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What Does a Model Model? And for Whom?

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Writing is an ever-creative artifice, elaborated in many different ways and used for many different purposes in different situations throughout history. From this perspective, each writer, embedded within a perceived sociohistoric moment, poses problems to solve, makes choices, and creates solutions from locally available resources and practices to create an effective communication for local circumstances. Writers develop down idiosyncratic pathways by iteratively solving myriad problems from early childhood through advanced adult competence, at times choosing contingent models, but these are different from the generalized models sought by psychologists. Standardized and standardizing models of writing performance, although having some educational value, do not capture the variety of ways people go about writing and can constrain writing development outside the school walls. This article considers a number of the complexly ramifying problems writers may address, forming individualized solutions of how to go about writing and what writing to produce.

There are many ways of conceptualizing writing to aggregate theory and findings, drawing on different approaches and literatures. I have elsewhere (most fully in Bazerman, 2013a, 2013b) elaborated a conceptualization of writing that integrates sociohistorical, rhetorical, phenomenological, linguistic, and cultural psychological approaches. Rather than repeat that conceptualization here, however, I explain how that conceptualization calls into question the common practice among psychologists of offering models of writing processes. The critique I offer also extends to models of textual forms offered by applied linguists. Ultimately I argue that although such models of processes and textual forms may be of limited pedagogic use, they offer a foundational understanding neither of psychological processes nor of textual form. Individual writers may contingently invoke personally chosen models to guide what particular texts might look like and how they as writers may go about producing them, but these are not general models. That is, models are for users rather than analysts and are invoked situationally and mutably.

A psychological model of writing is different than models from other disciplines. From a linguistic perspective, a model of writing might describe the normative forms a writer might be expected to produce within a designated sign system of letters, grammar, syntax, and text

structure considered appropriate for a particular text, or a description of the rules that might govern the production of such forms. Models in this sense are widely used descriptively within linguistic and applied linguistic circles and prescriptively in form-based pedagogies. These generalized representations following Saussure's (1983) dictum to document the *langue* (language system) and bypass the *parole* (individual purposeful uses), thereby missing the particulars of the message that give any piece of writing its meaning and point.

An economic model of writing might consider the various occupations that require writing, their role in the economy, and their contribution to economic prosperity, similar to Machlup's (1962) analysis of the knowledge economy. An anthropological model of writing might examine the role of writing within various cultures and the relation to status, power, and belief systems, although usually anthropological studies are particular to specific cultures rather than generalized across cultures. Nonetheless, Goody (1986) and Street (1984) offered the kinds of general accounts that might count as models, despite their each emphasizing the differences among societies.

From a socio-rhetorical perspective, which is my primary point of view, writing aims to meet the demands of the situation perceived by the writer to achieve the writer's goal. The statement that the writer produces for their perceived circumstance and the processes by which the writer produces it are creative and therefore neither fixed

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nor determinative. Moreover, because the success of a text is in the uptake by the audience and the social consequences of the text's distribution, competence in writing is even more elusive to be modeled. Currently the best we can offer are only the approximate and contingent projections of genre and activity systems, recognizing that these are only typifications used by writers and readers as orientations for sense-making but not full realizations of what happens (Bazerman, 1994; Miller, 1984; Russell, 1997). Such typifications are pervasively hybrid, evolving, and filtered through individual perceptions, and serve only as heuristic anticipations to support choice-making (Schutz, 1967). That is, if anything can be modeled it is the phenomenological processes by which people make sense of and act within situations and negotiate shared social categories that mediate the idiosyncrasy of individual sense-making. Models that participants may create within the individual and social sense-making belong to participants and not to analysts who can only document ethnocategories (see Bazerman, 2013b). This phenomenological approach does have psychological implications, as it relies on the perceptions, thoughts, goals, and intentional actions of participants, but it does not lead in the direction of sufficiently stable psychological phenomena of writing to support generalized modeling.

As a nonpsychologist, I have not been able to find definitive criteria for what counts as a psychological model, so I must proceed from examples I have seen that have self-labeled as models. These exemplars (e.g., Deane & Song, 2014; Graham, 2018; Hayes, 1996; Hayes & Flower, 1987; Kellogg, 1996) attempt to represent the writer's process, that is, what and how a writer thinks through in producing a text and within what psychological constraints.¹ The psychological phenomenon modeled by these theories would then be the writer's process or processes. Some of these more recent models, moreover, have elaborated the complexity of the writer's task so as to create a richer account of what writers need to learn and address (Deane & Song, 2014; Graham, 2018).

The exemplars of psychological processes within writing seem to serve primarily one of two purposes: first and more fundamentally, to examine writing as a complex special case of human higher order thinking in order to unpack the complexities of the human mind (e.g., Kellogg, 1994); second, to improve educational interventions and curricula by assisting students in improving their processes. These models have been heuristically useful in directing empirical inquiry to hypothesized component processes (such as revision or translating) and in increasing educational attention to such component processes.

¹It is worth noting that these models of psychological activity are distinct from models of pedagogic interventions (such as peer response groups or strategy instruction) that provide options for classroom activity (see Graham & Perin, 2007, for a metastudy evaluating the effect of these various intervention models).

Also some of the more recent and richer models (Deane & Song, 2014; Graham, 2018) have taken into account more of the concerns that writers may need to address. As such, they may provide useful fictions for instruction within contemporary schooling that would interact with how students are developing as writers, to suggest greater or alternative possibilities to the writer (Schneuwly, 1994); nonetheless, I remain skeptical of their fundamental accuracy as accounts of what processes occur within any particular writer in any condition.

The entry on "Models in Science" in the *Stanford Encyclopedia of Philosophy* specifies the kinds of phenomena that lend themselves to modeling as "all relatively stable and general features of the world that are interesting from a scientific point of view" (Frigg & Hartmann, 2012).² Applying this definition to writing processes would imply that to be modeled writing processes would need a degree of stability or at least sufficiently limited variation to warrant generalization, even if the modeling involves some idealizations. Both stability and generalizability present difficulties for writing as I argue here.

The difficulty in modeling writing processes is not a difficulty in modeling neurological and brain structure or the ways these structures are activated in mental operations but in modeling the unstable complexity of writing and the processes engaged by it. Writing is a historical invention, constantly evolving, engaging an uncontained number of considerations, differently perceived by different writers, and approached in a variety of ways not fully predetermined by the nature of the task or the pattern of the individual's prior experiences and constructions of other writing tasks, though these may be of substantial influence. Each new writing task brings some degree of novelty and the potential for creativity in the resulting text. What is to be written is not a fixed puzzle with an ideal solution. As psychologists have documented, writing is a problem-solving process (see, e.g., Flower & Hayes 1977; Hayes & Flower, 1987); however, problems, solutions, and processes cannot be determined separate from considering the perceptions, resources, approaches, and calculations of each writer in each situation. The problems and their solutions adopted by writers within different situations proliferate rather than converging on a coherent model.

WHY SCHOOL WRITING CANNOT FORM THE BASIS OF A GENERAL MODEL FOR WRITING

One of the fundamental difficulties in developing a psychological process model of writing activity is the

²The *Stanford Encyclopedia* also considers the modeling of data, but only in the limited statistical sense of data-cleaning and curve-fitting within large data sets; this is not what is usually meant by psychological models of writing.

indeterminate variety of texts produced by writers within an indeterminate variety of situations. What we may currently impute to be competence is in fact a culturally and historically localized set of assumptions, largely instantiated within school practices. The processes we then associate with that competence are those that have proved adequate to producing a current set of valued texts. Processes are, however, tied to the target product, and how that product will be used. A multinational corporation creating an assembly line for electronically advanced hybrid cars will have many different considerations, resources, and design goals than a 19th-century blacksmith hand-producing nails for horseshoes. A Sumerian scribe enumerating taxpayers engages in a different set of processes than a householder assembling a shopping list in contemporary economically developed countries, even though they are both apparently making lists. In the same way, an alchemist writing a treatise in 16th-century Germany engages in different processes than a 21st-century chemist writing a toxicology safety report within a U.S. government regulatory agency.

