

CHAPTER 3

ATTENDING TO PHENOMENOLOGY: RETHINKING COGNITION AND REFLECTION IN NORTH AMERICAN WRITING STUDIES

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As detailed elsewhere in this collection (esp. Bazerman; Carillo; Talbot), when North American Writing Studies of higher education and workplaces (henceforth, NAWS) turned to European continental philosophies, it turned away from information-processing (IP) cognitive theories. Those theories were early casualties of this “social-turn” (e.g., Bartholomae, 1985; Bizzell, 1982; Brand, 1987); today, NAWS seems somewhat squeamish about the fact that the brain is an organ with a broadly generalizable structure, predictable development, capacity constraints, operating costs, and so on. Yet cognitive research is a dynamic and thriving field that does not much resemble the after-image that persists in NAWS. Some of these changes in cognitive research have been driven by high-profile advances in laboratory methods, such as functional Magnetic Resonance Imaging (which monitors intensities of blood-flow as a proxy measure for specific areas of the brain that are engaged by a task), but other changes have been conceptual and thus largely invisible to NAWS.

To make these changes more visible, we first emphasize that NAWS and cognitive research on writing have both suffered from their estrangement. Second, we describe one of the most significant of these conceptual shifts: namely, research in phenomenology and neuro-phenomenology, which challenges IP cognitive constructs by positing embodied and enactive theories of neural functioning that are based on biological rather than cybernetic machine models. As will be seen, this research also challenges notions of “reflection” as currently valorized

in NAWS. Third, we indicate how reconceiving reflection phenomenologically could help both NAWS and cognitive research on writing. Finally, we describe the pedagogical and curricular implications of phenomenological reflection for faculty seeking to responsibly operationalize national consensus documents like the WPA Outcomes Statement for First-Year Composition.

THE STATE OF THE FIELDS

Dueling caricatures hamper effective collaboration between NAWS and cognitive research. To transcend these caricatures, two points must be acknowledged: first, John R. Hayes was fair in saying that English departments (the institutional homes of most NAWS scholars) have an “unfortunate tendency to faddishness” (1996, p. 12). Yet these departments’ discomfort was not just *au courant* mistrust of empiricism (Berkenkotter, 1989; Charney, 1996); NAWS was wary that a scientifically or pseudo-scientifically grounded determinism would explain away (or even attempt to erase) the socially produced differences among writers from different backgrounds that the field was learning to understand as *motivated*. At this point, NAWS has used poststructuralist critiques of linguistic transparency, substitutability, presence, and innocuity to investigate nearly every conceivable configuration of writer-identity, writer-task, writer-context, and writer-history. NAWS’ sensitivity to the interpersonal, intertextual, intergeneric, and inter-situational complexities of writing events are at an extraordinary pitch. For instance, it is not typical in mainstream NAWS research (as it still is in cognitive research in the Hayes tradition) to speak of “writing ability,” “writing quality,” “the writing process” or “the writer” in any general sense. That is, decades of solid work uncovering the influences of genre and technological affordance on composing processes, the complications of language identity and inheritance in school (Berkenkotter, Huckin, & Ackerman, 1988; Brodkey, 1994; Casanave, 1992) and workplace (Paré, 2002) composing tasks, and the complexities involved in any attempt to transfer writing practices among different contexts, have made such generalizations unsustainable.

However, having determined that writing is not simply an “in-head phenomenon” (Rowe, 2008, p. 410) NAWS hypercorrected by equating the sociality of writing with complete context-dependency (Blythe, 2016). For all its sensitivity to the contextual, NAWS seldom acknowledges the materiality and structure of the brain, closing itself off from developments in the cognitive sciences that might have usefully informed its deepening commitment to the cultivation of “reflective” writers. Anthologies or handbooks designed to introduce graduate students (e.g., Matsuda & Ritter, 2010; Vandenberg et al., 2006; Villanueva & Arola, 2011) or undergraduates (e.g., Downs & Wardle, 2014; Kinkead 2016)

to NAWS seldom acknowledge cognitive research after the 1980s (but see Miller, 2009, pp. 1032-1048); in fact, we observe that even in this collection, references to Flower and Hayes (1981) and earlier abound, but no mention of Hayes' work since. NAWS has allowed itself to stop paying attention once "our" colleague left the partnership.

