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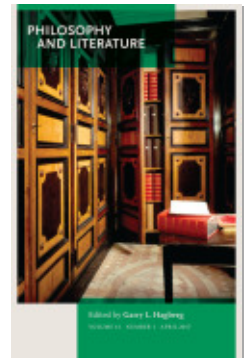
Engaging the World: Writing, Imagination, and Enactivism

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ENGAGING THE WORLD: WRITING, IMAGINATION, AND ENACTIVISM

Abstract. Writing is not purely cerebral; it reaches out beyond the brain to engage the world. Two kinds of world-engaging processes are discussed here: a dynamic loop involving writing, reading, and writing again, and a second dynamic loop involving writing, reading to an audience, receiving feedback, and writing again. Several writers, including Flaubert and Nabokov, have discerned these loops, which have also been explored experimentally. I close by discussing the role that active engagement with the world plays in imagination.

I have rewritten—often several times—every word I have ever published. My pencils outlast their erasers.
—V. Nabokov¹

A pen is a machine to think with.
—K. Oatley and M. Djikic²

THE WRITER ENGAGES THE world not only by living in and reflecting it but also by two dynamic processes, one sensory/motor, the other social. The former involves cycles of writing, reading what has been written, responding to it, and writing again; the latter involves writing, reading to an audience, responding to their reactions, and writing again. Dynamic processes involving brain and world, via perception and behavior, have been of great interest to philosophers of mind and cognitive scientists in recent decades. In contrast to classical cognitive science, *enactivism* proposes that cognition is a form of engagement with the world; in particular, cognition is embodied, extended, and dynamic. Cognition is embodied in that it involves the (nonbrain) body; extended

in that the cognizer's mind extends—literally extends—into her environment; and dynamic in that much cognition involves feedback loops linking world, perception, brain, and behavior.³

Not surprisingly, enactivism rejects the “classical sandwich model” according to which perception and behavior are just the inputs and outputs, respectively, of cognitive processes, and are consequently largely incidental to the meaty business of cognition. By contrast, in the enactivist approach, perception and behavior play ineliminable roles in many kinds of cognition.⁴

The next section is devoted to *manual* enactivism—the feedback loops that involve writing, reading what has been written, responding to it, and writing again. This is followed by a discussion of *social* enactivism—writing, reading to an audience, responding to their reactions, and writing again. A final section explores an enactivist approach to the perceptual imaginings involved in writing and reading literature.

I

Gesture provides a good example of embodied cognition. On the classical sandwich model, gestures are conceived of as merely expressive of cognition; the agent has a brain-based thought or emotion that is expressed in gesture. Having determined she should turn right, Sally gestures in that direction; feeling angry, she raises her hand as though to strike. According to this view, the function of gesture is largely social, indicating the correct direction to a friend or anger to an opponent. While not denying the expressive, social aspect of gesture, enactivism assigns it an additional, highly significant function: gestures are constitutive of some kinds of cognition. Gallagher argues that gestures do not simply express thoughts; rather, gesture is a form of thought. “Gesture as language may serve communication with others, but it may at the same time accomplish something within ourselves, capturing or generating meaning that shapes our thought.”⁵

One line of evidence that gestures do not merely express thoughts and emotions is that blind people—including those blind from birth—gesture when they speak, even when they know their interlocutor is also blind.⁶ It is also known that memory is hampered when gesturing is restricted. Recollection of recently memorized material is reduced if a cognitively demanding task (e.g., a math puzzle) is undertaken after memorizing but before recall is attempted. Participants who are not allowed to gesture during the cognitively demanding task typically have worse recall

than those allowed to gesture during the task. In other words, by carrying part of the cognitive load, gesturing reduces the demandingness of the task (*HG*, pp. 136–49; *SM*, pp. 123–26). It is important to stress that the embodiment thesis does not endorse the claim that the brain plays no role in cognition. That would be absurd. Rather the claim is that nonbrain parts of the body also play a role in cognition.

Writing can be gestural and therefore embodied. Dickens frequently acted out characters and scenes as part of his writing process.⁷ Writing itself—the movement of the pen across the page or the fingers across the keyboard—is a kind of gesture: it is an expression of thought and emotion that is typically intended to result in a socially available text. The independent evidence that gesture can be a significant part of cognition suggests that the mechanical act of writing is a component of the writer’s thinking about his or her literary work.

