Varieties of Knowing in Science and Religion

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KNOWING OURSELVES AS EMBODIED, EMBEDDED, AND RELATIONALLY EXTENDED

by Warren S. Brown

Abstract. What does it mean to know oneself, and what is the self that one hopes to know? This article outlines the implications of an embodied understanding of persons and some aspects of the "self" that are generally ignored when thinking about our selves. The Cartesian model of body–soul (or body–mind) dualism reinforces the idea that there is within us a soul, or self, or mind that is our hidden, inner, and real self. Thus, the path to self-knowledge is introspection. The alternative view is that persons are embodied (entirely physical creatures), embedded (formed by our physical and social environment), and at times extended (cognitively soft-coupled to artifacts or other persons). This article emphasizes the bodily, active, contextual, relational, often simulated, and sometimes extended nature of the selves that we are, and that we hope to know.

Keywords: cognitive extension; dualism; embodiment; human nature; physicalism; self; situational embeddedness

What Sort of Self?

Inscribed on the Temple of Apollo at Delphi in ancient Greece was the maxim, "know thyself." Plato uses this maxim, voiced by Socrates in the dialogue of *Phaedrus*, to consider the problem of time wasted in pursuit

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of mythology and other obscure topics compared to the importance of knowing oneself. Knowing oneself was considered a critical door into the knowledge of others and of the myriad nuances of the social world—that is, a door to wisdom.

But what is it that we know when we know ourselves? What are the "selves" that we seek to know?

(1) Is self-knowledge knowledge of an inner, private "self," "soul," or "mind," known only by looking inward (introspecting)?

(2) Is there a "true self" inside that escapes expression in our actions, such that we need to discover and learn to express our "true inner self?"

(3) Is knowledge of the self equivalent to knowledge of the functioning of the brain?

(4) What part does the body play in what we know about ourselves, and what part our physical environments or our social contexts?

(5) Is the self-to-be-known able to be isolated from its ongoing contexts and social relationships?

The Cartesian Self—"I Think, Therefore I Am"

Philosopher philosopher René Descartes provided the clearest and perhaps most radical assertion of the inner nature of the self, and the distinction between the body and the self (also referred to as the "soul" or "mind"). For Descartes, the foundational bit of knowledge from which all else could be derived was the subjective experience of his own mind—"I think, therefore I am" (Descartes [1637]1986). He knew himself to exist as a self because of the unmistakable subjective experience of his own thought. Since he could not imagine that rational thought was something that could be done by a body (by physiology), thinking had to be substantially different and separate from the functions of his body and its actions in the world. Thinking must be a nonmaterial, disembodied process (thus, body–mind or body–soul dualism). For Descartes, thinking was accomplished by a nonmaterial mind which was inside, private, and available only through introspection. The actions of the body were accomplished in a secondary manner by the rational nonmaterial mind interacting with the irrational physical body via the pineal gland.

The Cartesian view expands on and solidifies what has been described as the "turn inward" of St. Augustine of Hippo many centuries earlier (Cary 2000). Augustine was a neoplatonist for whom physical objects (like the body) were mere shadows of ideal forms. The essence of a person must therefore be a nonmaterial form of some kind. Consequently, to know oneself was for an inner self to explore (literally move about within) the inner nonmaterial world of the mind. As with Descartes, the self to be

known was inside, private, and self-sufficiently independent of the body and the environment (at least ideally), and knowledge of this self was a matter of exploring an inward space.

This turn toward an understanding of the real "me" as something inside entailed the idea that the body was a mere physical vessel for this inner soul/mind/self. Since this inner part of the person is rational and capable of being spiritual, it must rule over the body and its passions. One important implication of this inward turn in the Augustinian view of the self was for religiousness to become understood as a private, individual, and subjective inner experience (also discussed in Murphy [2006] and Brown and Strawn [2012]).

Despite near universal rejection of such mind/body dualism in modern cognitive science and neuroscience, the implications of the Augustinian/Cartesian view of human nature persist. Modern neuroscience has been characterized as Cartesian materialism by philosopher Daniel Dennett. Dennett argues that while most scientists would now agree that thinking is a property of neural processes, the brain is nevertheless still understood as an inner processor of abstract information that is functionally separate from the rest of the body. The body and the world interact with the inner brain through sensory inputs and motor outputs that require processes of encoding into, and decoding out of, abstract representations that are presumed to have shed their sensory–motor embodiment. In effect, the brain is viewed as a computer to which a body has been attached. Thus, the *mind–body* dualism of the Augustinian/Cartesian view has been replaced by *brain–body* dualism—that is, Cartesian materialism (Dennett 1991).

