

Mark Johnson

*Mind incarnate:  
from Dewey to Damasio*

To be a human being requires a functioning human brain, in a living human body, interacting with complex physical, social, and cultural environments, in an ongoing flow of experience. What could be more self-evident than the fact that the human mind is intrinsically incarnate?

And yet, most people do not believe this. Traditional Western philosophical and religious traditions routinely assume the transcendence of mind over body. They assume that our inmost essence is mental and spiritual, which they regard as distinct from the bodily. To live in our culture is to unwittingly soak up the metaphysical mind-body dualism that pervades our commonsense views of cognition, knowledge, language, and values.

Until quite recently, only a handful of intellectually courageous philosophers

have outspokenly embraced a nondualistic view of mind and pursued the radical implications of such a view. Baruch Spinoza stands out in this regard, followed much later by Friederich Nietzsche and then the pragmatic naturalists Charles Sanders Peirce, William James, and John Dewey in America, and also the phenomenologist Maurice Merleau-Ponty in France.

Over the past twenty years, the situation in philosophy has begun to change. The terms 'embodied mind' and 'embodied cognition' have become buzzwords in psychology and the other cognitive sciences – and also, increasingly, in philosophy itself. Taking this change seriously is no small matter. If we give up the notion of a transcendent soul and a disembodied mind, then we must give up as well some of our most commonly cherished assumptions about what it means to be human.

Whenever philosophers want to challenge mind-body dualism, they nearly always criticize René Descartes (1596 – 1650) – with good reason. Descartes claimed that reflection on our inner experience demonstrates that bodies are physical substances, extended in space and time, whereas minds are mental substances, having no spatial extension.

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Bodily substance exhibits and supports one set of 'attributes' (e.g., digestion, perception, body movement, locomotion), whereas mental substance supports a quite different set of characteristics (e.g., thinking, willing, reasoning).

The appeal of the idea of disembodied mind – to Descartes and to many people today – appears to be based on three considerations.

First, if the mind exists apart from the body, then life after death would be metaphysically plausible because a 'mind-soul' might be able to survive the death of our fragile human bodies.

Second, mind-body dualism seems to explain how human freedom and moral responsibility might be possible in a physical world governed by cause and effect. If the seat of our moral reasoning and willing lies in nonphysical substance, then, indeed, a part of us (i.e., our moral personality) may not be causally determined and could be the source of free choice and action. This idea underlies the great appeal of Kant's assumption of a transcendent ego – the locus of rational willing that is not subject to the laws of nature governing all phenomenal beings and things. Kant eschewed Cartesian substance dualism, but his notion of the transcendent ego (as a "transcendental unity of apperception") is his substitute for Cartesian mental substance.

Third, our everyday experience appears to confirm the disembodied character of our thinking. We often seem to experience our minds as different from, and even independent of, our bodies. For example, at this very moment, as I write these words, I am going to will myself not to reach over to pick up my cup of tea that calls out to me to take a drink. 'I' must control 'myself,' so it would seem that the 'I' that does the controlling must be different from and independent

of the 'self' that is controlled. Our conceptual system and therefore our language incorporate this ostensible dualism.

Merleau-Ponty attributed this apparent experience of disembodied mind partly to the fact that in perception we are not aware of our bodily organs doing the perceiving: "The moment perception comes my body effaces itself before it and never does the perception grasp the body in the act of perceiving."<sup>1</sup> More recently, the American philosopher Drew Leder, in his intriguing book, *The Absent Body*, has catalogued the many ways in which the very nature of our bodily capacities causes us to experience perception and thinking as disembodied. In a chapter on what he calls the "ecstatic body," for example, Leder shows how the structure of bodily perception hides the activity of the organs and processes of perception, as we attend only to what is being perceived and not to the conditions of that perception.

