learning increased my ability to conceive new meanings and think new thoughts. Each engaged me with a broader set of writing resources and knowledge.

As a teacher, I see students invest great mental effort into writing, and I see them struggling with emotions evoked by both the contents and processes of their writing. Much of my instruction is to help them identify and develop thoughts they wish to express, how to think about constructing and interpreting texts, and how to monitor and sharpen their writing processes. I also help create an affective atmosphere that allows them to carry out the difficult work of writing. As a teacher,

I witness intellectual growth as students' literacy skills expand. As a historical and social scholar, I gain access to the thinking of people distant from me and see the emergence of new forms of thought as forms of writing and literacy emerge to mediate new forms of social relations.

On the bases of these experiences, in this chapter I will make some heuristic suggestions about how psychological phenomena might be understood in relation to other dimensions of writing. My hope is these thoughts might contribute to a cognitive and affective psychology with a multidisciplinary understanding of writing as an individual, social, cultural, historical, and textual phenomenon.

As a historian of academic and disciplinary writing, I am also aware how problematic introspective accounts are for some areas of psychological inquiry (Danziger, 1990). Yet, as a person deeply engaged in literacy, I realize how much the activity occurs while I sit in a chair, staring at a screen or page, thinking about meaning. This meaning connects me with the thoughts and actions of other people, but the immediate site of action is in my head. Literate meaning, though socially transmitted, negotiated, and transformed in interactive consequences, is evoked within individual cognition. The most direct access to the meaning evoked within individual cognition and to the processes by which those meanings are evoked and managed is through the report of the meaning maker. Further, the sources of the most skilled meaning-making processes are the most skilled meaning makers who have a long history of social interactions and social learning and who have developed large and complex internal processes. Unlike some other problem areas studied on the expert–novice continuum, publicly displayed behavior will not get us sufficiently into the cognitive processing to understand the choices and processes made by highly skilled writers, where so much of the work is done internally over long periods of gestation and intuitive, as situated responses to complexly perceived problems, embodied in implicit stances and roles.

In this chapter I will explore the intersections of cognitive studies of writing with cultural, historical, technological, and textual studies of writing and consider models of cognition that take into account social communicative practices. I will also discuss the ways in which human cognitive and physical architecture may have constrained and shaped the social and material history of writing. Although my goal is to present a broad-ranging view of writing and cognition while respecting the many traditions of thought, my presentation will inevitably be situated within my own sociocultural and sociohistorical views of cognition.

The production, forms of representation, interpretation, and possible meanings of writing are all shaped and constrained by human mental and physical capacities. Yet writing has only recently been utilized by most humans, whereas in earlier times only a few members of society were taught or expected to use this remarkable human invention, which enables communication between people across time and space. As writing developed across the past 5,000 years, humans have learned how to produce and arrange text, what to write about, and how to interpret what other people have written. We have invented new technologies that allow us to produce, transmit, store, and process written texts, presenting further cognitive challenges and opportunities. We have also learned to think the kinds of thoughts that writing enables us to think. Finally, writing facilitated the development of new

activities and social groupings, which have led us to adopt new roles, develop new knowledge and modes of thought, and to orient us to our world differently.

As a result of these advances, the cognitive apprenticeship necessary for skillful writing has extended from a brief orientation to a limited range of signs for categorizing agricultural products to a lifetime of learning. The study of the cognitive aspects of writing would benefit from consideration of the plasticity and cultural evolution of cognitive practices in relation to the artifices humans invented to use in writing and the changing social circumstances within which humans communicate.

## SOME EVOLUTIONARY AND HISTORICAL CONTEXTS

Animals are social beings, responding to one another's presence and influencing one another's behaviors—visually, aurally, chemically, and haptically. Higher avians and mammals are communicative, sometimes even with conscious awareness and attention. The perceptual, cognitive, and affective underpinnings for these social developments have parallels in the complex, affectionate parent-child relationships we witness in advanced primates. As language evolved in humans, it further extended the possibilities and complexity of social relations, supporting higher degrees of coordination and sharing of attention, subtlety of stance, extended reports of information, refinement of social relations and hierarchies, and individualization of interaction even within larger populations in tribes, villages, and cities. Cooperation and task differentiation in meeting the needs and pleasures of life as well as more elaborate arrangements for group security were facilitated. The social arrangements that consequentially developed created new cognitive and affective challenges, which required postpartum psychological development of individuals as they became participants in their society and its tool-facilitated material practices.