In much the same manner as neuroscience, modern cognitive science can also be characterized as Cartesian materialism, or, as Mark Rowlands calls it, Cartesian cognitive science (Rowlands 2010). The information processing model that has been predominant in cognitive psychology for the last fifty years understands the brain to be a computer, while the body merely provides input and output buses for the disembodied computational processes occurring within the brain (reviewed by Miller 2003). Cognition is the manipulation of abstract representations that takes place entirely in the brain situated between the input of the sensory systems and the output of the motor capacities of the body. This model has been likened to a "cognitive sandwich"—the meaty cognitive processes of the brain are sandwiched between the mere bread of input and output (Hurley 1998).

Thus, to know one's self in the Cartesian worldview (whether the earlier Augustinian/Cartesian world of body–mind dualism, or the more modern world of Cartesian materialism) is to attend to what is going on in the private, inner spaces of the mind (introspection). What is thus to be known is content and processes within a cloud of abstract mental representations

(either an ephemeral soulish cloud, or something like a modern computational cloud) that are only distantly connected to the body, one's own actions in the world, or the outer world that one inhabits.

The Embodied Self—"I Act, Therefore I Am"

Neuroscience makes it fairly clear (at least very highly plausible) that mental activity is a functional outcome of the physiological activity of the brain. This is one meaning of the idea of "embodied"—that is, that the self is not a nonmaterial spirit, but is somehow an outcome of the physical process of the brain. However, as we have seen, this form of embodiment can be merely Cartesian materialism—a body–brain dualism substituted for a body–soul dualism. So, even in much of modern neuroscience, the self to be known is inside the head and only minimally connected to the body and its interactions with the world. The mind and the self are still hidden inside in brain processes that are largely occult.

However, the idea of embodied cognition goes further than the mere physicality of mind in arguing that the processes of thinking actually involve the body (Clark 1997; Teske 2013). This view argues that what we refer to as our mind is grounded in interactive brain–body processes. The constituents of thought and mind emerge from, and remain rooted in, motor activity and sensory feedback (either current or recalled). In many ways, knowledge of the actions of the body constitutes the processes of thought—involving either ongoing action, or action simulations (further discussion of simulation in the next section). As one small example, one's knowledge of a spoon would not be constituted by an abstract representation (symbol) within the computational processes of the brain, but would be constituted by the remembrances of bodily interactions with spoons—what they feel like and what one has been able to do with them.

One illustration (among a myriad of others) of the embodiment of mind comes from neuropsychological studies of the syndrome of unilateral neglect. This syndrome sometimes appears in patients with damage to the right parietal cortex. The basic symptom involves a failure to recognize or attend to any information from the left side of the patient's world. Everything occurring in the left part of the patient's visual, auditory, tactile, and kinesthetic world is not perceived—simply neglected. A study of the visual imagination of these patients illustrates the embodiment of perception and imagination (Bisiach and Luzzatti 1978). Two patients with this syndrome who lived in Milan, Italy, were asked to imagine themselves in the Piazza Del Duomo of their city, standing on the steps of the cathedral, and looking into the piazza. They were then asked to describe what they saw. All the features described were aspects of the piazza that would be on the patient's right side if they were, indeed, standing there. Even in the imagination, the left side of the piazza was neglected. However, when asked

to imagine they were looking at the piazza from the other end, the features that were described were those that would now be on the patient's right side—all of which were missing from the previous description. The content of visual imagination was tied to the imagined place and orientation of the patient's body. Remembering and imagining were not abstract, but embodied.

Importantly for the richness and intelligence of human thinking, these bodily experiences that constitute the mind include speech acts and language interactions with other persons. Much of what we experience as thought is, on closer inspection, the internal simulation of speech acts—statements and language-based reflections directed at ourselves or some vague (or at times specific) audience.