Scientists on the other hand do attend to the conditions of perception – and the growth of cognitive neuroscience over the past twenty years has provoked a revolution in our thinking about mind. Philosophers who have been following the remarkable recent work in neuroscience find the notion of disembodied thought increasingly implausible. For them as for most cognitive scientists, the new mantra is '*No body, never mind.*'

For a dualist like Descartes, a fundamental problem was how mental substance could hook up or interact with mere bodily substance. Descartes was scientifically sophisticated enough to realize that such a connection would

1 Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. Alphonso Lingus (Evanston, Ill.: Northwestern University Press, 1968), 9.

somehow have to occur somewhere in the brain, and he speculated, quite mistakenly, that the pineal gland was the locus of this mental-physical interaction.

For a nondualist, this very ‘mind-body problem’ is a mistake because it presupposes that there are two distinct entities – body and mind – that must get yoked together. Consequently, the nondualist needs to reframe the problem entirely, asking not how two different metaphysical substances can interact, but rather how characteristics traditionally attributed to mind – the capacity to conceptualize, to understand, to reason, to know, and to will – emerge from physical processes.

The most popular nondualistic approach today is naturalism. To be a naturalist is to explain everything in nature – from the movements and changes of physical objects, to the emergence of living things, to the operations of mind – in terms of natural processes, that is, without reference to anything supernatural that might allegedly enter into and affect nature from beyond nature itself.

I regard American pragmatist philosophy, which came to prominence early in the twentieth century, as the most scientifically and philosophically sophisticated naturalistic, nondualistic approach to mind available to us even today. The pragmatists (especially Peirce, James, and Dewey) appreciated the critical importance of modern evolutionary theory for our understanding of human nature, and they realized that philosophy must grow hand in hand with the best science available. Consequently, the pragmatists gave us a model for how to develop an empirically responsible philosophy of mind.

Pragmatic naturalism starts with the assumption that human beings are nat-

ural organisms in ongoing interaction with their environments.<sup>2</sup> In other words, everything we attribute to ‘mind’ – perceiving, conceptualizing, imagining, reasoning, desiring, willing, dreaming – has emerged (and continues to develop) as part of an ongoing evolutionary process in which organisms seek to survive, grow, and flourish within various environments. As James remarks:

Mental facts cannot be properly studied apart from the physical environment of which they take cognizance. The great fault of the older rational psychology was to set up the soul as an absolute spiritual being with certain faculties of its own by which the several activities of remembering, imagining, reasoning, and willing, etc. were explained, almost without reference to the peculiarities of the world with which these activities deal. But the richer insight of modern days perceives that our inner faculties are adapted in advance to the features of the world in which we dwell, adapted, I mean, so as to secure our safety and prosperity in its midst.<sup>3</sup>

In James’s account, we do not have two entities or substances – body *and* mind – that somehow have to come into relation to each other for a human being to exist. Instead, ‘mind’ is an emergent process, never separate from body. Thus, experience is a series of purposive bodily activities immersed in the ongoing flow of organism-environment interactions.

Another way of expressing this rootedness of thinking in bodily experience is to say that there is no rupture in experi-

2 Part of the account of pragmatic naturalism that follows is taken, with minor changes, from Mark Johnson and Tim Rohrer, “We are Live Creatures,” in *Body, Language, and Mind* (forthcoming).

3 William James, *Psychology (Briefer Course)* (New York: Holt, 1892), 3.

ence between such processes as perceiving, feeling, moving, and thinking. More complex levels of organic functioning are just that – levels – and nothing more, although within each level there arise emergent properties of ‘higher’ levels of functioning. John Dewey names this connectedness of all cognition the *principle of continuity*, a principle that denies any ontological gaps between various levels of functional complexity. According to Dewey:

There is no breach of continuity between operations of inquiry and biological operations and physical operations. “Continuity” ... means that rational operations *grow out of* organic activities, without being identical with that from which they emerge.<sup>4</sup>