The addition of written symbols to the human communicative repertoire, for which the exact time of appearance is still under debate by evolutionary geneticists, seems to have been built on prior biological, perceptual, psychological, and social capacities, which over time, became deployed, organized, and retrained to carry out new kinds of tasks. In particular, the humans who produced modern complex literate systems beginning 5,000 years ago were, as far as we know, genetically equivalent to humans who existed for tens of thousands of years prior to modern literacy and are genetically equivalent to humans today. Although our brains support both reading and writing, learning and using reading and writing are never simply biological processes, but rather biological resources that are used and trained within culturally evolved practices.

Certainly the history of systems of literacy shows the multiplicity of technological inventions and cognitive processes for supporting it, the creative complexity, and the contribution of the social environment to its development. Writing seems to have been invented initially in a few different locations, each time through a substantially different written symbol system: in the ancient Middle East, evolving from a hieroglyphic system to a range of syllabic and alphabetic systems; in China, evolving from an iconographic system into a mixed ideographic system

with phonetic indicators of a variety of spoken Asian languages; a no-longer used ideographic system in Mesoamerica; and an extinct and indecipherable system in the ancient Indus valley (Schmandt-Bessarat & Erard, 2008). All modern forms of literacy seem to have evolved through a series of further inventions from these few. These few initial inventions suggest how unusual an innovation the evolution of written language was, not merely a chimp poking a twig into a termite hill! A complex history of many turns and inventions has led to our current practices of writing.

Further, different forms of apprenticeship and schooling have developed in different societies. Thus, it is reasonable to assume that people manipulate and contemplate these symbols in different ways and then use them differently to facilitate the development and sharing of their thoughts. These differences are likely to occur not only among the major different systems of literacy but even among languages using the same systems of written symbols—as evidenced by the differences in learning between alphabetic languages with substantially different phonologies, such as English and Spanish (Tolchinsky, 2001). Comparative studies of emergent spelling suggest, however, regularities do occur and are the result of the processes of making sense of a system rather than the specific system itself (Scharer & Zutell, 2003). The emergent spelling process utilized by hearing impaired children provides a particularly striking example of the continuity in sense-making processes (Mayer, 1998).

There are also reasons to believe there are great differences in individuals within the same language sharing similar conditions of learning. Skilled writers using the same language on the same topic take substantially different approaches, making different arguments with different information cast within different styles. In an educational context, although we would be quite happy if all students turned in the same answer in mathematics, using closely similar lines of reasoning and work, we would be quite unhappy and even suspect cheating if all students were to turn in the same essay with converging drafts, even with students in the same grade and with similar preparations and skills. Thus, writing should be considered not only as a problem-solving process, as envisioned in the early stages of the cognitive psychology of writing (Bereiter & Scardamalia, 1987; Hayes & Flower, 1990), but also as a constructive process in which thought is transformed, formulated, and constituted as new knowledge (Galbraith, 2009).

## THE COMPLEXITY OF WRITING IN THE CONTEMPORARY WORLD

With literacy, human consciousnesses has moved from immediate interaction with material and social relations directly in front of us to complex distant relations mediated by texts (now including electronic texts with extended multimedia capabilities). Our understanding and interaction with the immediate material and social world is transformed by our representation of it in written documents, turning it into information and data. Even within the same language and the same levels of schooling, we have developed differentiated forms of writing that travel

in differentiated social networks to serve different tasks, evaluated by different standards. The differences among genres of different disciplines, professions, and social practices are so great that a person highly skilled in one domain, for example, legal writing, may be at a loss in dealing with chemical or economics writing, or poetry, or literary criticism. Even within a single professional domain some people are highly skilled in some genres while comparatively weak at others. Some lawyers specialize in contracts and others in patents and yet others in appeals. They each require different skills, modes of expression, action stances, and processes of production.