Discussions of embodied cognition often raise the issue of the nature of abstract ideas that have no clear connection to artifacts, events, or actions in the external world. A number of philosophers of mind have argued that even abstract concepts that would seem to have no particular embodied representation can be understood as metaphorical extensions of bodily experiences—or at least they begin that way (Lakoff and Johnson 1999; Johnson 2007). For example, the abstract concept of "time" is comprehended using metaphors based on movement—time passes, slows down or drags, time rushes by or flies; or events are in the past (they are behind, we have passed them) or in the future (they are in front and yet to be encountered). A metaphorical link to the sensory and motor experiences of movement provides an embodied basis for the semantics of the abstract concept of time. In addition, of course, the semantics carried by the linguistic and situational contexts within which the word "time" is used in language interactions create additional embodied meanings of this abstract idea.

Neuroscientist Antonio Damasio (1999) in his seminal book, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*, takes a very embodied view with respect to the nature of the self. For Damasio, our idea of our selves is built upon the experience of feeling one's own body as it interacts with the world. We understand our experiences and our thinking as ours—owned by our self—based on the feelings (both sensory and emotional) produced by our interactions. In Damasio's formulation there are two selves. The *core self* is linked to the mostly unconscious awareness of the life functions of one's own body as it acts and is affected by the environment. The *narrative self* is derivative from the core and is constituted by a somewhat more consciously available narrative of our history of environmental and social interactions. In both cases, our self is constructed out of our embodied experiences of acting in the world and being acted upon.

The implications of embodied cognition for our view of our selves are significant. For example, if I have a different body, I would have a differently

constituted mind. Consider this—if you had the *body* of an elephant but the same *brain* you have, you would have a very different *mind* . . . because mind is built from bodily experiences of interactions with the world. Given the body of an elephant, you would have built your mind through very different ways of interacting with the world—for example, by using a trunk rather than hands to manipulate and learn about the properties of objects.

This view of mind has interesting implications for the minds of persons with congenital malformations of the body. Christian Keysers (2011), in studying the phenomena associated with mirror neurons (see below), describes the brain events associated with viewing pictures of the manual activities of other individuals. When viewing a picture of a person drinking from a cup, the arm and hand area of the motor cortex becomes active in persons with normal body morphology. However, in a person born without arms, the foot area becomes active. When one must drink from a cup using a foot, motor areas controlling the foot become active when viewing others drinking cups, even though they are doing so using hands and arms. The understanding of cups and drinking are formed by the person's history of embodied interaction with the world—manual or pedal.

If mind is embodied, so also is what we imagine to be our self. In the body–soul dualism of the Cartesian understanding of human nature, my "self" is a nonmaterial reality inside of me. In the world of Cartesian materialism, where thinking is a computer-like process of manipulating symbols that are abstract representations of the world, the self is a set of data abstracted into a category that is labeled "me." Embodied cognition suggests that the self-to-be-known is built on the actions and experiences of the body in the world. Thus, to know my self is to remember (simulate) the experiences of my bodily interactions with the physical and social world. To know myself is also to know what I can imagine doing in the future. I am this body that has this particular history of being an active agent, and this particular realm of possibilities for future action. In this light, theologian Philip Hefner and his coauthors referred to a human being as a "bodyself" (Hefner, Milliken Pederson, and Barreto 2015).

The Simulated Self—"I Simulate, Therefore I Am"

If our minds (our selves) are formed by acting in the world, then action must be somehow implicated in thinking—even in the seemingly offline, interior, nonactive processes of rumination. As I have already indicated, many theorists who endorse an embodied view of mind consider such apparently offline thinking to be a process of sensory–motor simulation (Hesslow 2012). We think by using our sensory and motor systems to simulate actions and their sensory consequences within hypothetical contexts. Even when our bodies are quiet—perhaps as we sit daydreaming in

an easy chair—we are simulating (imagining) embodied experiences—not only recalling the visual or auditory or tactile nature of things experienced in the past, but also experiencing remembrances of the bodily feedback associated with our imagined actions.

Most importantly, a great deal of what we experience as thought involves the simulation of speech interactions. We simulate conversations with specific others, vague others, or perhaps with ourselves. As I write this article, I am formulating various possible sentences. If I stop and consider what I am doing, I notice that I am imagining saying these sentences to an audience of potential readers. Thinking about what to write is simulating things that I might say to a readership. And the process of typing the words is accompanied by an almost audible experience of my saying the words being typed. The mental activity is not one of processing abstract information, but of simulating speech acts.

Thus, my private thoughts are rehearsals (simulations) of potential actions—things I might say or do in particular circumstances, and the likely impact of such saying or doing. My inner dialogue involves simulated statements in imaginary contexts. The inner self that I experience is in reality a rehearsal of my past, and a simulated future of myself as an embodied agent in the world.