But cognitive science has continued to find writing an interestingly complex activity to study. Hayes, for one, is still at work refining construct-models of writing. In two substantial revisions (1996; 2012) to the model he and Flower advanced in 1980, Hayes integrated feedback loops to show that motivation, affect, and dispositions influence working and long-term memory and cognitive processes (1996, p. 4, Figure 1.3). Later he incorporated more prominent and specific roles for "task environment," including "transcribing technology" and "task materials" (2011, p. 371, Figure 2). These developments are entirely consistent with and could yet enrich the social-turn developments described above. For example, the construct of a limited "working memory" as a structural constraint for writers at early age or diminished experience levels retains considerable explanatory power for phenomena like the predictable lower-level skill-regression writers experience when encountering a new kind of composing task or composing technology.

Some traditions of inquiry not concerned with process modeling (i.e., those that test theories by manipulating variables like task-sequence, composing tool, or environmental condition) are oriented toward diagnostic and therapeutic agendas—isolating particular subroutines or brain functions, differentiating among types of learners and/or their abilities, impairments, difficulties, language affiliations or developmental stage. But others parallel recent interest in NAWS on motivation, intention, self-efficacy, and self-regulation—capacities that potentially bear on reflection. Barry J. Zimmerman and Rafael Risemberg (1997), whose names are usually associated with this tradition of research in cognition, appear to have arrived independently at the much greater weight Hayes assigned to "physical environment" and "social environment" a year earlier (1996, p. 4, Figure 1.3). As they find, "[m]otivational processes such as perceptions of self-efficacy and positive self-reactions during learning are as essential to setting effective writing goals and sustained achievement as cognitive measures of writing competence" (1997, p. 76). In a recent metastudy, Tanya Santangelo, Karen Harris, and Steve Graham (2016) confirm that explicit teaching of at least five of the ten self-regulation strategies that Zimmerman and Risemberg hypothesized—including approaches already widely endorsed in NAWS, such as prewriting to brainstorm and organize ideas—consistently produce positive measurable effects on the quality of student writing. Yet NAWS has been slow to take up empirical research in social and affective dimensions of cognition

that might have helped it perceive and address development of writing abilities among its client populations (or even to help it better understand the causality behind certain practices it has long endorsed).

The second point that must be acknowledged is that much cognitive research on writing operates with impoverished constructs for text products. For instance, it is still common to find a measure of “text quality” designed as the dependent variable of interest, but no description of the specific traits that judges (also rarely identified) evaluated, or with what kind of scale. We know of only two studies that attempt to account for the effect of genre on any measure of text quality (Beauvais, Favart, Passerault, & Beauvais, 2014; Olive, Favart, Beauvais, & Beauvais, 2009). Revision remains predominantly locked in the stage-process paradigm (e.g., generation-production-review) that Flower and Hayes problematized 35 years ago, and editing remains conflated with “mistake detection” (e.g., Kellogg, 1996). Moreover, extrapolations from clinical/laboratory composing contexts are vulnerable to empirical challenge from NAWS’ critical-cultural tradition. It seems unlikely, for instance, that the self-regulation strategies of a young woman of color whose schooling has trained her to distrust and demean the sound of her own “voice” will much resemble those of “Lynn” (Emig, 1971) or Flower and Hayes’ “*Seventeen* magazine writer.” Learning-disabled writers have been a consistent focus, but contemporary cognitive models have no way yet to account for influences like cultural trauma (Cushman, 2011), postcolonial composing contexts (Giltrow, 2003), or identity conflicts like stereotype threat (Schmader & Johns, 2003) and anxieties about assimilation (Ivanič, 1998). We share enthusiasm for the newly unobtrusive and affordable software applications that pair keystroke-logging, screen-capture data and even eye-movement, since such applications have begun to show us real-time enactment of the self-monitoring and resource-management strategies hypothesized in the late twentieth century. However, the conclusion of Huub van den Bergh, Gert Rijlaarsdam, and Elke van Steendam (2016) that at “different points in the writing process, different cognitive activities dominate the configuration” (p. 58) should remind us that the cognitive processes we can capture with these applications are responsive to environmental conditions such as genre, timing, history with task, and so on (Yancey, this volume, might call these effects the existence of “the prior” in the lab; Taczak and Robertson, “historical baggage”).