The continuity thesis implies that any explanation of the nature and workings of mind, even of abstract conceptualization and reasoning, must have its basis in an organism’s capacities for perception, feeling, object manipulation, and bodily movement. Dewey described at least three primary levels of organization that are relevant to an account of mind. First, there are inanimate material processes (the *physical* level). Second, there are living things that have needs, interests, and satisfactions (the *psycho-physical* level). Third, there are organisms that possess mind (the *mental* level). From this perspective, the problem for the naturalist is to explain how changes in organization and complexity give rise to ever more impressive functional processes, without introducing new ontological entities, structures, or forces. Dewey explains,

4 John Dewey, *John Dewey, The Later Works, 1925 – 1953*, vol. 12, *Logic: The Theory of Inquiry (1938)* (Carbondale: Southern Illinois University Press, 1991), 26.

The distinction between physical, psycho-physical, and mental is thus one of levels of increasing complexity and intimacy of interaction among natural events. The idea that matter, life and mind represent separate kinds of Being is a doctrine that springs, as so many philosophic errors have sprung, from a substantiation of eventual functions.<sup>5</sup>

*Mind incarnate*

In other words, the error of splitting off ‘mind’ from ‘body’ (or the animate from the inanimate, or the mental from the merely living) is a result of treating functional events and processes (Dewey’s “eventual functions”) as if they were different kinds of beings or entities.

For a naturalist like Dewey then, new organization is responsible for the fact that living organisms (the psycho-physical) have properties and can do things that are not possible for inanimate physical entities and structures:

In the compound word [psycho-physical], the prefix “psycho” denotes that physical activity has acquired additional properties, those of ability to procure a peculiar kind of interactive support of needs from surrounding media. Psycho-physical does not denote an abrogation of the physico-chemical; nor a peculiar mixture of something physical with something psychical (as a centaur is half man and half horse); it denotes the possession of certain qualities and efficacies not displayed by the inanimate.<sup>6</sup>

Many people who might accept this continuous development from the inanimate to the animate will resist the idea that a similar continuity applies equally

5 John Dewey, *John Dewey, The Later Works, 1925 – 1953*, vol. 1, *Experience and Nature (1925)* (Carbondale: Southern Illinois University Press, 1981), 200.

6 *Ibid.*, 195 – 196.

to the emergence of mind. However, his principle of continuity demands that we treat mind not as a *thing*, but as another emerging *process* of interactions. Some organisms develop what we call mind when they achieve levels of functional organization that make communication and shared meaning possible for them, thereby opening up a host of unprecedented possibilities for dealing with the life problems they encounter.

As life is a character of events in a peculiar condition of organization, and “feeling” is a quality of life-forms marked by complexly mobile and discriminating responses, so “mind” is an added property assumed by a feeling creature, when it reaches that organized interaction with other living creatures which is language, communication.<sup>7</sup>

To say that I have a ‘mind’ is to say that I am an organism whose potential for very complex interactions has risen to the level where I can share meanings, engage in various modes of inquiry and reasoning, and coordinate activities with other creatures who have minds, using symbols that have meaning for us.

Once we understand that mind is a functional achievement, it ceases to be surprising that mind is always continuous with body and could not exist without body. That is why Dewey always speaks of the “body-mind,” and not of body *and* mind. Other philosophers have famously offered their own non-dualistic accounts of the interfusion of mind and body. Spinoza avoided Cartesian mind-body substance dualism by arguing that there was but one substance, which he called Nature or God, and that ‘body’ and ‘mind’ are simply ‘attributes’ of that substance. Antonio

7 Ibid., 198.

Damasio’s fondness for Spinoza’s non-dualistic metaphysics stems especially from Spinoza’s view of mind as the idea of the human body (“The object of the idea constituting the human Mind is the Body,” *Ethics* II, Prop. 13). Damasio shows how this conception of mind is compatible with recent empirical research in the neuroscience of emotions, consciousness, and thought.<sup>8</sup>

I began this essay by boldly proclaiming that acknowledging the embodiment of mind requires us to rethink some of our most cherished assumptions about human nature. Let us consider briefly some of the most significant implications that follow from the conception of the ‘body-mind’ that I have sketched above.