The phenomenon of mirror neurons makes it clear that we can run sensory–motor programs offline, and that it is this sort of simulation that constitutes our understanding of others, ourselves, and the world—particularly the social world (Keysers 2011). Mirror neurons are neurons (primarily within motor systems) that respond in the same way while *viewing* the activity of another individual as they do when the observer is *doing* the same motor activity. Thus, *understanding* the actions of another person appears to require *modeling* the activity being observed within one's own motor control systems. But the activity of the motor systems of the brain involved in modeling or mirroring does not become expressed in bodily actions. We can run simulations of acting offline. In this way, knowing something about the world (in this case, the meaning and intentions of the behavior of other persons) is accomplished by motor simulation.

In the world of Cartesian materialism, thinking is a computer-like process of manipulating symbols that are abstract representations of the world—that is, "information processing." In the world of embodied cognition, thinking and knowing occur through action simulation, including the simulation of speech. To know myself is to know (simulate) what I have done in the past and what these actions felt like, and what impact they made on the world. To know myself is also to know (simulate) what I can imagine doing in the future, and what impact I might have in various imagined situations. To know my self is to know a knower that knows itself and others by simulated action.

The Situated Self—"I Am Somewhere, Therefore I Am"

If we are embodied selves then we are also always somewhere embedded in some situational context. Thus, the theory of embodied cognition also entails what is known as situated cognition (Greeno 1998). This idea asserts that actions of the body—and therefore that which constitutes thinking—do not occur outside of a context. Mental activity is always about actions at some place and at some time involving interacting with particular situations—whether immediately present, clearly imagined, or vaguely felt. Thus, thinking is *contextualized* action simulation.

I previously discussed the embodiedness at play in my writing this essay. The process of thinking about what to write is a process of simulating in my head saying these sentences to an audience . . . you, my reader (although you are at the moment a rather vague group). Thinking about what to write in this essay is simulating things I might say in a particular context . . . a discussion with you (whoever you might be). I am not thinking abstractly in the information processing sense, but simulating interactions with other persons in a context (both of which are somewhat vaguely felt, but nevertheless present).

Thus, the self that I am to know is not simply a body (and brain) that acts alone in a void, but rather an agent that interacts with specific sorts of contexts. The self that I can imagine is always embedded within some situation that I have experienced at some prior time. It is not possible to consider myself—to know myself—as an isolated person extracted from the particular contexts of my personal history or present situation. Even in my imagination, I am always somewhere doing something.

This leads to an important additional point: the agent that I must come to know acts somewhat differently within different contexts. I am a somewhat different person in context X than I am in context Y because the actions that are me are done with respect to the particular demands of the situation, and occur with respect to rapidly unfolding physical or social feedback. In some sense, I am many selves in that each context that I inhabit elicits from me a somewhat different repertoire of actions, reactions, and feelings.

Of course, there are consistencies and similarities (hopefully) in the me that is the agent nested in the various contexts of my existence. I have the same body. I bring the same backlog of memories and skills. Most importantly, I have a historical narrative that has me as the central character, despite the differences in what I am in different scenes within this play. We all hope that our narrative has some integrity across the various contexts of our lives. Nevertheless, my self cannot be extracted (or abstracted) from its embeddedness in all the various contexts of my life. The situational feedback from my situatedness has inescapably altered the nature of me.

The Relational Self—"I Am in Relationships, Therefore I Am"

The most important contexts within which human persons are situated are social. We are embedded within constantly morphing networks of social relationships. Our personhood (selfhood) is constituted by the impact of our unique history of interactions with others. Therefore, what I can know about myself is embedded in my history of interactions with, and feedback from, other persons. Our characteristics as persons have been deeply formed by our history of interpersonal interactions. As the Russian psychologist Lev Vygotsky put it, "It is through others that we become ourselves" (Vygotsky 1987).

Philosopher Charles Taylor proposes the idea that humans are fundamentally dialogic selves—persons set within a "web of interlocution" (Taylor 1989). The idea of dialogue and interlocution for Taylor is meant to encompass a broad range of human interactions, including but extending beyond language-based conversations. Without taking into consideration the many others with whom we are in dialogic relationship, it is hard to adequately understand our selves. Thus, our existence as selves is fundamentally relational—that is, dialogic. We are relationally embedded creatures.