Thus we find contradictions: while it continues to be an article of faith in the cognitive sciences that “efficiency” and “automaticity” of mental processes are universally desired ends (Flower & Hayes, 1980, p. 25; Kellogg & Whiteford, 2009, p. 251; Kellogg et al., 2013, pp. 162-163), NAWS seems determined to slow down and disrupt these processes (Cooper, 2011, p. 441; Mays & Jung, 2012, p. 55; Reiff & Bawarshi, 2011, pp. 331-332) to trigger metacognition and

critical engagement. Meanwhile, its obliviousness to contemporary cognitive approaches to writing notwithstanding, mainstream NAWS remains ironically cognitivist in its current priorities, investing considerable pedagogical and curricular energies in “critical thinking,” “genre awareness,” “metacognition,” and “reflection.” In other words, NAWS wants to change the way we think about writing and help people understand how writing makes us think, but is not much interested in the specific mechanisms by which that thinking gets done. The unfortunate effects of this “crypto-cognitivism” are 1) that NAWS seldom informs these aims of critical thinking or reflection with what’s known about motivation or self-regulation and 2) even now finds itself having to remind those attempting to incorporate reflection in their writing classrooms that reflective writing *itself* must be taught, practiced, and developed over time (Sommers, 2011; Ihara, 2014; Yancey, Roberston, & Taczak, 2014, p. 4).

PHENOMENOLOGY AND REFLECTION

It is ironic that when composition “left” cognitive theories to IP cognitive psychology in the late 1980s, it left them for continental philosophy firmly in the tradition we emphasize here: the phenomenological tradition most closely associated with Maurice Merleau-Ponty (2014). Known as “the philosopher of the body,” Merleau-Ponty’s work has been a consistent, if largely unremarked, influence on NAWS. Unlike many of his students (Foucault and Bourdieu among them), he emphasized the positive aspects of agency—the existential human freedom of the subject. It is this version of continental theory that is gaining influence in cognitive science (Gallagher, 2012), providing an alternative to IP models in a way that is strikingly consistent with the expansive cultural-historical and embodied approaches to theorizing writing now in favor in NAWS itself. (For another alternative to the IP tradition, see Kristie Fleckenstein’s provocative formulation of an “eco-cognitive” methodological orientation for NAWS (2012, pp. 86-97).)

In this section, we sketch a model of reflection that is on the one hand consistent with what we have learned from the last 35 years of social inquiry into composing processes and on the other hand, could contribute to a more robust construct of “writing” for cognitive research. NAWS currently sees reflection as a means to many ends: to help facilitate transfer, to help students avoid unknowing entrapment in dominant discourses; to preserve and respect linguistic difference; and, perhaps most frequently, as a means of assessing growth as a writer. To be sure, reflective writing as an institutional phenomenon—and in particular as an assessment phenomenon—has come under ideological critique from the perspective of ethics (Conway, 1994); genre (Bower, 2003; Emmons,

2003) and subjectivity (Jung, 2011; Scott, 2005). We raise a different question here: less ideology than feasibility. Barbara Tomlinson (1984) raised still-unsettled questions about the limitations of what she called “retrospective accounts” of composing, and phenomenological cognitive research since then suggests that reflection is more of a post-hoc by-product of unconscious decision-making than a deliberative prelude to it (Freeman 2000; Kahneman, 2003). As such, we need to attend to work in cognition that suggests significant operational constraints on our ability to reflect, especially in contexts like compulsory writing classes. Put another way, we need a way to describe the cognition in reflection, and the phenomenological tradition can help us do this.