In short, through literacy we have learned to think about different things in different ways. Learning to participate as an effective thinking being in any of these systems at one of these more advanced stages of literate history requires an extensive cognitive apprenticeship in the skills, practices, and knowledge associated with any particular literate domain. Brandt (2001) gave a striking picture of how demands and needs and uses for literacy change rapidly even in the same geographic region over a few decades, whereas Goody (1986) and Bazerman (2006) gave a broader view of the massive changes in human activity and social order that have come about as institutions have developed based on the infrastructure of literacy.

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Detailed studies of workplace writing (Beaufort, 1999; Dias, Freedman, Medway, & Pare, 1999; Dias & Pare, 2001; Russell, 1997) indicate the great variety of writing practices that occur within specific material, social, and economic constraints and accomplish complex tasks embedded within specialized knowledge domains. Smart (2007) examined the complex distributed writing that creates the knowledge and decision making in a large government agency to monitor and regulate the economy. Studies of architects also identify the way cultural traditions, aesthetic imagination, intellectual movements, material constraints, and building codes can all enter into the projection of building designs to be realized in concrete (Medway, 1996; Medway & Clark, 2003). Klein (1999) noted that in studies of writing to learn, different forms of learning are foregrounded, based on the nature of the task, even in a laboratory setting.

The recent changes in writing technologies also remind us what has been true since the beginning of literacy—that the material, social, and economic conditions of text production and distribution influence what it means to write. Pencil on cheap paper supports revision better than ink on expensive parchment. In the past several centuries, the economics and social organization of printing have contributed to increasingly large distinctions between professional authors and consuming reading publics. The rise of white-collar work within bureaucracies, although generating much documentary work and supporting technologies of typewriters, stencil reproduction, and filing cabinets, has not been viewed as serious writing in either the school or publishing world. In the closing decades of the 20th century, however, the invention of computers, word-processing and publishing software, and the Internet has made revision, collaboration, multimedia, and page design much more convenient, has sped distribution and response, and has fostered new genres and venues for personal, informational, political, and commercial writing.

## THE UNIQUENESS OF SCHOOL WRITING

AQ3 To meet the needs of literate societies, extensive systems of schooling were formed within which youth have spent increasingly large parts of their time in organized learning activities, now extending from early childhood into early adult years (Hasswell, 2008; Rouen, 2008; Olson, 2008). These learning activities may at first have involved some direct relation to activities in the world, but have increasingly developed their own logic as school subjects and activities, directed by beliefs about learning and development. School writing activities are then organized for the transmission, practice, and assessment of what is to be learned. These activities frequently focus on correct linguistic forms, or, in a somewhat more sophisticated manner, the processes by which these correct forms are produced. The transmission, practice, and assessment of skills form the rhetorical and communicative situation of writing—with the curious effect that the very communicative and rhetorical character of writing may be obscured.

AQ4 The impulse to write or communicate arises out of particular communicative circumstances that guide complex decisions about how to address those circumstances, which might be called the rhetorical dimension of reading and writing. Without a compelling rhetorical need to communicate, people would have little to say. Texts produced solely under the mandates of schooling and assessment do not engage the full set of skills of writing, do not display the expressive potential of students, and do not necessarily place the literate activity in relation to material resources and material consequentiality; nor do they place the writing in situations of social consequentiality beyond school evaluation. Further, because writing requires a high degree of concentration, mobilizing complex cognitive and affective resources over extended periods of time to solve fuzzily formed social problems, a high degree of exigency is useful to evoke the intensity of focus and to mobilize the extensive cognitive and affective resources needed to compose successful texts, from which, through repeated engaged practice, a writer develops. There must be the push to create and communicate important meanings to make one care sufficiently about writing, to do it well, and to develop as a writer.