*No mind without a body*: Nobody can *prove* indisputably that a disembodied mind or soul cannot exist. However, cognitive neuroscience teaches us that, without certain bodily conditions, functions such as breathing, moving, perceiving, reasoning, feeling, and talking are not possible. So, if there is a ‘bodyless’ soul that survives after death, we can make no sense of how it could feel, experience, think, or value like we humans do. If you had a disembodied soul, that soul would not be *you*, for it would lack your body, and thus your thoughts, your memories, your feelings, and your emotions. Consequently, the doctrine of embodied cognition has very much a ‘this-worldly’ orientation – a philosophical perspective grounded in the experiences, thoughts, values, and actions of an intrinsically embodied consciousness that appears to be a tiny part of a sweeping and continual (if somewhat slow) evolutionary process.

8 Antonio Damasio, *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain* (New York: Harcourt, Inc., 2003).

*Mind is not a thing:* Although we are born with many cognitive capacities necessary for human experiencing and thinking, it is a bit misleading to say that we are born ‘with a mind,’ as though that were some entity or given structure. To ‘have a mind’ is to rise to the level of being able to sustain a complex ensemble of functions that characteristically involve thinking, deciding, feeling, and communicating with others. When a person ceases to be able to execute these functions, it is fair to say that he has ‘lost his mind,’ which is not the loss of a *thing*, but rather a failure to sustain a certain dynamic process of higher-level functioning. (This is precisely what happens in cases of dementia.)

Neither is consciousness a fixed thing or a simple property. According to cognitive neuroscientists Gerald Edelman and Giulio Tononi, consciousness is an emergent dynamic unity that results from “a special kind of morphology – the reentrant meshwork of the thalamo-cortical system – as it interacts with the environment.”<sup>9</sup> Consciousness is the temporary achievement of a “dynamic core,” in which emerges an integration, within a certain narrow window of time, of various functional neuronal clusters that are highly differentiated functionally.

*Body in mind/mind in body:* The body is not just the seat of the mind, a mere resting place for a disembodied mind. ‘Body’ and ‘mind’ are just different aspects of an ongoing interactional process of experience. Thus, the nature of our human bodies determines both *what* we can experience and think and also *how* we think, that is, how we conceptualize and reason. The body is *in* (that is, working

*in*) the mind, just as much as the mind is *in* the body. Damasio states this grounding hypothesis as follows:

...the body, as represented in the brain, may constitute the indispensable form of reference for the neural processes that we experience as the mind.<sup>10</sup>

[T]he apparatus of rationality, traditionally presumed to be *neocortical*, does not seem to work without that of biological regulation, traditionally presumed to be *subcortical*. Nature appears to have built the apparatus of rationality not just on top of the apparatus of biological regulation, but also *from* it and *with* it.<sup>11</sup>

The lower levels in the neural edifice or reason are the same ones that regulate the processing of emotions and feelings, along with the body functions necessary for an organism’s survival. In turn, these lower levels maintain direct and mutual relationships with virtually every bodily organ, thus placing the body directly within the chain of operations that generate the highest reaches of reasoning, decision making, and, by extension, social behavior and creativity.<sup>12</sup>

The recruitment of sensory-motor capacities to perform concrete and abstract conceptualizing and reasoning, and the crucial role of emotion in reasoning are foundational hypotheses of many contemporary naturalistic theories of mind, thought, and language. The challenge for ‘embodied cognition’ theories is thus to explain how all of our most marvelous acts of language, communication, abstract conceptualization and reasoning,

10 Antonio Damasio, *Descartes’ Error: Emotion, Reason, and the Human Brain* (New York: G. P. Putnam’s Sons, 1994), xvi.

11 *Ibid.*, 128.