Marilyn Cooper (2011) redefines agency as “the process through which organisms create meanings through acting into the world and changing their structure in response to the perceived consequences of their actions,” whether conscious or nonconscious (p. 426). Drawing on neurological research on what is termed “prereflective awareness,” she explains that “we do not experience our intentions as causing our bodily movements,” but we nevertheless can attribute the actions to our “own” agency (2011, p. 434). This reframing, we suggest, can be extended to reflection. The first principle is that there is a first-order pre- (or non-) reflective self-awareness, “primordial feelings,” in Antonio Damasio’s (2012) account, which result from nothing but the living body and precede any interaction between the machinery of life regulation and any object. Primordial feelings are based on the operation of upper-brain-stem nuclei, which are part and parcel of the life-regulation machinery. Primordial feelings are the primitives for all other feelings. (Damasio, 2012, p. 108)

A second-order, “reflective self” as Damasio calls it, is the narrative or autobiographical self, the self that takes into consideration past and future, planning and imagining, or in Damasio’s words again, “the kind of consciousness illustrated by novels, films, and music and celebrated by philosophical reflection” (2012, p. 168). This “self” is what brain research has largely studied, in part because it is the most fully human self (we share primordial feelings with all animals), but also because the areas of the brain implicated in these activities are closest to the skull, where electrodes can monitor them most easily. But mounting research shows that the reflective self is not a separate add-on feature, but grows out of and is fully integrated with first-order self-awareness. The second is built on the first and cannot function without it. Each affects the other dynamically. As Sean Gallagher (2012) points out, this pre-reflective self-awareness “also includes a sense of agency—a sense that I am in control of my actions.” We never ask, “someone is thinking this, who is it?” (Gallagher, 2012, p. 132).

Although the conscious reflective self sometimes overrides the non-conscious processing of meanings (Cooper’s term) or images (Damasio’s term), conscious

reflection is seldom required for decisions nor is it typically the end-result of a sequence of conscious reasoning (though people can and do justify unconscious choices with retrospective reasoning [Kahneman, 2003; Lehrer, 2010]). Similarly, people are capable of a great deal of learning without conscious reflection on it. We need only engage in skillful coping, where “acting is experienced as a steady flow of skillful activity in response to one’s sense of the situation” (Dreyfus, 2005, p. 378). In skillful coping, we focus on the intentional object (the chessboard, the road ahead, achieving the goal of the writing task), not our bodily movements or our process of reasoning or our cognitive states—unless there is an interruption, a breakdown, a need to consciously reflect. This “feedback loop between the learner and the perceived world” (Dreyfus, 2005 p. 132) is what Merleau-Ponty calls “the intentional arc,” and one monitors—always unconsciously but sometimes also consciously—one’s movement along this arc. This is what Merleau-Ponty (in Dreyfus’ 2005 formulation) describes as “next step” monitoring of progress. In order to act, we do not need to have a final goal “in mind” or a mental representation of the action. We only need to move, in a way motivated by our sense of direction, and monitor whether that movement seems to feel as if we’re going in the right direction, in coordination with others (though not in lockstep imitation or even agreement). It is not a matter of matching behavior to a goal, but weighing whether and how much one’s behavior moves one along one’s “intentional arc.” It is only novices or those with cognitive impairments who must reflect on their process in order to accomplish it—who “need to think about” engaging the clutch in driving, or forming letters and words.

This “ideomotor” theory rejects the separation of perception and action. Humans, like animals, have what William James theorized as “common coding” (Prinz, 1990). We perceive and respond integrally as we engage with the world (Downey, 2010), or as Merleau-Ponty puts it, we are “geared” to the world. Recent research on imitation shows that much of our action and learning (development of habits of engagement with the world) is based not on stepwise or algorithmic processes, on the model of a computer, but rather on imitation, *mimesis*. Neurobiology has provided much support for this view with the discovery in the 1990s of “mirror neurons,” which are engaged both when we perform an action and when we see it being performed (see Remley; Talbot, this volume). IP cognitive theory’s postulation (Fodor, 1975) of “a language of thought” that intervenes between perception and action through a separate level of mental representations proves unnecessary. In the phenomenological view, what the IP tradition would consider “task definition” would be called “perception”—a more foundational construct than language or thought. We perceive the world in order to respond to it, in writing as in any other way. But, crucially, we respond to

the world in order to perceive it. Perception, such as our perception of situations that might require writing (exigence or genre perception), has an intentional arc set against a background of motivated action. And those motives, that direction, are always already social. Any definition of task includes the cultural frames of reference by which we come to understand certain things (and not others) as tasks to be defined (this was Bartholomae's influential critique (1985)), as well as our own near and distant histories with the language, relevant genres, and seemingly similar contexts laminated into our responses.