Instead of considering the wide variety of texts produced over history in varying social conditions, psychological models of writing produced over the last half century have tended to consider texts and related values of competence from a small range of school essay tasks and have tended to gather evidence either directly from classrooms or from experimental tasks that are structurally similar to classroom assignments—that is, an essay of moderate length composed for a simulated audience on an externally imposed prompt within a controlled condition within a limited time period. This is a legitimate task in both classroom and laboratory, but it is only one particular kind of task among many with implications for the processes that might be made visible under such conditions. Some psychologists (such as Kellogg, 1994) have drawn more widely on testimony from high-prestige authors of recent history who embody the values of contemporary humanities culture, which values inform much of U.S. writing education. Applebee and Langer (2011) and Hillocks (1987) documented some of the standard restricted practices of contemporary school writing in the United States, and the exceptional variations noted by them remain largely within contemporary academic culture. This academic culture can provide a rich environment for learning to write within its expectations, but it is culturally and historically specific and far from universal.

Even today most writing occurs in more quotidian situations where other values and purposes rule. Research into writing outside of school has cast doubt on the assumption that even within the contemporary North American context, school writing maps well onto and prepares students for writing for contemporary professional, business, civic, and personal worlds (e.g., Beaufort, 2008; Dias, Freedman, Medway, & Pare, 1999). Research has

further revealed that as people engage with writing situations in different domains, they go through distinctive personal apprenticeships (Beaufort, 1999) and organizational and institutional sponsorships (Brandt, 1998, 2001, 2015), building experiences, engagement, understanding of their situations and goals, and access to resources for realizing their ends.

Even within educational settings, genres, expectations, procedures, and standards for writing vary with disciplines and subject matters (Carroll, 2002; MacDonald, 1994; Thaiss & Zawacki, 2006). Moreover, within the same subject area, writing varies across levels of schooling, from class to class and even across assignments within a single class. Further, students each follow individual strategies and procedures with distinctive understandings of tasks and distinctive productions (McCarthy, 1987). Students develop individual messages and arguments, even when guided by well-defined assignment expectations (Herrington & Curtis, 2000). Individuation increases as students and adults mature into distinctive accomplished writers.

The individuation of writing and writers presents a dilemma for schooling, as regularization of instruction and assessment requires making students' writing more similar so they can be made comparable and procedurally predictable (Hillocks 2002; Jones, Jones, & Hargrove, 2003; O'Neill et al., 2006). This is why standardized writing assessments tend not to be supported by teachers of writing who have come to know their students, what students are capable of producing, and how students go about the work (e.g., see Conference on College Composition and Communication, 2014).

Furthermore, schooling at other times has taken on other goals, values, and practices. For example, early Sumerian scribal schools were located within scribal houses, and students copied the tax and census rolls being done by the fully trained scribes in the same room (Vanstiphout, 1995; Vogelzang, 1995). As the needs for literate elites became more important for more roles, schools recruited more students and literate school practices changed accordingly to meet the new needs (Claggett, 1989; Connery, 1998; Makdisi, 1981). As literacy became a religious obligation, an economic necessity, an essential for social inclusion, or an expectation of citizenship and cultural participation, schools changed. School's institutional organization, goals, curricula, and learning tasks arose and evolved to meet those needs, as did its expectations of students successfully completing its course. We still see these variations in the literate practices and expectations in such different schools as Hebrew Yeshivot, Islamic Madrassahs, U.S. secular public schools, and Summerhill-type experimental schools.³

Within the United States, writing has been taught variously through history, at different times focusing on

³For a classic study of the different cognitive consequences of different forms of literacy education, see Scribner and Cole (1981).

handwriting, recording commercial transactions (Monaghan, 2005), scripting oratory (Berlin, 1984), recording daily life (Schulz, 1999), or fostering creativity. Even universities have been transformed from largely reading institutions focused on canonical texts with oral exams to writing institutions focused on the production of knowledge and critical evaluation (Clark, 2008; Kruse, 2006). This transformation currently continues, driving the development of writing programs globally (Thaiss et al., 2012). Writing expectations and standards in U.S. public education, furthermore, differ from state to state, school to school, and class to class. Even greater are the differences in public education in different countries. National curricula and the spread of assessment instruments within and across nations, however, have been enforcing similar expectations, which wash back into classroom practices and student learning (Brandão Carvalho, in press; Hillocks, 2002; Purves, 1992)

FROM WHERE MIGHT GENERALITIES IN WRITING PROCESSES ARISE?

I am not suggesting, however, that we throw up our hands at the complexity of the task of understanding writing processes. Nor am I suggesting we give up hope of finding some generalities among kinds of writing and writer. Rather, I am suggesting we should start from recognizing writing's flexibility, plasticity, and creativity and then see what we can find about how people use writing for their own complex and varied ends, building actions and meanings through their texts. Further if there are generalities in processes, we need to find out from where they arise and not assume they are a result of imputed inherent psychological organization.

Generalities we find in writing may not necessarily come from the structure of the mind or other aspects of psychological organization. The materiality of transcription and body mechanics constrain the size and distinctiveness of letters through such variables as the mechanical means of inscription, the fineness of motor control, the limits of human vision, and the distance at which a transcribed medium may be viewed, whether a page at arm's length or stone inscriptions on buildings. Generalities may come from the nature of the sign system and the way it forms syntactic relations among elements, or the way breath control limits length of phrasing (Chafe, 1994). Generalities may come from the typical raising of infants and young children within a small cluster of adults who are attentive to the child's needs and early communication. Generalities may come from the world observed by the child, directed by need and desire or characterized by what is told them by those around them. Generalities may come from social processes of coordinating tasks and

meeting needs in social groupings. Generalities may come from the organization of schooling experienced across a group of writers. Generalities may come simply from temporal sequencing of events to be narrated. Generalities may also indeed come from psychological organization, brain architecture, and biological and neurological development over the life span shared by most humans; yet these psychological generalities may only constrain implementable solutions without determining the solution chosen, such as the way working memory limits the number of elements attended to but not the specific contents of attention (James, Jao, & Berninger, 2016).

Any generalities we discover from any cause, nevertheless, will be limited to those populations who share those typicalities of experiences, materials, relations, sign systems, or psycho-neurological organization. In all cases we need to be aware of atypicality and how that might lead to variation and alternative paths. So rather than starting searching for common models, assuming we all do this complex, variable, and creative thing of writing in the same way, it might be wiser to start modestly, assuming difference until we identify commonalities and causes within ranges of applicability.

The one generality my upcoming presentation does rely on arises from the historical invention of writing. Writing is an artifice that poses problems in each use, as to what created resources to draw on, how to assemble and use those resources in ways applicable to the situation, what we might additionally create to enrich the possibilities, and how to organize our work of creating a text. Writing presents puzzles to the writer as to how it should be done and what to represent, as Flower and Hayes (1977) noted, but it is not necessarily the same problem or set of problems for each writer. Different writers may pose the problems radically differently and seek fundamentally different kinds of solutions. After an overview of some of the differences that might lead writers to approach writing differently, I sketch out the great variety of problem-solving activities that may (but not necessarily always) occur in writing, historical and contemporary, social and individual.