When writing is embedded in significant social activities, people care about it and work on it. When writing is for a grade, students are more likely to feel work has ended when they have achieved an acceptable grade. The motives for higher levels of performance in school writing are few and specific, affecting only a subset of the school population, but looming large in the ideology of teaching—desire for understanding, a respect and admiration for the teacher as an audience, a desire to succeed in front of peers, or a deep engagement with ideas and knowledge one is contemplating. But even deep engagement must be channeled through topics and tasks related to school contents and subjects—that is, the student who loves geography may lavish great care on the geography assignment but perhaps less on the philosophy essay. All these are legitimate human motives, but they are different from the more typical writing situations outside of school that require effort. Within the school environment, these human motives tend to reflect oddities of school culture and roles typically available to only a few students. This need for creating more authentic functions and situations for the development of writing

of *all* students is often at odds with mandated assessments and standards framed around decontextualized skills (Hillocks, 2002; Murphy & Yancey, 2008).

As writing has become essential to participation in almost every element of contemporary society, the disjunction between school uses of literacy and those in the rest of the world has grown. This lack of connection is not just a matter of pedagogy and motivation. It is a matter of our fundamental understanding of writing as a social, psychological, cultural, and economic process because most research into writing is determined by exigencies of schooling and advancement through the school curriculum of writing; most data are collected in school or school-like settings using school-like tasks outside of the complex conditions, intertextual and activity fields, motives, and tasks that frame the variety of writing in the world. In modern information-based societies most people spend much of their day contemplating the writings they create and receive. Even farmers now regulate their farming by informational systems and detailed agricultural and economic records by which they guide their decisions and actions.

In the literate-world consciousness, personal philosophies and commitments, moral and ethical behavior, or simply calculations and plans incorporate knowledge, stances, advice, and evaluations from literate resources. The desire to articulate a coherent personal view through writing can become particularly compelling for individuals, and thus there is a close association noted in the previous paragraph between affective and cognitive order with intellectual projects. Adam Smith (1759), 250 years ago, posited that the search for cognitive order drove the development of philosophy and science. More recently, studies of cognitive dissonance (Festinger, 1957) became an underlying theme of an influential pedagogy of writing (Young, Becker, & Pike, 1970). An inquiry into writing needs to extend far beyond the limited elements practiced in the elementary school curriculum to consider many advanced forms of complex thought and reasoning.

## COGNITIVE AND AFFECTIVE COMPLEXITY OF SITUATED WRITING

Writing extends beyond a mastery of signs, forms, and procedures for language manipulation to the gathering and giving of shape to communicative impulses and thoughts, potentially in dialogue with all one has previously thought, read, and written. Further the communicative impulses are responsive to more immediate experiences that give rise to and constrain the communicative impulse within the perceived rhetorical situation. Further, the social relations enacted in the immediate communicative moment may involve memories of previous relations, mental projections of interlocutors, and situations played out over the time frame for transmission and the repeated later use of a document. Writing may also involve interlocutors who are not known in any way in person, but are known only by their social systemic or activity system relationship and through institutional roles or engagement with certain topics. All this must be constructed mentally. Texts contain information, from memory, from other sources of knowledge, or from experiences, which then must be selected and deployed

purposefully. This information must be gathered in ways trustworthy and credible for the intended audience.

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The extreme case is in reports of scientific experiments carried out under controlled conditions with the implicit commitment that anyone who follows these procedures will get similar results, because some result has been proven under the special conditions of these experiments. Then each piece of writing is accountable to other texts forming resources and creating the dialogic moment, an intertext that lies behind the text. Sometimes intertextual accountability may be defined by expectations of others within a specialized activity system, as all credible experts in a scientific field need to be aware of and take account of certain standard texts that embody theories and findings as well as stay abreast of the evolving literature. A failure to align with or show reasonable awareness of the current literature, or a responsible stance toward it, reduces credibility and meaningfulness of one's claims. Similarly, lawyers must exhibit and operate within knowledge of the relevant law and precedents. Reasoning must then draw these resources and contexts of situation, action, facts, and intertexts together into credible and effective meanings that contribute to the evolving interaction.