This conflation of perception and action does *not* mean that conscious reflection has no role in mimetic learning. As Greg Downey (2010) points out, even in forms of physical education (e.g., sports, dance) teachers/coaches “scaffold” students’ imitation with sophisticated techniques that draw students’ conscious attention to mimesis, and the same might be said of musical performance, touch typing, or writing (as in the complex mimesis that is paraphrase). What it *does* mean is that learning to perform some action—including writing—is always a combination of conscious and nonconscious learning, and that the substantial roles played by proximity to others, shared tools and physical contexts, affective states, etc., in this learning are largely unavailable for detached scrutiny—at least not without years of training in such detachment. We need not decompose analytically and reflect on each component of performance to learn to perform, even at the initial stages of learning. We only have to have a sense of the next step, within the horizon of attention both before and behind us.

As Alfred North Whitehead (1920) posited nearly a century ago, “what we perceive as present is the vivid fringe of memory tinged with anticipation” (p. 73). In this light, when van den Bergh et al. (2016) concede that the precise nature, location and function of what has been variously called the “monitor,” the “central executive,” and the “control level” (p. 68)—that is, the “master” cognitive function that apportions attentional resources to specific subroutines—have been quite difficult to pin down, we could respond in two ways. We could conclude that this difficulty indicates gaps in existing models that need filling, or we could conclude that what’s needed is a more expansive operating construct of “consciousness.”

REFLECTION, COGNITION AND COMPOSITION: A NEUROPHENOMENOLOGICAL CONVERGENCE

Having sketched a phenomenological account of reflection to complement Cooper's (2011) account of agency, we disaggregate several different understandings of reflection (though often used interchangeably) from two that emerge from phenomenology. We can start with dictionary definitions: reflection as serious

thought, consideration, or deliberation—serious in the sense of an atypically systematic or analytic approach to a problem. This remains the definition that obtains in machine modeling, as suggested by the formal “cogitation” or “cognition” on problem-solving (Flower & Hayes, 1977). It is also worth noting the literature on embodied decision-making from studies of neural responses to economic choices (Kahneman, 2003; Lehrer, 2010), and a budding field of neuro-rhetoric. Both fields point strongly to the pre-conscious and emotive bases of decision-making, and the retrospective dimensions of conscious deliberation.

These understandings we distinguish from “critical reflection,” which has a long history in educational theory and research, especially in teacher education, and which originates from John Dewey’s (1993) view of teachers (and students) as agents of progressive change in schools and society. To do so they must be, Dewey wrote, open-minded, responsible, and wholehearted (that is, courageous and persistent in the face of adversity). A long tradition of theorizing various stages or levels or kinds of reflection is summarized by Deborah Yost, Sally M. Sentner, and Anna Forlenza-Bailey (2000). Much of composition’s view of critical reflection lies in this tradition, whether explicitly acknowledged or not, in terms of its value for transfer, for social consciousness and critique, and so on. But it is important to note that *composing* reflections has been especially important here as a key pedagogical technique in teacher education. This technique is also frequently applied in professional education; in business and technical communication, for instance, students in internships are assumed to develop professional skill and identity through reflective writing. This assumption was theorized in a very influential way by Donald Schön in the 1980s, and his formulation of the “reflective practitioner” (1987) has guided theory and research not only in professional education but also in management and organizational communication, where it has been expanded beyond the individual to a plural “reflective organization” (Gray, 2007).

A fourth understanding, metacognition or “thinking about thinking,” has been substantially investigated in psychology departments, some of which comes from IP cognitive psychology, some from different traditions. Closely related to this is a two-decade-old tradition of research on “social metacognition,” which is pursued in social psychology, especially branches influenced by cognitive psychology. This research examines people’s “complex determinations about the reliability of our own thoughts, feelings, and beliefs as well as attributions about the thoughts, feelings, and beliefs of others around us” (Jost, Kruglanski, & Nelson, 1998, p. 137). Several lines of inquiry here speak to issues that have become recently visible in composition research: people’s thoughts about their past and future in personal development; people’s formation of cultural attitudes; the formation and reformation of stereotypes, prejudice, and bias; as well

as issues important to professional communication and cultural theory, such as metacognition in teams and organizations, and in consumer choice (Briñol & DeMarree, 2012).