How might the mind extend beyond the cognizer’s brain and body? Clark and Chalmers offer the following argument:⁸ Inga wants to visit a museum on 53rd Street. She recalls—that is, accesses her memory of—its location and walks there. Otto, whose memory is very poor, also wants to visit the museum on 53rd Street. He is initially unable to recall how to get there, but had previously jotted down the relevant information in a notebook. After consulting his notebook, Otto too can find his way to 53rd Street. Inga’s memory of the route plays a crucial role in getting her to the museum, and Otto’s entry in his notebook plays exactly the same role. At this point, Clark and Chalmers appeal to what has subsequently become known as the Parity Principle:

If, as we confront some task, a part of the world functions as a process which, *were it done in the head*, we would have no hesitation in recognizing as part of the cognitive process, then that part of the world *is* (so we claim) part of the cognitive process. (“EM,” p. 8; emphasis in the original)

One way to spell out the Parity Principle is by endorsing functionalism, according to which mental states are defined by the roles they play in the mental economy.⁹ Inga and Otto both have a memory of the route to 53rd Street because the brain states in Inga’s head and the words in Otto’s notebook play the same functional role, namely, getting them to 53rd Street. One might object that Inga’s recall is swift and effortless while Otto’s is slow and laborious, but that can’t be right: we often struggle to recall relevant facts. Another reply to Clark and Chalmers is that Otto cannot be described as “remembering” the route because

the relevant states are not in his brain, but that just begs the question against the extended mind hypothesis.¹⁰

One person's memory can also extend into another person's brain ("EM"). Say that, instead of relying on his notebook, Otto relies instead on Inga's ability to recall how to get to 53rd Street. Again, one might object that when Inga isn't around, Otto cannot access her brain-based memories, so his mind cannot truly be said to extend into Inga's. But this objection misses the mark: based memory is likewise limited and can be jogged by environmental stimuli that are not always present. For example, I may be unable to recall a childhood event until my memory is jogged by a family snapshot. Moreover, we can easily change the thought experiment to account for this worry: Inga and Otto are almost always in each other's company.

The written text is an especially potent form of memory. The writer's craft involves several kinds of memory-intense activities and, like Otto, writers use notebooks and other texts to reduce the demands on their brain-based memories. To begin with, they record both first- and third-person events in notebooks and diaries. People, scenes, and conversations they have witnessed are stored for later literary use, as are their own thoughts and reactions. Second, the writer's own text is an extension of her brain-bound memory, reducing the need to recall exactly what has been written so far. This is especially true for writers of literature who not only have to recall character and plot but must also keep track of literary styles and devices. Third, the contents of a bookshelf can be a form of extended memory. Writers are typically very widely read, and those works upon which they draw need to be available for consultation. Some writers do have prodigious brain-based memories, but external memory can still play a part in their writing. It is far more likely that they exploit both their excellent brain and the written text.

The third enactivist claim is that cognition involves dynamic cycles reaching from the body into the environment and back again.¹¹ Texts are perceived, visually, orally, and, in the case of braille, tactilely. For Noë, perception is an active mode of exploration of the world.¹² Visual exploration involves feedback loops: perception drives behavioral responses that change the perception of the scene, which in turn drives further behavioral responses, and so on. We visually interrogate our environment by moving the eyes, head, and body. A number of experiments have shown that without eye movements, participants cannot learn to recognize unfamiliar symbols, spot patterns when presented on an array of black-and-white squares, or count more than four dots in the visual

scene.¹³ It is well known that when the eyes are fixed for a short while on a single point, the image fades.¹⁴ In other words, action is essential for maintaining a visual image.

In addition to these general perceptual explorations, the writer investigates in detail an aspect of her world of special significance to her: the text she is writing. She perceives her text, reflects on it both cognitively and emotionally, and very often rewrites. This process is dynamic: the revised text is read, reflected on, and revised again. Clark puts it this way: “paper provides a medium in which . . . , via some kind of coupled neural-scribbling-reading unfolding, we are enabled to explore ways of thinking that might otherwise be unavailable to us” (*SM*, p. 126).