Other forms of writing may require access to emotions or imaginative constructs that will reverberate with the imaginations and feelings of others or will provide surprise and novelty or comic incongruities. Locating those means of engagement with others and the sources of invention in oneself are also part of the choice making for effective writing. Engaging deep issues of content and approach, effective writing is far more than a matter of choosing and sequencing words—although that too is part of forging effective and forceful meanings that will impress themselves on other people's minds, both drawing on the resources of the author and anticipating the resources of the readers and how they will be gathered and activated into coherent meanings in the readings.

To accomplish the complex tasks of writing one needs to engage in extensive processes, some of which may be explicit and fairly close to the surface, visible in externalized behaviors or taking notes, planning, drafting, and revising; but others are more implicit and deep in the mind, involving what a writer is contemplating, considering, or eliminating. The latter are barely noticed in the case of spoken reports because these tasks often do not enter conscious awareness. At the other extreme may be deeply internalized, automatized behaviors that are unproblematic for the writer, but without which the writing might not be decipherable by others. Other more emergent meaning impulses may be realized in the gist or spontaneous ideas that seem to come from complex, even impulsive, dynamic activations in the brain.

An important component of the situated gathering together of one's resources for the purpose of writing is an embodied formation of a stance in a situation—a kind of organizing of the self to be responsive in a situation, as a ball player is attuned to the movement on the field, the state of play, one's position and body postures and sensations, and readiness to react to momentary developments. In a similar analogy, a musician brings to bear a lifetime of training, deep familiarity with a piece and style, and an immersion in the musical moment with only a few focused moments of monitoring thoughts floating on top. Because so much of

the situation of the writer is reconstructed in the mind of the writer from distant clues and deep knowledge about audiences and activities, the elements of stance in situation may be in some cases even harder to recover, and may evolve over long periods of composition, so much so they become an enduring part of the person's disposition.

When a writer experiences fluency and flow, that is likely to be based on not only automatized behaviors, but also on a framing of the task and situation; a strongly composed sense of self, stance, and disposition; a coherent impulse to communicate; and easily accessed resources that seem to be falling into place, evoking one another in purposeful associations. The *fluency of the flow state* reflects a high state of complex problem solving at the limits of one's capabilities, leading to surprise at what one is able to accomplish. One deeply knows what one is doing and what one has to say, even if one cannot consciously report what one knows, particularly at the moment when all of one's cognitive resources are engaged in carrying out the task at hand, that is, writing the words one is impelled to communicate.

These views of embodied complex writing activity seem to be consistent with current views of the brain as engaged in complex, dynamic processes, enlisting multiple parts and dimensions simultaneously in fresh configurations in response to perceived situations, contexts, impulses, and actions (Kelso, 1995; Marinaro, Scarpetta, & Yamaguchi, 2008; Thelen & Smith, 1994). The meaning making of writing then requires a full enlistment of many parts of the brain in high states of activation (or low states of inhibition of irrelevant processes) and co-firing of parts that need to work together in concert like an orchestra. Although brain recording of writers in extended compositional episodes is not possible with current imaging technology, it is certainly the case that evidence points to multiple parts of the brain being involved in writing, which include not only structures associated with cognition and metacognition, language, and motor functions, but also social, emotional, and affective functions. (See an overview of the writing brain in Chapter 23, this volume.)

Given current knowledge based on imaging technologies that assess timing parameters and not just regions of activation, it is a reasonable hypothesis that there are likely to be changing patterns of which parts of the brain are activated at the same time and across different moments of time in the process of composition. In real time for real composing tasks, the writer moves from the deeply internal work during initial composing to coordinating communication of meaning, based on various forms of accessing, gathering, transforming, formulating, and externalizing knowledge, and then during written language production to monitoring, evaluating, considering and selecting alternatives, and revising, from the point of view of public standards and the potential readers in the audience.

With this amount of brain activity it is no wonder that writing is considered one of the most complex human activities and may be associated with high brain oxygen needs, depressed states of being, and headaches. At the same time, the brain also has pleasure centers that may be activated in moments of joy for writers, for example, when they find just the right way to express an idea or are able to communicate it to a reader. The high degree of complex brain activation in space and time that is likely with writing is manageable because the brains of skilled,

experienced writers have developed over time specialized organization systems for accomplishing a variety of writing tasks.