Those four ways of conceptualizing “reflection” are instructive to compare with two distinctly different understandings of reflection that emerge from phenomenological traditions: mindfulness and *neurophenomenology*. The first, cultivation of contemplation, meditation, or mindfulness in writing, dates back almost to the founding of the field. Sondra Perl published “Understanding Composing,” an alternative theory of the writing process based on the work of Eugene Gendlin (1982), a humanist psychologist and philosopher who was an important U.S. exponent of Merleau-Ponty’s phenomenology of the body. Perl (1980) adapted Gendlin’s therapeutic techniques of body awareness to analyzing what we would call today the socio-cognitive processes of writing. In that same decade, James Moffett explored yoga as a pedagogy (1982), and Peter Elbow (1989) investigated the phenomenology of freewriting. Perl took up this work again in 2004 with *Felt Sense*, writing exercises based on the principle of phenomenological bracketing, of becoming aware of one’s intentional arc and monitoring one’s feelings to know—or rather feel—what the next step is. Again, reflection is not something that is set apart in time or space from the writing processes. It is integrated, moment by moment, into the process (e.g., van Manen, 1990). Contemplative practices such as mindfulness and yoga have begun to be developed and studied empirically (both qualitatively and quantitatively) in a number of fields, most notably Mathematics and Physical Education and a pedagogical literature has begun developing in NAWs (Rifenburg, 2014; Walker, 2015; Wenger, 2015).

Neurophenomenology, however, comes from the legacy of Alexander Luria, the greatest of Vygotsky’s collaborators. As he and his colleagues put it, “to understand the brain foundations for psychological activity, one must be prepared to study both the brain and the system of activity” (Luria et al., 1979, p. 173). Psychologists pursuing this legacy have used introspective methods, including phenomenology, to understand the structure of the neural system. They have used phenomenological description—the description of one’s own mental phenomena “bracketed off” from immediate action—in conjunction with neural imaging to produce “neuro-phenomenology,” a term coined in the mid-1990s by the Chilean cognitive neuroscientist Francisco Varela (1996). The goal of neurophenomenology is to use first-person phenomenological description to expand and enrich third person accounts drawn from the experimental methods of neuroscience and vice versa (Gallagher, 2012, pp. 36-37, 107-108). The classic study is of Nepalese monks who reported that their meditation practice increased their “clarity” (see Thompson, 2007). Neuroscientists intrigued by the

monks' first-person reports attached electrodes and measured their brain activity (third-person scientific description), while at the same time asking them to rank their feelings of clarity on a Likert scale before, during, and after the episodes of meditation where they reported "clarity" (first-person phenomenological description). Novice monks formed a control group. Experienced monks' ratings of "clarity" corresponded with increases in high amplitude gamma synchrony as compared with the novices. Thompson points out that not only do the self-reports show these things are "really going on," but without the phenomenological self-report data, the changes in gamma synchrony would just be "noise" in the data to the neuroscientists. Further, the bridging of first and third person perspectives shows that cultural differences in the ways people live their lives (in this case highly trained mental states) involve specific neural/somatic differences. Similar neurophenomenological studies have been undertaken in a range of areas, most notably pain management.

In this view, the brain is not best understood, in Marvin Minsky's words, as a "computer made out of meat," manipulating internal symbols in order to solve exterior problems out in the world (as cited in Hall, 2013, p. 22). Where machine/computer models understand writing as the transcription of inner speech or thought into external inscription, emerging models of cognition are biological, understanding cognition as an attribute of all animals—only developed in humans to the point that they are capable of that kind of tool-use known as writing. As Rafael Núñez, Laurie Edwards, and João Filipe Matos (1999) describe this paradigm in their seminal discussion of embodied cognition in mathematics education: "cognition is about enacting or bringing forth *adaptive* and effective behavior, not about acquiring information or representing objects in an external world" (p. 49, emphasis added). The concept of "adaptation" is also crucial to Cooper's reframing of rhetorical agency, discussed above, which—not coincidentally—also draws on neurophenomenological research (2011, pp. 426-427).