WHAT MAKES WRITERS DIFFERENT FROM ONE ANOTHER?

The extensive ethnographies of writers of all ages document that each writer brings individual perceptions, resources, and backgrounds to each writing challenge at each point in his or her writing career. These experiences and how they go about addressing them direct writers down their individual developmental paths, to address their next challenge. Many variables contribute to this differentiation in the formation of writers.

From a psychological perspective, variables include neurobiological diversity, from large visible differences of hearing or sight impairment to behavioral differences, such as attention deficit hyperactivity disorder, to language and literacy specific disabilities such as dyslexia, to more subtle variations like processing speed, pattern recognition and short-term memory capacity (Albertini, 2008; Graham & Harris, 2011; Graham, Hebert, Sandbank, & Harris, 2016; Hengst & Johnson, 2008; MacArthur & Graham, 1987). These are not simple and stable in their effect but ramify as they condition consequent experiences as writers work with the neurobiological hand they are dealt. Equally fundamental are dispositions that appear early in infancy but also develop over time as children come to interact with the world and others. These dispositions influence relations and communications with others which then may be transposed to the written world, as well as how the writer addresses the work of learning to manipulate signs to create textual meanings. Specific dispositions may be further developed or transformed precisely in the formation of writers' identities (Halpern, 1998).

Early social relations influence how one understands communications and coordination with others. The contexts of family, community, and schools influence concrete perceptions of what can be accomplished through communication, how different kinds of communications will be attended to or accepted, and which will evoke negative reactions. In face-to-face interaction the child learns how to project the self through language to be taken seriously, comically, or lovingly; these expectations concerning communication set the initial template for written interaction. In these early social contexts, as well, the emerging writer is exposed to a limited or greater variety of literate materials to read and tools to write with—as well as opportunities to see how people around them do or do not use writing for their various purposes.

Social relations, motives, and emotional responses continue to grow and evolve through the opportunities and accidents of life, in part conditioned by one's sociocultural position and style of participation. These relations then may be expanded or transformed as one discovers the possibilities of connection in the written world. Within these social relations are the potentials of sponsorship and mentorship, as well as exemplars and antiexemplars, particularly as one engages in the world of writing. Although one's dispositions and accomplishments can attract mentorship and sponsorship, chance will also affect whether and who might take on these roles in the developing writer's life or what kinds of institutions and organizations might provide opportunities and rewards. The social classes, cultures, and language (including dialect and multilingual) groups one grows up in and then moves through in life furthermore provide differences of expressive and meaning potentials and offer ideologies of

language and communication, including about what a writer is and could be.

All these social arrangements are framed within particulars of available technology and cultural practices of the time and place, as well as social and political exigencies and conditions. Just as the appearance of cheap paper and convenient writing tools may have changed writing, so did the growth of a middle-class reading market with a taste for news, fiction, and self-improvement (Blair, 2011; Finkelstein & McCleery, 2006). These complex, intertwined historical events create the writing environment for each writer inhabiting a certain locale and moment. It makes a difference if a writer grows up in a repressive regime with a tightly controlled press and social media, or in a chaotic political situation with a turmoil of views expressed in a fragmented media world, or in a stable democracy with freedom of the press and a large mix of public and private writing media.

Because schooling is a central location for writing development, variations in schooling and students' differential responses to school activities further lead writers down different paths. As schooling advances in contemporary U.S. education, students are often encouraged to create unique responses within the parameters of assignments; the assignments themselves are particular and distinct from one another across years and even more across subjects. Teacher framing of specific assignments further creates varied developmental experiences for students in different classes, as does how teachers respond to atypical responses where students draw on unexpected resources to express fresh meanings. As students are granted more flexibility in their coursework, particularly as they advance through secondary into higher education, they can also migrate to subjects and writing tasks in which they find more success, pleasure, and value.

Each writer through unique experiences builds idiosyncratic collections of skills, orientations, and resources to address new problems and challenges, advancing the writer on a trajectory of increasing differentiation. This development may stabilize if the writer migrates into a limited set of roles within a small set of activity systems, but even then increased efficiency, effectiveness, and sense of efficacy may produce individualized results over time. Some writers may take on additional tasks or move to different roles within those activity systems as the writer asserts his or her presence more forcefully, is recognized for particular talents, and is granted more responsibility. Further, life is likely to engage the writer in different activity systems, setting new challenges while offering new opportunities, resources, and sponsors. Although sometimes the role of writing may decrease as adult roles may stabilize, writing can expand as age brings more sedentary, reflective, and socially responsible lifestyles and roles or may bring deeper engagement in forms

of social, political, and economic struggle. Accompanying that increased social experience may be increased understanding of the social and economic conditions that frame writing opportunities, allowing more strategic action to advance one's concerns through writing and perhaps to attempt to change those conditions.

These forces of variation and differentiation make it increasingly difficult to model writing behavior or writing productions. Perhaps for particular subpopulations with shared motives and expectations within particular social settings and constraints, some shared pathways for development may be sketched out to guide education, such as assuring basics of letter formation, spelling, grammatical form, and syntax within dominant dialects in early years of schooling. But even here atypicality of dialect, hearing, sight, social engagement, or emotional and cognitive organization may create obvious mismatches. More subtle mismatches may arise from the child's early communicative patterns in the family and community (Heath, 1983), preschool literate resources and environment, expressive impulses, dispositions, engagement with the worlds to be reported on in writing, or other factors. Teachers who become sensitive to these differences may feel the need to reach beyond the implied models in standard curricula.

As students move through education and their identities in school worlds evolve, defining common paths of learning becomes even more difficult. Required curricula in subject areas through secondary education to some extent do limit the dominant literate universes students must navigate. On the other hand, students may receive individualized mentoring and sponsorship that expand their views and practices. Students who strongly affiliate with writing and may be the most successful at it may gravitate toward extracurricular and community writing experiences, which will further differentiate them from the pathways set out by school curricula. By the time young people enter the university or other career training or the workplace, they are engaging with ever more distinctive worlds of writing in disciplines, professions, careers, and citizenship, usually accompanied by higher demands for creating unique statements, reflecting individual observation, perspective, and thought.

The attempts in schooling to homogenize diverse student knowledge, skills, and communicative impulses may in fact be counterproductive as students see the models they are presented as not relevant to them, not using the resources they have at hand, or contrary to the identities they have formed and the activity systems they want to engage with. Much of higher education writing studies documents this diversity and how education can respect and draw on it, as well as serve the communicative impulses that drive students to want to learn to write more effectively and efficiently (Carroll, 2002; Prior, 1998; Thaiss & Zawacki, 2006).

With more advanced writers who are already highly differentiated, writing models (both of how to organize processes and of target text form) may only have value within tightly focused situations and tasks that look toward a convergence of production. Job-related reports may, for example, require defined information, using standard professional phrasing, and drawing on finite literatures of relevant texts. Even as writers learn to accommodate to the constraints of narrowed expectations, however, they may need individualized reorientation and skills development given their different prior writing experiences. Further, even within these constraints, at times originality and fresh approaches may be expected and rewarded, such as in legal briefs.

A RADICAL STARTING POINT, DENATURALIZING WHAT WE HAVE NORMALIZED

So rather than asking the question of how we fulfill the potential of a preexisting capacity (a question that treats writing processes as a natural fact) or proposing an ideal path to a defined competence (a prescription that accepts as natural an assumed textual ideal), we might better begin accepting the historical reality that writing is an ever-creative artifice, elaborated in many different ways and used for many different purposes in different situations. From this perspective, each individual writer embedded within a sociohistoric moment chooses from the locally available resources and practices to create an effective communication for local circumstances. Variety is expressed as much in the process as the product.