A variety of evidence supports the significance of dynamic interactions between writer and text. If the manual cycle is central to the process of skilled writing, expert writers should make more changes to their texts than novices. The quote from Nabokov at the top of this paper supports this idea; in addition, experimental evidence holds in its favor. Hayes and Flowers observed both expert and novice writers during the writing process and report that experts made three times as many revisions as novices.¹⁵ A study of Flaubert’s legacy—thirty thousand pages of plans, notes, and drafts—confirms the experimental results. Flaubert identified four layers of writing, responding, and rewriting: an initial stage devoted to producing incomplete sketches of scenes that, together, constituted a rough outline of the overall story; a second stage in which this material is expanded into a rough draft, the existing manuscripts of which reveal extensive corrections; a third stage devoted to stylistic concerns; and a final stage in which he produced the finished text (see “WT”).

Guy de Maupassant advised novice writers to “get black on white.” Presumably, beginning to write—rather than merely wishing to write or daydreaming about writing—has a motivating effect, but it is also an essential step in the initiation of the write-respond-revise-write cycle. The writer cannot dynamically engage with a nonexistent text. I stress here that the enactivist view of writing does not claim as conceptually impossible that writing could be neither embodied, nor extended, nor dynamic. The writer could, in some very weak sense, write entirely “in her head”; such a world is logically possible. But enactivism is not a claim about what is possible in distant worlds; it is a claim about the writing craft as practiced by real writers in the actual world. It is an empirical hypothesis, not an analytic one.

II

The discussion so far has focused on dynamic cycles involving writing, reading, revising, and writing again. What of the social cycle in which the writer engages: from writer to audience and back via reading drafts publicly? Flaubert, for example, read his drafts to friends who provided extensive feedback (see “WT”). The audience becomes a new medium through which the writer thinks.

Gallagher has introduced the idea of *mental institutions*—mechanisms that extend the mind into the social domain and enable certain kinds of cognition.¹⁶ Legal judgments, for example, take place in legal systems that lie beyond the practitioners involved; indeed, without legal institutions legal judgments would be inconceivable (“SEM,” pp. 4–6). The production and consumption of literary texts also take place in a mental institution that embraces writers, editors, publishers, and readers. They involve a set of norms that enables and makes possible certain kinds of writing and reading—norms that govern literary genres, forms, devices, and styles. These norms make writing literature possible in that some kinds of writing are inconceivable without them. Modernist novels, for example, would not have been embraced as a new literary style were they transported to the eighteenth century; they would not have been recognized as literature at all. While the norms of writing can be flouted—as in the case of Gertrude Stein—they can be flouted only against the backdrop of those norms. Attempting to overthrow all literary norms simultaneously does not yield new literature.

Sterelny has stressed the importance of apprenticeship in the cultural evolution of behaviorally modern humans.¹⁷ It facilitates the cultural transition of knowledge and skills, both within and across generations. A youngster, apprenticed to an expert stone knapper, learns the process much more quickly than s/he would by trial and error. Archaeologists, lacking skilled role models, have found making stone tools in the traditional way exceedingly difficult. Apprenticeship is social in that the apprentice and expert share a common goal and work together to achieve it. Once again there are strong feedback loops: the expert responds to the novice’s attempts and the novice responds to the expert’s advice. In addition, experts modify the novice’s environment to promote learning. Expert hunters, for example, provide wounded prey for novices to hunt.

A strong apprenticeship component is part of acquiring writing skills. Whereas many literary apprenticeships are probably like the informal relations common in our evolutionary past, creative writing classes are

also a form of apprenticeship. Just as the expert hunter provides simple hunting situations for the novice, the expert writer sets the novice easy and closely supervised writing tasks. The novice's degree of success or difficulty with these tasks can lead the expert to modify the approach. Once again we have powerful social feedback loops from expert to novice and back.