Neurophenomenology may provide a new way of looking at reflection in writing and on writing, both as a method of research investigation and, perhaps, as a method of improving writing processes (although it should be acknowledged that as of this writing, most of these studies examine effects at the level of word-choice or sentence-revision tasks on very specific populations, which limits their usefulness for broad theorizing (e.g., dysgraphics or dyslexics v. "normal" writers or readers; writers of alphabets v. ideograms, and so on). This limitation reflects the need for feasibly controllable study-design, although it also reflects assumptions in the cognitive sciences about what "writing" is. We await studies over a longer timespan with the same group of writers, which might help us monitor developing genre knowledge as evidenced by increasingly efficient orchestration routines in the brain. We also imagine that traditional methods such

as document-based interviews, screencasting, probes during writing, etc. might be combined with clinical methods of brain imaging to address questions of how structures of attention (viz., short-term memory) are managed with and without conscious reflection, how anxiety is managed, with implications for writer's block, how multi-modal genre features are perceived and managed, among a range of other pressing topics.

This quick survey of approaches to "reflection" in NAWS is intended to show the wide range of understandings of reflection in the field, to point up the need for greater clarity in discussions of reflection in writing, and to suggest that (neuro)phenomenology may offer an account of it that is compatible with but goes beyond IP accounts. Moreover, neurophenomenology and embodied cognition can be seen as picking up phenomenological strands of writing processes theory and pedagogy that have been part of NAWS just as long as IP cognitive writing process theory has, though far less developed as an empirical research program. What is clear is that the complex cognitive activities that NAWS calls "reflection" involve socially and historically distributed mental processes, are necessarily diffuse and ill-defined, and even when these processes are most deliberate and purposeful, they are applied to a (re)construction of equally diffuse and ill-defined moments in a writer's past. NAWS is beginning to acknowledge that "reflection" is not usefully understood as a final step in "the" writing process. The elaborate scaffolding for thinking-about-thinking or thinking-about-feeling some contributors describe elsewhere in this collection (e.g., Khost; Reid; Winslow & Shaw) are one way to glimpse the significant *obstacles* to reflection in the short-term physical and social environment of a compulsory class on "writing"—relative, to make a pointed comparison, to the physical and social contexts in which the Nepalese monk-adepts achieved their states of "clarity" (see also Mays & Jung, 2012, p. 55).

IMPLICATIONS

If the mind is a function of the body's (including the brain) material engagement with the rest of the material world—a world that includes other human bodies and minds—cognition, like language itself, is intersubjective. Writing is always already intersubjectively engaged with others even when physically or temporally separated (a separation which writing crucially affords). While it is certainly true that writing allows us to engage with (cope with and shape) the non-human material world through cultural artifacts, it is also true that we write with our bodies, literally engaging with physical tools, writing instruments and surfaces, cobbling together writing routines and abilities we need from available materials and neural substrates for motor control, depth perception, and language

processing systems (Bazerman, 2013, p. 60). Such tools and surfaces, as activity theorists have long pointed out, “distribute” our cognition beyond the skull and among the instruments that help us expand our capacities. Yet our cognition appears to be shared among other bodies as well: in a womb, the mother-child heartbeats synchronize; in a room, interlocutors perceive each other’s bodies (motion, sound, smell, and sometimes touch or taste—e.g., in a kiss). When writing with others physically present (i.e., the phenomenon of “coworking” Pigg, 2014; Spinuzzi, 2011), this is literally true, but even when a writer is alone, others’ physical/sensory dimensions are present, and a writer’s body responds emotionally and physiologically (for example, with writing anxiety or avoidance—see Reid, this volume). Thus, a full account of writing would acknowledge that we think *with* our bodies: the nervous system is tied to the endocrine system, both in our heads and throughout our bodies, fusing the electrical and chemical. These electrochemical processes are tied in complex feedback loops to other systems: circulatory, muscular/skeletal, and so on. It would also extend beyond subpersonal processes to suprapersonal processes: the social and material participation of writers in the world, well beyond the skin barrier and backward and forward in time.