The psychological questions then become, What kinds of problems might people address in responding to writing challenges posed in school and beyond? What kinds of thinking are elicited by those challenges? What kinds of external and internal resources do writers draw on? What experiences, learning, and instruction can develop writers' abilities to recognize and respond successfully to writing situations? What kind of thinking is facilitated and communicated in the produced texts? Neither writing nor reading are neurobiologically determined, as humans engaged in neither for at least 95% of the species history, and perhaps more than 99%, depending on the estimate used of the age of homo sapiens. Given that writing is a recently invented behavior, how does each individual use, repurpose, and retrain evolved human neurobiological capacities and communicative social orientations to carry out the complex of functions required by the writing valued in his or her social moment? Finally, how do all these variables and dynamics influence both the specifics and the success of the texts produced within their intended situations, goals, and relevant expectations so as to communicate significant meanings (Bazerman, 2012)?

These questions are situated within each individual's perceptions of writing; identification, sense of exigency, and beliefs about the situation sensed as calling for writing; the construction of intentions and strategies; and the mobilization of resources both internal and external. Some of these individual components may be conscious and intentional, whereas others may arise unconsciously from prior experiences, habits, dispositions, emotions, or other deep psychological structures. Consequently, this approach to the psychology of writing relies on understanding how each writer sees and constructs writing within each situation, and thus is phenomenological (Bazerman, 2013b; Russell, 2010). Further, this approach relies on the individual's history of experiences and actions within particular sociolinguistic environments that have shaped the emergent structuring of individual minds and brains (in the manner suggested by Vygotsky, 1986, and Luria, 1986).

PROBLEMS WRITERS MAY ADDRESS

The approach here considers the writer as a creative agent, attempting to solve specific interactional problems through written texts and in process problems in writing those texts. Although the particulars of writers' situations, the kinds of texts they attempt to produce, and the means and processes they employ vary greatly, as I have suggested, we may be able to identify some of the kinds of problems that writers may address. Any such list, however, will be historically and culturally bound by our contemporary experience of writing and the categories imposed by those who assemble such a list. Any such list cannot be comprehensive as each generation may put writing to use in different ways, creating new problems to solve or seeing problems in a different way.

These identifiable problems, nonetheless, imply particular skills or knowledge that writers may develop, though the problems do not directly dictate those skills or knowledge. Rather, recognizing a problem, writers will then attempt to make sense of it and seek what they think they need to solve it. What they seek may or may not match what we might predict and mandate in the curriculum or any model we might propose to explain or guide their actions or development.

Some of the problems may be addressed broadly by almost all writers or may even be a necessary part of writing, such as choosing a means of inscription and learning to deploy both the mechanical and symbolic aspects of the inscription system (whether incising cuneiform characters with a stylus on clay or selecting Chinese characters prompted by pinyin input on a mobile electronic device). But some of these problems need to be addressed by some writers only as their circumstances demand (such as those people who write the text on food wrappers needing to align their representations with government regulations about nutrition and ingredient labeling).

Solutions to some of these problems may be handed to young writers by school or society (such as what set of symbols to use, though even these may be supplemented by creative neo-symbols such as emoticons). Some solutions may be offered by informal social networks (such as advice on how to respond to an intrusive e-mail by one's boss, though it is still up to the individual about what to select from the many conflicting suggestions and how to apply the advice). Some solutions, however, may need to be worked through by each individual idiosyncratically (such as articulating the writer's own emotions and traumas). Some problems may be largely solved in a limited period in life (such as manipulation of particular inscription tools, though new technologies, an interest in calligraphy, or neurological and physical injuries may require new learning), but some may present ongoing or recurring challenges throughout life (such as identifying and building relationships with readers).

Such a listing of the kinds of problems can begin to reveal the work of writers and thus the kinds of psychological processes each individual might engage in his or her own way. Listing problems may even begin to suggest the kinds of resources that each writer might draw on in each solution, but many problems have multiple solutions. Although learning to recognize letters might suggest retraining eyesight to notice distinguishing features of letters, the sight-impaired have braille and now assistive technologies. Those who have worked in bureaucratic organizations have certain perceptions and resources for seeking redress of a government action, but those with legal training have different resources to guide them, and those who work with public interest groups have others.

The list elaborated next starts with some of the issues addressed at earlier moments of writing development. In a sense the problems grow outward from the child's discovery of the world and the means to participate in it, with some problems coming into focus only as writers mature; engage wider social, material, and intellectual worlds; and conceive of their roles within those worlds. Yet simultaneously as the writer's world expands, solutions to problems become internalized in perceptions, skills, ways of thinking and working, and orientations toward action. These internalized and reinforced solutions in a sense become individualized models of writing, which a writer may variously select among or modify according to what the writer perceives as relevant to the immediate situation. These user models to guide action contingently are different in kind than the analyst models that form generalizations across people and situations.

1. Discovery of Written Media and People's Orientation Toward It

Before paying attention to writing, the potential writer needs to notice that other people attend to it. This may happen as soon as the infant is aware of the social

environment (Tolchinsky, 2006). Anecdotally, I noticed my infant, long before walking or talking, would bat away the newspaper from my partner and my faces so as to regain our attention. The impact of the amount of reading and writing behavior in a household on child literacy development is well documented (Purcell-Gates, 2001; Storch & Whitehurst, 2001) and the literature on emergent literacy records early signs of the child's awareness of literacy. Awareness of the presence and uses of writing grows with engagement in new domains (Rowe, 2003, 2008). College students who think their chosen career will require writing may be surprised to find out that accountants or engineers devote much of their day to writing reports (Selzer, 1983). People addressing trauma or life transitions may discover that others devote much energy to and derive benefit from writing about their personal struggles (Pennebaker & Chung, 2007). The appearance of new communication media platforms creates the potential for awareness of how people around one are engaging with them.

2. Motor and Mechanical Manipulation to Engage With Media

Motor and mechanical control for inscription is associated with emergent literacy, and early use of pencil and keyboard (and now electronic devices for early childhood) create new pathways of development. Motor skills can also pose new problems throughout life. Learning calligraphy or brush stroke ideographic writing or hand typesetting is typically an interest of late adolescents or adults who strongly affiliate with the written word. Historically, mechanical skills have varied, whether using a stylus on clay or tapping a telegraphic relay, and currently new devices may require learning motor and mechanical skills, whether keyboarding initially associated with the typewriter or thumb typing on smartphones. Illness or other incapacities may require relearning or alternative motor skills. Finally nonsight systems of inscription, such as braille, or nonhand means, such as eye-blink, require different skills. All these skills involve the retraining of human perceptual, motor, and control capacities that evolved for different purposes. Manipulating a pen to form letter, for example, involves refocusing and refinement of sight, hand-eye coordination, and hand muscle group strength and coordination.

3. Learning the Sign System and Its Realization in Spellings and Pronunciation

Closely tied to control of inscription mechanics is attribution of significance and production of the distinctive differences of characters. In alphabetic language this means learning the form and phonetic correspondences of letters.

In alphabetic languages where letter-sound correspondences are simple and stable, this task is soon complete. In English and other languages with complex phonetics, learning correspondences and pronunciation can be ongoing, tied to learning of complex rules, familiarity with specific spellings, and development of new vocabulary. Some words may continue to be difficult to spell, and some words learned primarily through reading may be idiosyncratically pronounced, especially family names and neologisms from specialized domains, such as pharmaceuticals. Further, managing current spell-check programs requires monitoring and choice making skills. Consonantal and syllabic systems create further challenges for determining sound correspondences. Languages that inscribe tonal and other aural distinctions or that use ideographic, rebus, or other kinds of signs pose other problems.