12 *Ibid.*, xiii.

9 Gerald Edelman and Giulio Tononi, *A Universe of Consciousness: How Matter Becomes Imagination* (New York: Basic Books, 2000), 216.

and creativity involve the recruiting of sensory-motor functions for ‘higher’ cognitive functions.

*Logic is a matter of body:* In common-sense models and in philosophical and mathematical theories alike, logic has virtually always been thought of as the essence of rational thought, thus transcending the body. Like mathematics, it is supposed to be pure (disembodied), universal, and absolute. But if the ways of the body are actually constitutive of what and how we think, then logics (plural) have only as much validity as the shared patterns of bodily experience upon which they rest. Logic doesn’t drop down from the heavens of pure reason; rather, it rises up from recurring patterns of embodied inquiry. Already in 1890, James in his *Principles of Psychology* argued that logic is tied to felt relations within bodily experience:

If there be such things as feelings at all, then so surely as relations between objects exist in *rerum natura*, so surely, and more surely, do feelings exist to which these relations are known . . . . We ought to say a feeling of *and*, a feeling of *if*, a feeling of *but*, and a feeling of *by* quite as readily as we say a feeling of *blue* or a feeling of *cold*.<sup>13</sup>

A hundred years later, Damasio marshalled clinical and experimental neuroscientific evidence to argue for the role of emotion in certain types of reasoning.<sup>14</sup> Damasio’s work has opened the door to a serious reconsideration of James’s then seemingly preposterous claim that what we call logic requires an intact and functioning emotional system, and that our bodies play a crucial

role in what makes sense to us and how we reason about it.

*Language and symbolic interactions are also matters of body:* What has come to be known as cognitive linguistics seeks to explain language as a result of many general cognitive capacities acting in consort, rather than as the result of ‘autonomous’ language modules. Furthermore, embodied approaches to cognitive linguistics present empirical evidence that patterns and processes of sensory-motor experience underlie linguistic meaning and other forms of symbolic interaction. Such evidence includes detailed analyses of how the words we use to talk about mind, and the mental activities of feeling, perceiving, thinking, deciding, and willing, are defined relative to cognitive models that are based either directly on structures of sensory-motor experience or else on systematic conceptual metaphors that are themselves indirectly based on aspects of sensory-motor experience. Within this embodied-meaning framework, George Lakoff and I have presented empirical research from psychology, linguistics, and other cognitive sciences, showing how patterns of sensory-motor experience (e.g., containment, balance, forced motion, iteration, motion along a path, increase/decrease in intensity, and verticality) structure both our concrete and abstract concepts.<sup>15</sup> These image-like patterns of body-based meaning (called *image schemas*) are then metaphorically elaborated to define abstract concepts.

Take, for example, the conventional metaphor, ‘understanding is seeing.’ Here, we conceptualize the abstract notion of understanding or knowing in

13 William James, *Principles of Psychology*, vol. I (New York: Dover Publications, 1950), 245–246.

14 Damasio, *Descartes’ Error*.

15 George Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and Its Challenge to Western Thought* (New York: Basic Books, 1999).

terms of our sensory-motor conception of seeing. This metaphorical concept, operating mostly beneath the level of conscious awareness, gives rise to expressions such as ‘I see what you mean,’ ‘What you said was quite *illuminating*,’ ‘She’s *blind* to everything I say,’ and ‘From which *point of view* are you speaking?’ In this way, most cognitive linguists seek to explain how patterns of organism-environment coupling and interaction – including perception, manipulation of objects, emotional responses, and body movements – can be the basis for patterns of abstract thought and language.