Modern relational psychodynamics puts a great deal of focus on early childhood attachment relationships as critical to the development of the self (Bowlby 1969). Early experiences involving the quality of attachment with parents and other caregivers create within each person a basic model for the expected nature of all human relations and, therefore, a critical core for the relational formation of the self. These are models of the expected nature of embodied interpersonal interactions. If these early relationships are secure, persons are endowed with a self that is set within a relational model that suggests that other persons can be trusted to interact in consistent and caring ways. If early relationships are inconsistent, threatening, or chaotic, the person develops an insecure attachment style; that is, personhood becomes embedded within an insecure relational model presuming a self that is inadequate to become relationally attached, and that the responses of other persons are likely to be threatening or chaotic, and not trustworthy.

In *The Physical Nature of Christian Life,* Brad Strawn and I tell the following fictitious story regarding the impact of an insecure attachment history on relational personhood.

> Consider a simple example of a young woman who grew up in a family where males were treated as more valuable than females. When she would attempt to speak up in the family, she would be ignored or even told not to interrupt. As an adult she became a competent lawyer, but continually found herself submitting to men, even when they were her peers. She did this despite the fact that her coworkers gave her feedback that she did not

> appropriately assert herself, especially in situations where she was the expert or the higher ranking attorney. Her insecurity, reflective of her family history, made it difficult for her to incorporate the feedback of her peers and to change in ways that allowed her to become more comfortable in asserting herself. Based on insecurity from the past, she faced these situations by defending her current self and resisting change and growth. (Brown and Strawn 2012, 77)

This woman's self is conditioned by both her history and her current relational context. She cannot be understood (or understand herself) apart from comprehension of the nature of her past and present relational embeddedness.

Thus, the self-to-be-known is inherently relational. As Taylor suggests, we are constantly embedded in formative dialogic interlocution. A self is a body whose actions are embedded in, and contextualized by, a community. We cannot imagine our embodied selves outside of our place in a relational human network.

The Physically Extended Self—"I Incorporate Tools, Therefore I Am"

The concept of a situated and relational self might suggest a discreetly embodied agent that is nevertheless enmeshed in contextual and relational extrapersonal situations. In this view, there is the inherent idea that the self/person is bounded by the skin, although nevertheless deeply impacted by the outside influences of the contexts with which he or she interacts. However, there is speculation within philosophy of mind that a person, as a locus of mental processing and as an agent in the world, may not be entirely encompassed within the skin. Extended cognition suggests that what qualifies as mind involves (at different times and in dynamically changing ways) cognitive coupling with external tools or artifacts. These temporary outside-the-skin couplings cause external things to become a real and integral part of the current process of thinking or problem solving, and thus a part of the currently operating mind (Clark 2008).

There is a simple hypothetical example of the extension of cognition that is often used in discussions of this proposal (Clark and Chalmers 1998). In this illustration, Otto's memory is failing significantly due to Alzheimer's disease. So, Otto uses a notebook to write down things he needs to remember—addresses and directions, shopping lists, appointments, jobs around the house, people's names, and so on—and uses this to enhance his significantly weakened memory. It is argued by those who advocate for extended cognition that Otto's notebook comes to operate as a part of his cognitive systems in such a way that its contributions to mental processing cannot be readily distinguished from his brain-based memory. What is more, Otto credits items in the notebook as real records of things

remembered in the same way he credited in the past (before his Alzheimer's disease) things emerging from his brain-based memory systems. Otto's weak memory has been extended by incorporating something outside of his body.

It is not that all aspects of the current environment are included in currently extended mental processes. Rather, at any particular moment, and depending on the current mental problem to be solved, different aspects of the physical or social environment may become enmeshed in ongoing feedback interactions with the brain and body such as to constitute together an extended cognitive processing system. Thus, activity that we would label as "intelligent" and "cognitive" does not occur exclusively in the brain/body of the person in question, but includes also the temporary interactive coupling between the person and aspects of the external world. Thus, there are particular moments of cognitive activity where one cannot readily distinguish between the body and the tools incorporated with respect to the boundaries of the mind at work. The cognitive processes are not solely within the brain and body, but rather "mind" can encompass external tools and artifacts. Such temporary incorporation has been referred to as "soft coupling" or "soft assembly" to indicate the dynamically changeable nature of cognitive extension (Clark 2008).

Philosopher Andy Clark expresses it this way: "human minds and bodies are essentially open to episodes of deep and transformative restructuring in which new equipment (both physical and 'mental') can become quite literally incorporated into the thinking and acting systems that we identify as our minds and bodies" (Clark 2008, ch. 2, 2.1).