Learning a new language, even using the same alphabetic system as one's first language, requires learning new phonetic correspondences, often with subtle but consequential differences. For singers and actors getting these correspondences exactly right are matters for accurate performance, and for religions relying on sacred languages, precision can be a matter of divine obligation. Much of early linguistics was in fact tied to solving the problem of maintaining precise spellings and precise pronunciation of the divine scriptural word.

4. Investing Signs With Meaning and Sentence Clarity

Although ideographic systems to some degree carry the meaning within the sign (though such languages as Chinese are far more complex in this respect than the ideographic label would suggest, with homonym distinguishers, puns and rebuses, tonal markers, syllabic elements, and other phonetic supplements), in alphabetic, syllabic, and consonantal transcription systems one must identify a pronounced meaningful word with a sequence of sound identifiers. That is, meanings are not transcribed directly, but words must first be parsed for their sounds and the sounds then inscribed in the letters.

The spelling of words is only the beginning of meaning making, however, as the words become part of longer strings of meaning in syntactic relation. The more elements brought together in a sentence, the more the sentence needs to be crafted to put the elements in a meaningful relation. At the phrase or sentence level, meaningful associations at first may be taken from spoken language, but as writers develop they may employ greater syntactical complexity, requiring visual tracking and time to sort through appositions, prepositional chains, qualifying or elaborating phrases, subordinations, parallelism, or suspensions. Syntactic complexity may particularly appear in adolescence with conceptual and intellectual growth

accompanying impulses to independence of thought. On the other hand, as the writer learns to detach phrasal length from breath patterns, he or she may become more aware of possible cognitive processing constraints that evolved in conjunction with oral language (Chafe, 1985, 1994). Accommodating readers' cognitive constraints may then lead to search for greater phrasal efficiency and simplicity while maintaining conceptual clarity and intellectual force.

5. Correctness and Expression

Written text's susceptibility to extended or repeated inspection then may pose the problem of meeting higher standards of correctness, consistency, coherence, and precision than with spoken language, which is filled with fragmentary and tangled forms, fillers, mispronunciations, and repairs. Written language, which can be examined more slowly and carefully, holds the writer up to greater accountability. Further, canons of spelling, letter form, punctuation and spacing, grammar, syntax, and word meaning became regulated through grammars, dictionaries, and schooling as texts gained wider circulation through printing. Although these standards can increase intelligibility to wider audiences sharing these conventions, they are also often used to judge education and intelligence.

Although we may admire the poetic creativity of young children's writing, children may over time discover that commonly available formulations are more accurate and more readily understood at the same time they are discovering that these standardized forms gain the approval of teachers and other adults. The further one advances in education or professional specializations, the more particular expectations may be, often with specific reference for the concerns of that group. So as students advance in chemical or legal education and begin writing for those professions, they learn to use disciplinary formulations for the work of those fields. Varying to create new meanings becomes more an act of conscious intention than trying to reach toward a meaning with only limited expressive tools. The challenges of making standard, correct, or simply interpersonally intelligible forms do one's bidding continue through a writer's life (see point 7).

6. Extending Statements, Developing Larger Text Structures, and Building Cognitive Grasp of the Whole

As writers venture beyond the sentence, problems of extended thought, sequence, coherence, maintenance of reader's attention and focus, and planning become more challenging. Longer forms require higher levels of organization along with explicit guidance for readers as to the

directions the text will take them, moving from one statement to the next, one section to the next.

Different genres (see point 13) may raise expectations of different forms of coherence and organization, so knowledge of those genres and situations can provide clues about what might be included, sequenced, and connected. Nonetheless, even when contents (see point 8) and sequence may be mandated, such as in certain school assignments or government documents, writers who have a sense of the whole and the underlying logic of the text can build the coherent force of the text, guiding the overall effect on the reader. Other writing situations may grant substantially more leeway in the internal organization and movement of text.

Extended texts also make possible more complex reasoning, incorporation of more content to be synthesized, broader scope of presentations, and more ambitious goals. These require the writer to have extended cognitive reach, confidence, commitment to the task over time, and constancy of purpose and intellectual vision. Vision of the whole may be facilitated by learning to use planning documents, whether outlines, sketches, notes, or strategy memos. At the same time as building conceptual grasp of larger documents, writers need to develop text-based skills to explicitly display coherence through cohesive devices, transitions, text direction signaling, and the like, moving the reader forward but not jumping too far or too fast so as not to confuse readers or lead them to lose trust.

As students advance through schooling, they are typically challenged by projects of increasing length and more complex genres, even as they may continue to write in shorter forms. Although in early grades the most ambitious assignments may be narratives of a few sentences or paragraphs, by secondary education students may be writing reports of several pages, synthesizing information from other sources (see point 9) or information collected from their surroundings (see point 8), and analyzing texts or data. In higher education, assignments of five to 10 pages may lead to multichapter senior theses within students' major disciplines. Master's theses and doctoral dissertations become even more ambitious and lengthy, requiring integration of extensive disciplinary literatures, often freshly collected data following systematic disciplinary inquiry practices, and increasingly sophisticated analysis, claims, and arguments. Short forms may also continue to be valued, but expectations of meaning density, tight organization, and sequencing become more intense and exacting.

In artistic, entertainment, or other writing intended for leisure audiences, the pressure for controlled novelty in structure is even greater for readers' engagement and pleasure while still maintaining intelligibility. Other domains have similar increased expectations for focused and ambitious designs, sometimes associated with

increased scope, materials, and higher order thought (Paradis, Dobrin, & Miller, 1985; Smart, 1993, 2006). Even in drafting legal or regulatory codes, architectonic kinds of thinking and problem solving are required to coordinate the sequencing of definitions, conditions, restrictions, rules, prohibitions, exclusions, applications, penalties, and the like, both within the text and with prior existing texts in the code (see point 9). Often this high-level coherence must be achieved while working in collaborative or even conflicting teams with competitive goals, which requires even higher levels of architectonic understanding and what actions it supports (see point 11).

7. Meaning Making

In every writing task, writers must develop and express meanings relevant to the situation and transaction of the text, to be elaborated through the tools, conventions, and forms of written language. Meanings are potentially boundless, but they grow in relation to the existing social, organizational, epistemic, or cultural systems one participates in and within which the meanings circulate and have value. Consequently, meanings develop in relation to the genres and activity systems the writer is familiar with and which become vehicles for their circulation (see point 13). But the meanings are also related to the contents and experience of the world one draws on and represents (see point 8), as well as the representations one has learned from others (see point 9).

Although meanings are influenced from the outside, meanings also are impelled by internal commitments, identities, affiliations, experiences, emotions, and perspectives—all of which are developed through one's life. Expressive, trauma, or spiritual writing provide a far end of this personal spectrum, but most communicative impulses in some way come from oneself and one's perspective, even if only to protect one's legal interests or confirm membership in a group. Consequently, learning to consult personal communicative desires and internal meaning impulses challenges writers in many kinds of circumstances.

Bringing internal impulses to verbal form, however, presents attitudinal challenges that writers may need to address. The impulses to communicate strongly felt internal contents may seem to be much more encompassing than the limited verbal formulations one ultimately finds to express them. The diminishment that comes with bringing impulses to form may leave the writer with a sense of disappointment at the frailty of words, undermining motivation and engagement in the writing process. On the other hand, the desire to make words communicate the power of the idea one feels or the discovery of the meaning one is bringing into being may motivate greater commitment and craftwork. At the same time as the writer must deal with the limits of words, the writer must cope

with the sense of risk or vulnerability that comes with presenting one's thoughts, words, or simple competence to readers who may judge the form, content, truth, wisdom, wit, or personality expressed in the emerged text. Whatever the response the writer has to the emergence of impulse into concrete words, such psychological processes add to the emotional complexity of writing (see point 10).