## WHERE CAN PSYCHOLOGICAL REGULARITIES BE FOUND?

The perspectives I have laid out of the variability and complexity of writing suggest that the search for a single psychological model of writing is chimerical, but that does not mean that there are no generalizations in writing. Rather than looking for a single set of writing processes, we might look for the *processes* that are activated, enlisted, coordinated, and transformed in the course of writing and over one's development as a writer. That is, rather than considering writing as an isolated modularized function, we might look at it as a complex accomplishment, enlisting varying assemblies of human psychological and material capacities that we have learned how to redirect and coordinate for these special purposes, and that over time might create more enduring or automatized assemblies that take shape in individuals, perhaps influenced by available social practices and organized instruction. Luria (1970) referred to these assemblies as functional systems or the working brain.

One direction for research is in identifying the range of psychological, perceptual, and affective functions that are activated, deployed, and used in writing; how these are activated in the course of different writing tasks; how their architecture constrains and affords human activity and shapes human engagement; and how these capacities grow and develop in engagement with writing. The most material perceptual and motor issues of written language, already substantially understood, provide examples of what I mean: Eyes and visual recognition must be trained to focus on small sequentially arranged marks and to notice the differentiations of letters and graphs in the locally used writing system, and young children must develop the fine motor control to transcribe, whether with stylus, pencil, or keyboard. At the other end of the literacy and abstraction spectrum, highly literate people must develop, from general human memory and conceptual capacities, very specific skills of holding extensive information in working memory (for overview see Chapter 21 of this volume) over extended periods of time at various levels of consciousness so as to maintain the sense of textual coherence and argumentative or narrative flow over extended texts, while recalling and forming relevance judgments based on wide areas of their experience and previous reading so as to construct meaning within this coherence.

The human capacities and practices of writing are necessarily built on biological affordances and have emerged in ways compatible with them in the same way that tongs fit the hand, extend the reach, and utilize the fine motor capacities of the opposable thumb and hand for control and strength. Pencils and keyboards are made for the hand, and print is designed to be read at an arm's length. But well-crafted sentences contain no more than the mind can hold in current working memory, even as they move the minds to new mental configurations across the phrases and clauses. Well-designed texts display larger organizations in forms comprehensible to mental architecture.

A second direction for research would be to examine the multiple capacities and functions—such as memory, visual and auditory capacities, semantic and episodic knowledge, planning and organizational functions, and social and communicative functions—that must be coordinated for successful writing. How are these activated, synthesized, and brought together into externalizing motor actions of transcription where mind and meaning guide one's hand? How is that we can learn to engage and develop in such complex multidimensional practices? Further, how do we evaluate our words under multiple levels of simultaneous constraints to select the one that meets multiple considerations and to which we become committed? The power of this choice is so strong that it is often difficult for people to face revision, to reconsider the complex choices they made in order to pick apart the dimensions that went into the choices, and to review them consciously. We have a strong bias to let the words stand as we first struggled to compose them. Other writers may be insecure and not able to review or accept any criticism and correction. Skilled revision requires an ability to face one's composed words with a professional stance toward one's language and to impose and use specific criteria for review to look at one's own produced words with some equanimity and distance in order to improve them. Although we currently teach the writing process as a natural sequence, perhaps we should think of writing processes as a set of sophisticated cognitive skills to be developed and strategically deployed. Perhaps we also should help students overcome the emotional challenges of confronting one's words to make those words more concise.

As a complex, highly engaging activity requiring long training and varied skills, the writing process of activating, calling forth, and assembling complex capacities under heightened motivational states can be taught. A variety of pedagogic, rhetorical, and personal devices have been developed to awaken the self to the communicative situation and develop concentration, preparation of mind, and assembly of the self so as to be able to write. We can introduce students to the rituals and special spaces writers frequently develop and meditative practices they use to get in the right frame of mind. As teachers we can create strong writing prompts and a supportive atmosphere in class, employ warm-up exercises, and introduce heuristics for identifying rhetorical situations.