George Lakoff and Jerome Feldman’s Neural Theory of Language (NTL) project carries this embodiment explanation further by trying to construct realistic models of the neural processes that make thought and language possible. They are developing “constrained” or “structured” connectionist neurocomputational models – models that utilize known neural architectures – of the workings of various body-based schemas, images, and concepts.<sup>16</sup> Both cognitive linguistics and the NTL paradigm typically argue that abstract conceptualization is based on metaphorical extensions of body-based concrete concepts and sensory-motor capacities. All of this work on the bodily basis of meaning, imagination, and reasoning is admittedly speculative at the neural level, but the neural models show how it is at least plausible that the mind could work in such a bodily fashion.

*The body is more than flesh*: In all of these developing accounts, it should be clear that ‘the mind’ cannot be reduced to ‘the brain.’ Likewise, ‘the body’ is

16 Terry Regier, *The Human Semantic Potential: Spatial Language and Constrained Connectionism* (Cambridge, Mass.: MIT Press, 1996).

never merely a material lump of skin and bones. The *bodily* aspect of ‘body-mind’ shows itself in many ways. First, there is the body as a physiological organism made of flesh, bones, blood, muscles, nerves, and the many organs of perception and life-maintenance, all organized into complex interactive functional systems. Second, there is the body that the brain and central nervous system permit us to experience – and to monitor and modify as we interact with our environment. Third, and quite importantly, there is ‘the body’ that does not terminate merely with the fleshy boundary of our skin but rather extends out into its environment, such that organism and environment are not independent, but rather *interdependent* aspects of the basic flow of (bodily) experience. That is why no account of the body can exclude an explanation of the recurring affordances of the environment – the physical settings, cultural artifacts, institutions, rituals, and shared practices – that give the body its medium for action and determine its meaning for members of that culture. Consequently, scientific and philosophical notions of the body must encompass all of these aspects of embodiment; they cannot limit themselves to our narrow commonsense idea of the body as merely a *thing* consisting of flesh, blood, and bones.

*Embodied values*: One of the most underdeveloped areas within the embodied-cognition paradigm is the origin and nature of values. In his latest book, *Looking for Spinoza*, Damasio has speculated on where embodied creatures like us get our values. Naturalistic views of mind typically see values as emerging from the needs of organisms to survive, grow, flourish, and, for humans, find meaning within the types of environments they inhabit. Those human environments are at once physical, social, cultural, moral,

*Mind  
incarnate*



economic, political, gendered, racialized, and spiritual. So, while many of our values are a fairly direct result of our bodies' instincts for survival and growth – we need air, water, food, shelter, warmth, and a host of biological conditions – other values will form as a consequence of our nature as social and political creatures, as gendered animals, and as purpose-seeking beings. It has become evident to those who look carefully at the range and variety of values found throughout cultures and across history that no one set of values can be certified as absolute, universal, and eternal. Although cultures will share many values because of the commonalities of our bodies and the recurring features of the environments we inhabit, *value pluralism* is an inescapable fact of the human condition.

The multidimensionality of the body-mind also explains why no single method or approach could ever capture the workings of mind. We need what Patricia Churchland has called the “co-evolution of theories”<sup>17</sup> – the dialectical collaboration of multiple strategies and methods from many disciplines. We need cognitive neuroscience to study the neurochemical bases of experience, thought, feeling, consciousness, and valuation. We need physiology to explore the whole-body perceptual and motor processes that underlie thought. We need phenomenology to describe the structures and qualities of experience. We need cognitive linguistics, psychology, and anthropology to investigate the bodily schemas and sensory-motor operations that underlie all aspects of cognition and symbolic interaction. We

need developmental psychology to provide an account of the emergence of the self, of thought, and of language. We need all the humanistic disciplines to study the meaning humans make through literature, music, dance, and the plastic arts. And we even need philosophers of embodied cognition who try to see how all of these various accounts of embodied mind hang together – and what they tell us about who we are and how we should live.

17 Patricia Churchland, *Neurophilosophy: Toward a Unified Science of the Mind/Brain* (Cambridge, Mass.: MIT Press, 1986).