8. Relations to Material World and Experiences to Be Reported On

Even if writers follow the usually sage advice of writing what they know about (or have access to), they must still select from what they know. This is as true for journalists needing to know their beat as for fiction writers wanting to create stories within a social world. Writers benefit from understanding how attention to the world can clarify thinking, vivify a narrative, or contribute evidence to an argument. Building capacity to observe the world around one and transcribe it precisely can develop truthfulness, decrease bias, advance ideas, and persuade readers. Further, as writers engage with specialized knowledge worlds of different subjects, they can discover that each domain uses different kinds of facts, forms of representation of those facts, and selection among them, based on specialized methods of collecting and transcribing realities. Each subject and domain, nonetheless, creates spaces for individual selection, representation, assessment, synthesis, and analysis of facts. A social worker still must identify important facts from client interviews that might impact client eligibility or a client may make selections about what to report, because either they think it irrelevant or they are afraid it may affect their services and benefits.

Underlying the problem of selection is the problem of how the world is experienced and information about it collected, which in the case of professions and disciplines may be regulated by training and made accountable in methodological narratives within reports. A chemical engineer examining the efficiency or safety in a factory will gather different data through different procedures, extracting different materials to be measured by different instruments, than a mechanical engineer testing the condition and safety of the machinery in the same factory or a civil engineer measuring the soundness of the building (Bazerman & Self, 2017). Each as well will be accountable to different professional standards and governmental codes. Some domains and roles offer greater latitudes of decisions about what to look at, what method to use, how to adjust to circumstances, and how to follow leads from one clue to the next. For a historian, finding an archive is only the beginning of mining, recording, and analyzing what it holds and then connecting it to other archives and accounts.

Even outside the accountable procedures of disciplines, writers locate facts and record experience in some way—even if only to notice amusing things as seeds for anecdotes, or to observe flowers closely to write descriptive poems, or to remember stereotypical behavior to fabricate scurrilous political stories. Many people may remember only emotionally salient events of life, but some people record detailed, time-stamped daily transactions.

Issues of methodology are substantive matters for writing, because method directs attention and processes, develops content, and authorizes the text's credibility. Behind methods employed are theories and values, even if the writer only follows conventional disciplinary expectations, habit, or unreflective practice. The writer's perspective, whether unreflective or well theorized, directs the writer to look for specific things to report. Government economists collect data on financial transactions they believe are part of an abstract entity called the economy, upon which the welfare (another abstraction) of citizens (another theoretical construct) depends, and for which the government will be held politically accountable (according to their ideas of how politics runs and upon which they are relying for social support for their positions). Each individual and corporate entity in this economic system then may use that information in conjunction with their own records to calculate actions to promote personal interests and values. Becoming aware of the theories and values that stand behind and direct data gathering gives the writer greater reflexive understanding of writing choices. So epistemology, too, presents problems or questions that writers may face to advance their abilities as writers.

9. Relations to Other Texts

All writing, as all language use, depends on the words, reported content, and expressed perspectives of others (Bazerman, 2004; Volosinov, 1973). In writing, prior texts can take on a greater salience, as texts are enduring and available for reference by both the writer and the writer's readers. Furthermore, prior texts often exist in organized networks within activity systems, to which the writer is responding or contributing. Further, unlike unrecorded spoken language, published texts are protected by copyright property laws and school texts are accountable to plagiarism and cheating regulations. Consequently, some domains have developed expectations for originality and identification of knowledge, thought, and words from prior texts. Legal argument and decisions are strictly tied to legal codes and precedent, which are explicitly quoted and referenced, with substantial national and jurisdictional differences (Tiersma, 1999, 2010); accountancy relies on legal, regulatory, and professional codes, as well as financial documentation (Devitt, 1991); academic disciplines

aggregate knowledge within professional literatures through evaluative sorting processes of citation (Bazerman, 1991); corporations and bureaucracies build knowledge through records and reports while regulating practices, actions and policies through networks of internal documents (Smart, 1993, 2006; Yates, 1989, 2005).

The intertextual practices of each domain have their particularities and peculiarities to be learned and mobilized by those who write for it. Some of that learning is regularized and explicitly taught (such as disciplinary citation form), but the more fundamental puzzles are often left to individuals to solve, tied to their own developing knowledge of their fields and strategic choices about how to position their statements within complex social textual fields and the knowledges these texts establish for their social networks. Among the many puzzles to be solved are identification, evaluation, synthesis, and representation of the most relevant and persuasive prior documents. Then the writer needs to coordinate the representation of prior documents to serve the purposes of one's new statement, maintaining the dominant voice and intention of the new text while drawing on the voices and knowledge of prior texts. Eventually the writer may come to see his or her texts as part of an unfolding intertext, contributing to ongoing communal discussions. The more the writer understands the complexity of ambient knowledge and statement worlds, the more effectively the writer can move the communal project forward while asserting his or her interests, thoughts, imagination, or other contributions into the social reality created by texts.

10. Developing Processes

Whereas the textual product is what is shared with readers, writing processes bring the text into being and constrain the results. If beginning writers are struggling with forming single words, they will likely devote little attention to larger coherences. Writers' processes develop as they iteratively address sequences of writing challenges. Recognition, monitoring, and planning of writing processes themselves present challenges that writers may reflectively come to address to develop personal solutions.

Awareness that writing does not emerge full-blown but takes time and work is the beginning of reflection on process. No matter how advanced and confident a writer, nonetheless, impatience for the writing to be finished and have the text in fully satisfactory form may be an ongoing struggle in order to slow down, work on the text in its many dimensions, and not skip over detailed problems. Learning to focus and persist on the tasks of writing goes hand in hand with learning what to focus on. Many emotional obstacles or lack of knowledge about what to do can contribute to reluctance to focus and persist, let alone reflect on the process. Although the writer may be deeply

committed to the text as an expression of the self, learning to see the text as something apart from oneself facilitates it being worked on and improved, to realize intentions and effectiveness—just as a professional musician or actor or sports player learns to examine performances minutely to improve through practice and further guidance.

Once one recognizes that writing offers time and opportunity for reflection and improvement, identifying the tasks one might engage in even before writing a first draft itself can be a puzzle. Writers may find different planning documents useful for different tasks, but also they may need to identify and gather relevant information and ideas, or simply contemplate the subject and get inspiration from reading. Setting out the sequence and timing of these preliminary tasks and interim documents, and then knowing when one is ready to move on to the next are all process challenges with potentially individualized solutions.

After the writer finally produces a working version of the main text, the writer needs procedures and criteria for guiding revision. Just rereading the draft waiting for spontaneous appearance of red flags may make it hard to get beyond surface issues. Developing questions for deeper revision depends on understanding the issues most relevant for each kind of writing. Questions of sequencing, organization evidence, stance, forms of criticism, representation of events and people, and other elements that can guide revision depend on genre for their salience, expectations, character, and force. Then solutions may be individual and hand-crafted.

Ultimately revision requires the writer to step out of presuppositions and familiarity with the text to see how the reader may make sense of, evaluate and respond to the text (Flower, 1979). Of course, engagement with actual readers during the revision process can help, but this too presents many challenges, starting with resistance to sharing work and defensiveness in hearing responses. Often writers are upset, offended, or even rejecting of comments, or they misunderstand what their readers, editors, or collaborating reviewers say. Knowing how to take the words positively, and even to transform apparently misguided comments into useful information all present puzzles and challenges to narcissism the writer must work out largely on his or her own.