It would be worth examining the self-reported practices people have developed for assembling, ordering, and monitoring their skills in producing writing of different sorts. What range of practices and assemblages is created across different types of texts and situations for one individual? To what extent are certain practices for assembling or coordinating automatized for an individual? What is the longitudinal developmental path by which these coordinated assemblages of skills and practices develop? To what extent are these practices shared among people engaged in similar tasks or having gone through similar educational or cultural experiences? To what extent are automatized practices individualized and idiosyncratic? What accounts for similarities or differences among practices and assembled processes?

Writers also appear to be responsive to inchoate prelinguistic or nonlinguistic impulses, gists, feelings, and imagination that appear to be outside language. Writers report materials become organized in subconscious or preconscious ways, sometimes through graphic, musical, or geometric imagery. What is the nature

of these nonconscious and nonlinguistic impulses and how are they brought to linguistic form? Further how might this process of forming meaningful communications be animated by affective motivating states in response to our perceived environment? Conversely, how do the forms of externally received texts form the mental structures associated with the literate or intellectual mind? How is literate experience related to prefrontal cortical development and related intellectual, social, and identity processes among the educated, particularly during the intense experience of literacy in schooling, especially with preadolescents, adolescents, and young adults? On these issues, as with prior ones, the dimensions of variation and similarity are worth exploring.

A third direction to consider is the creation, maintenance, and development of mental projects over long periods of time. As production of texts can occur over extended periods, even over several years or decades for some books, slowly gestating in the minds of authors, there are issues not only of how these are held and built as mental constructs over time, but how they are viewed, evaluated, and monitored for further work. Within the extended period of text development, which can range from 10 minutes to 10 years, what is the relation and dynamic process between what is held and worked on internally and what has been externalized in text and can be manipulated as a graphic object, at a distance from the self? How, and in what form, is meaning maintained and transformed as it moves from an internal, and perhaps only partly and inchoately formed, impulse into an externally available public construction, dependent on the limits of the words chosen to give it expression?

A fourth direction to consider is the dynamic of externalization and social engagement and how that impacts the production of meaning. Forming one's thoughts to be interpretable for others in material situations, mediated by signs, entails conceiving oneself as a social actor, such as Mead (1934) or Smith (1759), which some have seen as the foundation of the self, and creating a linguistic presence, of which others need to make sense. Thus, the focus of the act of writing becomes socially integrative and interactional and an extension of the psychological impulses we have toward sociality and coordination. This social dimension also then raises questions about how our learning to use the common language is itself formative of the categories of our thinking, thereby integrating the individual mind into the social mind, even as the particularity and originality of our utterances, speaking to our perceptions of our needs, situations, and relevant actions, defines us as having particular social identities and relationships. Particularly as writing is associated with advanced education and specialization in disciplines or spheres of activity, such as law, business, or journalism, what might an inquiry into social externalization tell us about how we form modes of disciplinary or professional thinking? Such modes may draw on meanings, knowledge, and forms of expression and interaction of other participants in these social fields. What are the processes of our literate cognitive apprenticeships that transform us into particular literate human beings?

A fifth direction to consider is our reflective executive direction of these complex processes by which we produce text. How can we come to understand the welter of emotions and states of mind that surround, inhabit, and saturate

the act of writing? It may be that this management is learned as we come to observe and reflect on our behavior and come up with plans about how best to manage our resources, being attentive to the smallest stirrings that might give us guidance, at the same time as not to be misled by transient doubts, exhaustions, or slow working processes that leave us waiting. In constructing our texts we also may be learning to construct ourselves as writers, reflecting not only about the texts and their effect but also ourselves as creators of texts, both in our internal workings and the external social presences we take on through the embassy of our texts. One might expect great variety in ways people solve these problems, but the processes by which these sets of problems come to our attention and how we go about solving them may hold clues about complex human cognition.