Summing up a substantial tradition of research on genre in NAWS, which is largely—though seldom acknowledged as such—underpinned by Alfred Schutz’s concept of typification (Schutz & Luckmann, 1989), Bazerman (2009) hypothesized that the language affordances of established textual forms position readers and writers in “defined problem spaces” that at once define the task as well as suggest tools for its completion (p. 136). Structured encounters with problem spaces defined by fields and professions refigure cognition. The neural legacies of these encounters are what we experience as “learning”: how to define problems or tasks as “problems” or “tasks” in the first place and how we acquire the ability to accept and reject potential solutions and means of working toward them. What “cognitive reconfiguration” in the Vygotskian tradition brings is a focus on development over time, but not simply development of writing abilities (which has been the emphasis of IP cognitive psychology), but also the development of productive engagement—agentive participation—in a course, discipline, profession, or any social practice. What we emphasize here is that cognitive reconfiguration links brain and body and society—the biological and the cultural.

Negretti (2012) and Bazerman et al. (2013; 2014) have found evidence suggesting that cognitive development can be scaffolded and traced in this way. It is important to note that these studies used students’ writing as a way to both harness and to measure metacognitive growth and that all three are longitudinal studies that take time as a salient independent variable and examine lexical

and intertextual formations in students' writing as data in its own right, not as a source of students' claims about what they learned. That is, NAWs has historically looked at reflective writing as evidence that the student has become reflective, but these studies use writing as evidence of the development toward a future state—linguistic evidence of growth of which the student may not (or not yet) be fully aware in any explicit sense. By putting the onus on careful curricular creation of problem spaces (see also Yancey, Robertson, & Taczak's "critical incident" model, 2014, pp. 120-128), cognitive refiguration sees reflectiveness as less a pedagogical intention and more an experiential effect.

Teachers, administrators and researchers who would benefit from external support for such curricular reenvisioning can find it in national consensus documents like the *Framework for Success in Postsecondary Writing* (2011) and the Council of Writing Program Administrators' Outcomes Statement for First-Year Composition (2014) both of which invite teaching and research faculty to conceptualize writing as much more than an "in-head" phenomenon. The original Statement, first published in 1999, uses a distinctly command-and-control set of verbs to describe the optimal experience of composition students: "focus," "use," "respond," "learn to," "adopt," "understand," "control" (2001, pp. 323-325). The revision distinctly recharacterizes first-year composition as an opportunity-space in which students can "develop facility," "gain experience," "develop flexible strategies," "explore . . . concepts," "practice applying" and "developing knowledge . . . through practice" (for an account of these revisions, see Dryer et al., 2014, pp. 136-143).

Faculty across the disciplines benefit from workshops in which they can compare the original and revised versions of the Statement (starting with the first line, which pointedly replaces "skills" with "practices" (Dryer et al., 2014, p. 142). While engaging these changes leads to better, more informed conversations about issues of curriculum design, we also observe that—likely because the new language frames writing in college as a matter of *experiences with new practices* and not as a set of skills to be learned—many faculty begin to recover a sense of the difficulties and pleasures involved in those experiences. Although "reflection" does not appear in the original Statement (an artifact of a moment in time before Yancey's pioneering efforts (1998) began to be fully felt) we find it situated in the discussion of "Processes" in the 2014 version, where it is proposed that students should "reflect on the development of composing practices and how those practices influence their work" (Dryer et al., p. 145). This is conscious—mindful—reflection on their experiences and practices, including changes in those routines, and the effects of these changes *on* a task and *in a context*. We see these changes as invitations to position the documents—and our teaching practices and traditions—in the phenomenological and neurophenom-

enological tradition, where brain and body and society all write and are written.

In this light, dueling caricatures begin to dissolve: “critical awareness” versus “automaticity” (or “individual development” versus “social change”) is revealed to be a false dilemma. When we ask students to attend to problem spaces and the tools that seem available to bring to bear on them, we are working with their cognition and their sociality in a way that is construct-compatible with the understanding of “the present” that emerges from re-reading the phenomenological tradition. If consciousness is distributed, both laterally among artifacts, our entire bodies, and other humans as well as longitudinally across the extended timeframe we perceive as “the now,” then the object or focus of any particular act of reflection becomes accordingly much more complex. Materiality, language affiliation, geography, race, class, embodiment, all become more available for consideration by NAWS and cognitive science alike. We look forward to the work ahead.

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