Another example, similar to Otto's notebook, is the use we all make of paper and pencil when multiplying numbers with multiple digits or doing long division (at least when our smart phones are not available). Since we do not have the internal mental capacity to hold the results of all the intermediary steps in mind, we extend out mental capacities by using pencil and paper. The solution to the mathematical problem is arrived at by the ongoing interaction with what we put on the paper. Our internal processes are adequate for each step, but the solution to this multiple step problem requires action-feedback loops that include notations on paper. During the time it takes to solve the problem, our mind extends by soft coupling with these external implements and processes.

The domain of tools helps us think about coupling versus mere use—for example, driving nails with a hammer. For a person who seldom uses a hammer, to begin hammering is to manipulate an external, nonincorporated object. There is little, if any, soft assembly of the hammer itself into the motor system of the brain/body. The hammer is part of the external world. However, with frequent use (e.g., a hammer in the hands of a carpenter), the hammer becomes soft-assembled into the body that the carpenter's motor system takes into account—that is, as far as the brain is

concerned, the hammer becomes a functional extension of the body. The brain maps the hammer as if it were an extended part of the hand, and the furthest extent of the body as mapped by the brain is the business end of the hammer (Clark 2008). Even more dramatic is the incorporation of a prosthetic limb into the brain's body-mapping such that, with respect to motor processing, the prosthetic limb is mapped as if it were a part of the physiological body (Clark 2003).

Thus, the theory of extended cognition suggests that the self that I wish to come to know must, at various times and in various ways, include the tools that I use to enhance my capacities—particularly those tools habitually in use such as my smart phone. I am a person who knows how to incorporate aspects of my environment to enhance the intelligence of my mind.

The Socially Extended Self—"I Interact with Others, Therefore I Am"

Cognitive extension can involve inclusion of other persons into a network of cognitive processing. In fact, extension of the mind is even more potent when what is engaged outside the physical body is another person (Clark 2008). For example, during a problem-solving interaction involving two persons, both individuals can become enmeshed in an ongoing reciprocal interaction such that each becomes a cognitive extension of the other. There is then no clear demarcation between the mental processes of the two persons. The mental processes leading to the solution cannot be located entirely within one brain/body. During the interaction, the mind at work is extended beyond either participant into the interpersonal space. It is the ongoing looping of ideas-feedback-amended ideas, and so on, between persons that is the cognitive network finding a path to the solution.

Every week I gather with my graduate students for a lab meeting. Often the agenda involves solving a research-related problem. For example, how can we test this particular hypothesis about the nature of persons with a genesis of the corpus callosum (the brain abnormality that my students and I study)? When a solution is discovered it is often hard in retrospect to attribute the solution to a single person. The idea emerged from the interactivity of the entire group. The mind that was operative during the process was a temporary soft assembly of the cognitive systems of all the participants. Of course, not every student in the group extends into the cognitive network operative at the moment. Often, one or two are merely passive observers and not, at the moment, engaged in the cognitive task.

Some forms of interpersonal extension are deeper and more habitual. Each spouse in a married couple that has been together for a long period of time comes to have the other deeply mapped into their self-understanding—the soft assembly of interactions has become more

habitual and intrinsic in each individual. In different contexts and in different ways, each is an extension of the other. For each person, the cognitive map of themselves as an agent includes the other. Sometimes the cognitive extension served by one member for the other (or for the cognitive entity that is the couple) is rather explicit—as in "my wife remembers all the birthdays" or "she does the finances" . . . much like Otto's notebook. However, most of these habitual forms of cognitive extension are implicit. We are not explicitly aware of our cognitive reliance on the other in coping with the exigencies of life.

Families also serve as dynamically fluctuating cognitive and social extensions for each member, most obviously for children. Young children are particularly dependent on the extension of themselves—their mental processing of situations—into the family for enhancing their capacities of understanding and coping. Teenagers who begin to differentiate themselves from their families sometimes pay the price of diminishment of important aspects of their family-based cognitive and social extension. Solo functioning can lead to risky behaviors, reduced capacities to cope with the complexities of everyday life, and even jeopardy to their capacity to thrive. While the teenager is most often still situationally embedded in the family, he or she may no longer be cognitively engaged such as to benefit from the extended mind available in family relations.