### PSYCHOLOGICAL THEORIES RELEVANT TO SOCIOCULTURAL AND HISTORICAL WRITING TRADITIONS

In trying to understand the relevance of these issues for writing practice and writing education, even though I am not a psychologist, I have found two approaches to psychology useful for what they explain in themselves and how they conjoin with other knowledge: Vygotskian sociocultural psychology and pragmatist interpersonal psychiatry (most closely associated with Harry Stack Sullivan). Both accounts consider individuals with interpersonal purposes, developing within social worlds of others' responses and cultural tools available in their time and place. In this way both approaches are consistent with the idea that writing and literacy developed historically among humans for human purposes, and that writing is specifically a form of communication and interaction that is based on our understanding of human relations, stance, emotions, and anxieties. Both theories are also consistent with the idea that writing creates a public self, forming an identity that is potentially more durable, transportable, and public than most other forms of behavior and action. Even writing kept in a drawer can become a witness across time and space, and through tricks of cultural understanding, a witness to eternity—or a witness to oneself whom we imagine as the ideal reader.

Vygotsky (1978, 1986) sees learning occurring in interaction with cultural tools, with initial interpersonal use becoming internalized and transformed into personal tools and forms of thought. We then mobilize these internal resources under conditions of action. In this view we form ourselves within social interaction, moving from the interpersonal to the intrapersonal, but we also reform the social milieu by our actions and inventions in response to situations. This account allows for cultural invention and transformation of human consciousness through history as individuals develop new tools and interactions and actions within larger social systems—the type I sketched out earlier, where new genres and activity systems become sites of new relations and identities. On the basis of such reasoning I have made some proposals about how learning to write in some genres may be related to cognitive development (Bazerman, 2009).

AQ6

This Vygotskian view is consistent with G. H. Mead's (1934) views of formation of self in an attempt to make ourselves understood by others and with John Dewey's (1947) view of life and society as experiments, constantly creating new selves. This tradition also gave rise to Harry Stack Sullivan's (1953) interpersonal theory of psychiatry, which proposed a more direct way to understand the emotional force of language in interpersonal relations and the turmoil that might surround the assertion of self through written statements (Bazerman, 2001, 2005). This theory focuses on the development of the self through interpersonal relations as we engage in the forms of interaction offered by our time, place, and sets of available partners in family and community. These relations are formed through positive affect of desire for integration and successful satisfaction of needs, but are also framed through the anxiety system we develop, which marks the boundaries of where we feel comfortable with those with whom we interact, based on our perception of their comfort and discomfort.

Our sense of anxiety is grounded in our earliest, preverbal interactions with caregivers, but evolves through our lives in interaction with new partners in new situations. As we mature, language takes a deeper role in our interactions, identities, and relations. Although writing as we mature frequently occurs in semiprivacy, it begins with face-to-face interactions, as we see the sense others around us make of what we have put on paper. As we get older and often face our writing alone, we are enacting relations of the imagination, wrapped in all our deeply embedded emotions surrounding communicative relations, unrelieved by any information from immediate face-to-face presence. Anxiety should be high on the research agenda for a psychology of writing for two reasons: (a) the reported great anxiety of writers along with the high degree of procrastination and digressive behavior associated with acts of writing; and (b) the practice of hiding one's personal writing from others, as utilized by most adults who use writing only for limited purposes within fairly restricted purposes. There has been a limited writing research agenda around the topic of writing apprehension, based on self-reporting surveys. This work provides a starting point, but more in-depth work is needed.

## FINAL COMMENTS

Although writing has often been characterized as noncontextual because it could convey messages from one locale to another and had a greater burden of explicitness, I argue here that writing is psychologically challenging precisely because it is so contextual. However, context has to be understood internally—it is mentally constructed by reader and writer and it is mediated only by a few limited external visible signs that provide clues as to what is being communicated. Rather than a situation being apparent to perception, as filtered through our perceptual categorization and organization conditioned by language, the situation itself must be worked upon to become apparent. The high degree of imagination, information gathering, mental framing, and meaning making required for reading and writing suggests that literate processes are constantly adaptive to and constructive of situations, organizing the brain for situated action. Just as spoken language creates mutual

alignment, coordination, and shared attention and cognition, so too does writing over greater communities, times, and spaces. Writing creates common intellectual heritages, within which we learn to participate over a lifetime of reading and writing, carrying on the human project of intelligent life as well as the follies of phantasmagoric creation of chimerical meanings.

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