Learning new skills from an expert also has an imitative aspect. Humans are the most imitative animal, which runs counter to the common misconception that imitation is an inferior mode of learning that lacks creativity.¹⁸ Newborns are capable of facial imitation such as smiling and tongue poking in response to adult models.¹⁹ We are more inclined to imitate actions than goals: behavior that achieves a goal inefficiently will nonetheless be imitated. In one experiment, the researcher made a panel light up by touching it with his forehead rather than his hand. Having observed the experimenter, fourteen-month-old children also touched the panel with their foreheads.²⁰

Writing too has imitative aspects. Fashions are very probably the outcome of widespread imitation, and literature is not spared this effect. Literary styles and genre come and go. As a more sophisticated example of literary mimesis, Chapman's muscular translations of *Illiad* and *Odyssey* prompted both Keats's poem "On First Looking into Chapman's Homer" and a more vigorous style in Keats's subsequent work.

So far I have focused on the production of written texts, but now I focus on a much older literary social practice—the oral tradition. In this case, dynamic feedback loops involving writer and written text don't exist, but feedback loops do take place between narrator and audience, resulting in a very direct version of the social dynamic loop. Very often the audience's response is immediately evident to the author/narrator, who can modify the narration accordingly. Reading one's own text to oneself may also provide a feedback loop by opening up a new, auditory medium for exploration.

III

Literary texts serve as a scaffold for readers' imaginations, allowing them to envision characters and scenes they otherwise could not. Imagination takes a variety of forms, many of which are involved in both writing and reading literature. Perceptual imaginings re-create perceptual experiences; motor imaginings re-create the experience of movement; and emotional imaginings bring forth empathetic responses.²¹

It is tempting to conceive of consciousness as an inner (or “Cartesian”) theater in which the objects of consciousness are presented.²² Similarly, it is tempting to think of the writer as reporting on paper the action they observe on their inner stage. The inner-theater model of consciousness has been widely criticized because it raises uncomfortable questions about the inner audience.²³ Who is watching the action on the internal stage? If no audience exists, the metaphor collapses. On the other hand, postulating an inner audience or homunculus pushes the question of consciousness one level down, with the homunculus watching an *inner* inner theater, and so forth. Precisely the same objections apply to the inner-stage model of the writer’s imagination.

Enactivists discard the inner-theater model and its Cartesian roots. Visual imaginings are instead understood as essentially involving motor activities. In two studies Laeng and Teodorescu investigated the effects of eye fixation on vision compared with visual imagining.²⁴ In the first study, participants were shown a six-by-six grid. Five of the thirty-six cells were black; the remainder white. Participants had twenty seconds to memorize the pattern formed by the black cells. One group of participants was asked to focus on a point in the middle of the grid, while another was allowed to examine the pattern freely. Eye movements for all participants were recorded. The participants were then asked to visually imagine the grid, again with eye movements recorded. For both groups the pattern of eye movements in the imagination case reflected the pattern in the “eyes-open” case. Participants allowed to explore the real grid also explored the imagined grid; those who fixated on the real grid fixated on the imaginary grid. Moreover, the eye movements for participants free to explore in the imagined case closely matched those in the real case. Significantly, the group who did not fixate performed better on a subsequent spatial memory task in which they were tested on their recall of the stimulus. In sum, eye movement is essential for effective imagining.

In study 2, participants observed a computer screen that showed a cross in the middle and an object in each corner. One group of participants was free to survey the screen, but was asked to fixate on the cross while imagining the scene; that is, participants were asked not to explore their visual imaginings. A second group of participants was free to survey the scene on the screen and free to explore their visual imaginings. Recall of the scene was better in the second condition. The upshot: exploring visual imaginings is essential for good visual recall. Movement is essential for visual imaginings, at least to the extent that

movement involves eye movements. The literary imagination extensively involves visual imaginings, and is thus a form of embodied action—the literary imagination is not purely brain based.

This result generalizes. A history of bodily engagement with the world is a necessary condition for imagination. Disembodied Cartesian spirits do not imagine. The necessary bodily engagement takes a range of forms corresponding to the modes of imaginings of which humans are capable. As the visual case emphasizes, perceptual engagements are preconditions of perceptual imaginings; motor engagements of motor imaginings; emotional engagements of empathy; and so forth.

It is by engaging with the world that the writer imagines it afresh.

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6. S. Goldin-Meadow, *Hearing Gestures: How Our Hands Help Us Think* (Cambridge: Harvard University Press, 2003), pp. 136–49; hereafter abbreviated *HG*; see *SM*, pp. 123–26.
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