Listening to others as responders or guides in revision is difficult enough when there is no power relation, but when one is being reviewed by an editor, evaluated by a boss, or corrected by a teacher, taking positive lessons from feedback is even more difficult. Writers who learn to use response well, however, can move beyond specific suggestions to understanding and even internalizing the perspective of readers to be able to anticipate concerns. Finding trustworthy mentors and building supportive relationships is another dimension of writer development.

11. Collaborative Processes

From the earliest ages, people write within collaborative social circumstances, as adults or older children guide letter formation, help out with spelling or phrasing, and respond to whatever inscriptions emerge. Support from others continues throughout education and in many social and workplace environments, even if responsibility remains with a single writer. In some situations, moreover, writing is a distributed collaborative responsibility. Collaborative writing may be organized hierarchically or democratically; can engage deep communal thought and negotiation or can fulfill a single predetermined vision; may occur in a brief, single face-to-face event with a single immediate product or may extend over many years in many locations involving many documents; may be intensely interactive on all elements or compartmentalized with parts assigned to different people; can be harmonious or filled conflict; and can be credited to a single person, a team, a corporate entity, or anonymously (Beaufort, 1999; Dias et al., 1999; Ede & Lunsford, 1990).

There is not any one necessary path to collaborative success. Whichever way the collaboration is organized, the team must resolve many problems in organizing the work and harmonizing the final product, and each individual must find a way to participate effectively within the group. Effective participation requires recognition of and respect for the contribution and perspective of other members and building trust that they will carry out their parts. Even within the most hierarchical project, the team leader needs to develop trust others will carry out responsibility for their tasks. Team members need to learn to recognize useful differences and negotiate them while sidestepping unnecessary or harmful conflicts. Each participant needs to understand and respect the constraints of timelines, specific expectations, length limits, and other parameters of project coordination. And someone or some combination of people needs to coordinate the coherence, completeness, and consistency of the final product. Each writer's history of collaborative participations builds a repertoire, perspective, and even taste for different kinds of collaborations, but each new collaborative project is likely to present new challenges, requiring new solutions both at the group and individual level.

12. Audience, Relations, and Situations

Writing ultimately is to communicate with, influence, or be of use to audiences. Understanding and reaching audiences are ongoing challenges, with as many solutions as there are social configurations and people's ways of relating to them. The child's audiences for writing may initially be just a few surrounding older family members, who may be supportive of early efforts but who do not

substantively rely on the child's writing for communication. If the surrounding adults are inattentive, irritated, critical, or dismissive of writing, that may limit the young writer's imagination of what writing can do. If writing continues, it may turn inward, advancing a reflective or memorial relationship to the self, making writing a private matter not to be shared with others. In school, children may be writing to practice and display formal competence to teachers rather than to explore a wider range of audience relations and purposes or see the potential consequentiality of writing for social action and responsibility.

Developing writers may then overgeneralize these early audience relations, inhibiting recognition of the potentials of writing as they reach out into social, work, and public worlds. When writers do make the leap into meaningful purposes in these new audience relations, they may see those moments as the beginning of their real careers while rejecting school writing as stultifying and artificial, even though what they had previously learned was a necessary precondition to their moments of vocational discovery.

Each audience is engaged within a situation, which each writer needs to recognize and analyze. Although knowledge of genres and activity systems provides generalized information about audiences and situations (see point 13), each text arises in a particular moment within evolving events and specific readers, even if one does not have full access to details, as the text can travel through space and time. Many of the texts to which young people are exposed come from cultural and literary systems that share texts among many people over extended periods, supported by publishing interests, cultural values, family practices, and other social mechanisms that are not particularly visible to the child; therefore, children may not see those texts as tied to particular social circumstances. As writers develop, however, they may write stories for classmates or younger siblings, journals to parents reporting on the day's events, or letters to local government officials praising or criticizing them for a current initiative. The more that writers understand what is entailed in that moment, what they want to accomplish, what drives the writing, and how the text might influence a specific person or persons to improve the situation, the more that writers can design the text to have the desired effect (Bitzer, 1968). In addressing challenges of situations and audiences, writers are also learning about the great variety of the surrounding literate world and how to assess situations as sites for writing action.

13. Learning to Use Genres Within Activity Systems

To be understood in any social situation, writing must to some degree be recognizably familiar to coparticipants, relying on typification of actions (Schutz, 1967). Genres are typified utterances (Miller, 1984). The recognizability

of the genre of written utterances provides the reader with clues about what is going on with whom and how that relates to oneself (Bazerman, 2013b). Writers early on develop a sense of genre, recognizing the differences among kinds of writing and what they need to do in order to meet the expectations of each genre (Donovan & Smolkin, 2006). Familiarity with genres depends on exposure to them, the salience of that exposure, and their usefulness in carrying out one's own meanings and intentions. The inscription of one's name is often an early writing task, not only because of a psychological identity but also because people always ask for it and one uses it to claim ownership of pictures, texts, and possessions. Letters to significant relations expressing emotions and reporting events often are salient and can become vehicles of learning. Stories are as well familiar and often the basis of early writing (Rowe, 2003, 2008; Tolchinsky, 2006). On the other hand, a child may be in a household surrounded by history books, but the child may not pay much attention to them until later, if at all.

Whatever the pathways of salience, the repertoire of genres increases with the scope of the child's literate life. Family life may include invitations or planning lists, family newsletters, text messages, social media, and e-mails. Schooling introduces a range of academic genres, particularly as subject areas differentiate across the grades and into secondary and university education. Extracurricular and community activities also may extend genre awareness, or young people may just be attracted to genres they discover in media even if no one around them writes screenplays, jokes, political screeds, hip-hop lyrics, or scientific reports. They may even imitate these genres and seek out groups of people engaged with them.

Although writers may begin by imitating formal elements of genres, over time they may gain a sense of why those elements are there, how these elements address audience needs and provide necessary information, and how genres sequence thoughts and emotions in ways appropriate to the tasks they carry out. They may learn how the audiences have particular roles and interests in activity systems, such as a sales representative who seeks information from product designers to then communicate with customers, or medical professionals on the next shift who need patient information to continue effective care, or lovers of horror stories who regularly scan the offerings of publishers or authors whom they particularly enjoy. Understanding people's roles, motives, and situations within activity systems can aid writers in creating meanings most immediately relevant to the moment and events. Writers can also gain genre flexibility and engage hybridity as they see in new tasks similarity and differences from prior texts, discovering that each new message reinvents the genre (Reiff & Bawarshi, 2011).

Writers engaged the genres of an activity system over time may recognize that each genre is part of a network of genres that together carry out the work of the system (Russell, 1997). Each of the genres is associated with a kind of situation that arises within the activity system, so that analysis of the rhetorical situation can become rapidly focused once one understands how the genre fits within the system of interactions. The mystery story, for example, must first be proposed to the publisher and the manuscript transmitted, perhaps through an agent, entailing correspondence between author and agent, and agent and publisher. Then there are editorial reports, internal decision documents, revisions, revision transmittals, marketing and promotional documents, reviews, and many other genres all necessary to bring the primary genre to visibility in the marketplace, not to mention the contractual and financial arrangements within the legal and accounting worlds of commerce.