Thus, the self-to-be-known will need to include other persons. Not only are we relationally situated, but our minds can at times include and incorporate what is emergent from our interactions with others. These emergent properties of ours will be different in interactions with different persons in different contexts. Nevertheless, our knowledge of ourselves is incomplete without recognizing the degree to which our selves are socially extended. The self-to-be-known is not encapsulated within the brain or body, but, in different ways and at different time, extends beyond the body.

My Religious Self—"We Sing Therefore We Are"

What I have been saying so far about the nature of the self-to-be-known comes mostly from philosophy of mind and to some degree from human cognitive science and neuroscience. Given this context, what is to be said of the religious self? How is religiousness to be understood in an age of such science, and in the context of modern philosophy of mind? If I, as a person, am embodied, situated, and extended, what does this mean for an understanding of myself as religious?

In pursuing this question I revert to being personal. Thinking about the nature of persons and minds as described in this article has caused a shift in my theological anthropology and a consequent shift in my understanding of my religious self. A description of the changes in my personal understandings is probably the best way to pursue the question of the relevance

of the view of human nature as embodied, situated, and extended for a religious understanding of persons. Some of this my coauthor and I covered in *The Physical Nature of Christian Life* (Brown and Strawn 2012).

For all of my life I have been an evangelical Christian of the Wesleyan Holiness variety. This is the tradition of my family back several generations and I am still deeply involved with such a local congregation (although the stereotype of "evangelical" would not fit well our highly educated, fairly liberal, and diverse congregation). The point of this for the purposes of this discussion is that I grew up with, and held throughout most of my life, a strongly Cartesian understanding of the nature of Christian faith. By this I mean that the critical issue for faith was the state and future of my soul, explicitly understood as an inner nonmaterial self. It is the soul that is saved (or not), and spiritual (or not). I presume that this view is fairly ubiquitous in the Christian world. One place to look to find evidence of this Cartesian understanding of Christian faith is in the text of many Christian hymns.

The consequence of this view of the soul (or self) is that everything that is religiously important about me as a person is private, hidden inside, and thus exclusively individual. Christian faith has been about me and my soul . . . about things private, hidden, secret, and only secondarily related to my behavior. What I did or did not do was primarily about what could contaminate or corrupt my soul, not so much about the impact of my actions on others. Even things like compassion, good works, and the virtues of living were only important insofar as they could affect my inner being. Thus, although there were ostensibly helpful community resources—worship services, liturgy, teaching, congregational prayer—I understood myself to be largely on my own with respect to being Christian or spiritual.

But for me a lot changed in beginning to understand persons (and myself) as embodied, situated, relational, and extended. If I am a body, and not a soul hidden inside of a body, then a life of introspection regarding the spirituality of my soul is no longer on the agenda. Rather, I must understand and know myself as an actor in the world. I need to be mindful of the nature of my actions—what motivates them and what are their effects in the world. And if I am an actor, I must also consider the contexts in which my actions take place—how they are situated. How do I tend to act in certain contexts? What are the effects of my actions on these contexts? How does feedback from these contexts shape me (my embodied self) as an agent?

My colleague Brad Strawn and I have begun to think about how spirituality is not the sort of property that can be readily attributable to an individual, but is something that extends into the community with which I worship and live out a Christian life. Spirit abides in us—the embodied network of persons who worship together. The whole Christian enterprise is no longer inner and individual, but is active, lived, and shared.

The best metaphor I can think of for such a life is congregational singing. We all do it together, and the degree the adjective "spiritual" could be attached to the singing would be due to the nature of what emerges from the shared endeavor. "Spiritual" cannot be attributed solely to me or to anyone else present. These are emergent properties of the connection and extension of each to the other. Words such as "spiritual" would describe *us*, not *me*.

Conclusions

This essay has outlined some aspects of the "self"—who and what "I am"—that are often ignored when thinking about and trying to know ourselves. The dominant Cartesian model reinforces the idea that there is within us a soul, or self, or mind that is our hidden, inner, real self. Thus, the path to self-knowledge is introspection. Alternatively, I have emphasized the bodily, active, contextual, relational, often simulated, and sometimes extended nature of the selves that we are, and that we hope to know. Knowing myself is a matter of mindfulness regarding my actions and interactions, the impact of the contexts in which I exist, and the parts of me that even extend at times beyond my skin.

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An expanded version of parts of this article will soon appear in Brad Strawn and Warren Brown, *Supersizing Christian Life*, from Intervarsity Press.

Note

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