The writer's growing knowledge of how genres carry forward interactions in an activity system can help the writer understand what can be accomplished by writing and the potential impact of text. Such knowledge can help the writer decide not only how to write any particular document but also what kind of document to write. Rather than writing a letter to a television executive about an objectionable show with racial stereotypes, the writer might post a video clip with an ironic caption to a social media group in order to gather likes and forwards, which would then come to the attention of the network management concerned about lost viewership. Understanding the dynamics of an activity system may even identify the need for a new kind of genre to mediate a current lack of coordination or flow of information, as when an organization mandates a new accountability system requiring the production of new reports, evaluations, and feedback cycles. Although the change may be initiated through familiar organizational memos, the new mandated documents can foster new kinds of organizational knowledge and action, reconfiguring the activity system. The authors of the initial implementation memos, while writing in familiar ways, may nonetheless be showing great genre creativity in the writing they mandate—creating problems (in both good and bad senses) for all those tasked with the work of producing texts in the new genres.

14. Developing Identity and Efficacy as a Social Actor

Successes in communicating within social groups—having words attended to and understood, and resulting in desired consequences—build the writer's self-perceptions as a successful social actor through writing. The identity developed through seeing the force of meanings created for particular others expands the writer's view of who one is and what one can be accomplished through continued writing—whether

as a poet whose works are appreciated, an architect whose proposals are accepted and contracted to be built, or a social services examiner who gains benefits for clients in need. Success may in turn build reputation that opens up further opportunities to accomplish even more.

Part of coming to terms with one's writer's identity is recognizing, accepting, and appreciating how writing changes one's thinking. As a writer explores the content to write about, makes connections, articulates ideas more precisely, uses the structures of writing, and engages others' ideas, the writer develops new thoughts. Once expressed in writing, these thoughts become a personal commitment of the writer, as these are discovered through the writer's own process. The thoughts then change the writer's public identity as readers associate the writer with words and ideas. The more the words circulate, the more the writer must learn to live with being the voice of those words, for good and ill. Most deeply, the more the writer internalizes the procedures and structures learned and practiced in his or her particular form of writing, the more the writer sees and thinks about the world and others through the intellectual orientation built through his or her writing. Writing also often brings a reflective interiority in the search for meaning and words, and the weighing of alternative formulations and approaches. Writing transforms minds and emotions, whether it turns one into a learned scholar, a witty songwriter, or an online fraudster.

Each of these personal and social identities are hand-built through the particulars of opportunities, experiences, and interactions. Each person will construe their experiences and resources differently, and then deploy their own complex resources in the creative acts of making new meanings and new statements. Thus writing is always hard work but constantly expands the meanings in the world, the uses of writing, and the social networks of communal life. Thus a kind of courage is constantly required, as one puts one's identity and social presence literally on the line to be judged by the response and uptake of others. Yet making those statements potentially advances one's place in the world and the causes, concerns, and interests one addresses. Each success, however partial, brings greater sense of efficacy and courage, inspiring further risks in even more ambitious undertakings, more novelty and creativity to carry the world forward. Whether in small local terms or grand visions, writers are always presented with the puzzle of who they are, in what kind of world, and what they can accomplish by their writing.

MODELS ARE FOR WRITERS, WHEN THEY NEED THEM, FOR SPECIFIC TASKS

Of course significant social identities may be formed in the family, religious or neighborhood communities, in

sports, entertainment, business, or civic service with little or no writing. Writing, nonetheless, can take on an important contributing role in each of them, leading the person to grow as a writer even as they grow in their primary identity. As writers associate their identities with writing, they are tempted to explore what they can accomplish in the world through writing. They may aspirationally look to other writers, their texts, or their process to find inspiration, form goals, find guidance, imitate, or adapt. Each developing writer gathers a personal collection of model writers and texts that influence perceptions, motives, stance, style, skills repertoire, procedures, and choice making.

No matter how much the writer may learn from these personally selected models, those lessons never quite meet the new situation and never quite dictate what should be written and how, at this moment, in this place, by this writer. The writer alone must take the leap to create new meanings based on the model he or she constructs of the situation and what the situation calls for. The more the writer grows, comes in contact with more models, more situations, and more resources, the more the writer can gain a sense of the self, with a distinct writer's identity and an original approach to problems perceived in a world viewed through a personal lens, leading to innovations in writing, thought, and action. Such writers have gone far beyond guidelines they learned in school, through other standard knowledge, or even through their previous self-selected models. The writer's fresh construal of each new situation leads to new ideas and ways of reaching out to others, expanding thoughts, processes, and practices.

Many, however, perhaps driven by other exigencies or other forms of development or perhaps constrained by lack of support, guidance, and sense of efficacy, do not explore further possibilities of writing in their lives beyond what they are offered in school. For them, the limitations of what is taught in school and how much it engages their total development may define boundaries of how they wind up using writing throughout their lives. For them what generalized models of writing are deployed in school are likely to be most enduringly consequential; for them we ought to be most careful about which simplified, fictionalized models and guidance school offers, whether it is the most restrictive model of adhering to correctness within highly conventionalized paragraphs or the most challenging model of producing an advanced academic essay on social problems. We should ask whether the process and product models that schools provide prepare them for how they might use writing in their lives; we should also ask whether these models are presented with such authority that writers find it difficult to choose and develop their own models flexibly as situations and needs arise in their lives. Excessively authoritative models can put high walls around school writing, making it harder

for nascent writers to reach out to other meaningful writing experiences.

Our pedagogies should help students locate their own evolving models and build their confidence and judgment to evaluate situations and make choices on the basis of their individual internalized models that they continue to develop. Even more we should help students articulate the problems they are trying to solve in writing. We may offer aid in thinking through and suggesting alternatives for solving the problems they recognize, and even suggest at times other models they might consider and other problems they might address. The problem of what to write and how, nonetheless, always necessarily remains the students' own.

Alexander Luria (1986) in his autobiography tells of experiments with children playing with blocks. Children who were given explicit diagrams of shapes to build including the location of specific pieces became efficient at locating the designated pieces and reproducing the diagrammed model but did not develop much understanding of the relation of the parts, how to construct new or larger shapes, design principles, or stability of construction. Those, however, who were shown only the outlines of the target design and then had to select and arrange pieces from a large collection of possible parts grew in understanding the relations and contributing role of pieces, exploratory actions, and creativity and stability in new designs. They grew from the aspirational targets they were shown, rather than constrained by narrow directions. Then they successfully came up with new detailed individual models of their own to construct their solutions to the problems they framed.

The lesson for writing instruction and educational models of writing should be clear. We should not predominantly hand students detailed models of what texts should look like or the processes they should follow, limiting the depth and complexity of the problems they are solving. Rather we should regularly set aspirational goals challenging students to solve the most interesting problems they can address and then provide students resources and support while they solve what to make and how. Introducing students at times to simplified models of form and practice might provide some useful heuristic starting directions. Responsibility, however, should remain with students for choosing among alternatives, identifying potentials, and building their own models relevant to their communicative situations. Only then will they become writers.

Writing is not a stable object produced by stable procedures; in a fundamental sense, writing does not lend itself to being captured in a general model. This goes beyond the complex variability in each person's experience and capacities, to the constant newness of discovery and invention, inspired by the novelty of situations. There is

no predetermined model kit to make writing. Writers draw on an ever-expanding repertoire of models from model kits of unlimited size with an untellable numbers of pieces to be brought together in an indeterminate number of ways, sometimes using innovative procedures. Writing is always an act of creation, bringing a new text into the world, no matter whether the result looks pedestrian or exotic. Habits and ways of approaching writing developed over a writer's life trajectories (what we may call the writer's more persistent models of writing) are idiosyncratic, always open to amendment, and always to be reconsidered in light of immediate circumstance. Although we can and should apply science to understand writing, writing is still an art produced by a writer impelled by the need to communicate in order to make something new that will reach across to another mind. Any science that overlooks that writing is an art creating fresh meanings from the shards of recycled words loses sight of the very phenomenon we are trying to understand.

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