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Peirce, Immediate Perception,  
and the “New” Unconscious:  
Neuroscience and Empirical Psychology  
in Support of a “Well-Known Doctrine”

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**ABSTRACT:** This article defends Charles Peirce’s “doctrine of immediate perception.” This realistic view holds that conscious agents, due to the work of unconscious mind, directly perceive the world and often know objects, events, and persons as they truly are, independently of how we might prefer to think of them (what is known as our realist intuition). The doctrine provides a promising alternative to more recent views insisting that all experience of the world and other persons is ineluctably mediated by language, along with the categories and biases language inevitably imposes. Peirce’s view is further explicated in terms of what neuroscientists now call the “new” unconscious (but to which Peirce contributed to earlier) and supported by recent work in both neuroscience and empirical psychology, especially experiments involving infants. The article supports the conclusion that, while much experience is mediated by language (often helpfully so), direct (and desirable) access to a world that informs and often surprises us persists throughout conscious experience.

**KEYWORDS:** Peirce, immediate perception, “new” unconscious, evolution, language

On July 23, 1905, Charles Peirce wrote William James, thanking him for papers James had sent and emphasizing his agreement with James's recent publication, "La Notion de Conscience"—but "with one exception."<sup>1</sup> The exception had to do not with the content but, rather, its novelty. Peirce points out that William Hamilton, Thomas Reid, Kant (at least in his refutation of Berkeley), and the scholastics (insofar as they followed Aristotle, not Augustine) all held the same view, namely, "the well-known doctrine of immediate perception" (8.261 [1905]). Peirce further writes that "I myself preached immediate perception as you know;—and you can't find a place where I distinguish the objective and subjective side of things" (8.261 [1905]). As Peirce had written previously in 1901 (and now quotes himself in his letter to James), "When we first wake up to the fact that we are thinking beings . . . we have to set out upon our intellectual travels from the home where we already find ourselves. . . . Now this home is the parish of Percepts. It is not inside our skulls but out in the open. It is the external world that we directly perceive" (8.261 [1905]).<sup>2</sup>

That doctrine, common to Peirce and James, is now out of favor due to linguistic considerations, both among contemporary pragmatists and more broadly in philosophy and the social sciences. Consider, as a recent example, Jürgen Habermas, who in *Truth and Justification* asks, "How can we reconcile the assumption that there is a world existing independently of our descriptions of it and that is the same for all observers with the linguistic insight that we have no direct, linguistically unmediated access to 'brute' reality?"<sup>3</sup> This "linguistic insight," Habermas explains, entails that "the reality facing our propositions is not 'naked,' but is itself already permeated by language. The experience against which we check our assumptions is linguistically structured and embedded in contexts of action."<sup>4</sup> Habermas sees his own Kantian Pragmatism as a direct response to this dilemma,<sup>5</sup> but there are other possibilities. Richard Rorty, for example, notoriously took a more radical approach: rather than reconciliation, he dropped entirely what he called our realist intuition, since there is no comparing descriptions with reality, instead encouraging us to play different descriptions off one another in light of various purposes.<sup>6</sup> Richard Bernstein, critical of both Rorty and Habermas, similarly forfeits Peirce's doctrine of immediate perception; he claims that pragmatism is capable of offering only a "soft" form of objectivity, a perspectival one that includes robust understanding of justification, truth, and objectivity only in relation to intersubjectivity (which is linguistic)—a view that will surely not satisfy the realist intuition.<sup>7</sup>

Habermas associates the assumption that "experience is linguistically saturated" with the linguistic turn,<sup>8</sup> and those referred to above are all associated with philosophical pragmatism; but as the psychologist Steven Pinker observes, something like this assumption is now broadly shared in the humanities and social sciences. As evidence he cites a wide range of authors: Roland Barthes ("Man does not exist prior to language, either as a species or as an individual"), Jacques Derrida ("No escape from language is possible"), J. Hillis Miller ("Language is not an instrument or tool in man's hands, a submissive means of thinking. Language rather thinks man and his 'world' . . . if he will allow it to do so"), Nietzsche ("We have to cease to think if we refuse to do it in the prisonhouse of language"), and Wittgenstein ("The limits of my language mean the limits of my world").<sup>9</sup> And Benjamin Whorf, enormously influential in the social sciences, notably on Kuhn (and thus indirectly Rorty), popularized a strong form of linguistic relativism that borders on linguistic determinism: "We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way—an agreement that holds throughout our speech community and is codified in the patterns of our language. The agreement is, of course, an implicit and unstated one, *but its terms are absolutely obligatory*; we cannot talk at all except by subscribing to the organization and classification of data which the agreement decrees."<sup>10</sup> In this view, presumed in one permutation or another across disciplines, the obligatory terms imposed by language so saturate experience that access to reality, apart from its categories, appears foreclosed. Constraint becomes confinement, a "prisonhouse," and experience is rent from reality. More troubling still, many argue that the categories imposed by speech communities harbor social bias and arbitrary effects of power, such that descriptions of the world both reflect and reinscribe these damaging relations. Language is, then, not just an invisible medium but an infected one that serves the interests of some over others, making unwitting dupes of even well-intentioned members of their respective speech communities.<sup>11</sup>

Lost, of course, from this view is Peirce's doctrine of immediate perception, in which "it is the external world that we directly observe" (EP2, 62). This is a world forced upon us in perception, revealing its characteristics and confirming them, "regardless of what you, or I, or any man, or generation of men, may think that they are" (EP2, 62). This is Peirce's expression of the realist intuition, and in this essay I argue, with Peirce, that the purported insight common to Habermas and others is

overstated. Unmediated access to reality is not possible—the mind is not a mirror—but not all experience is mediated by *language*, nor is all experience mediated by the specific categories a given language imports when learned and habitually embedded in cultural practices. This means that there is no need to jettison the realist intuition; what is more, we discard it at our peril, for, as Peirce famously wrote, “experience is our only teacher,” one that “invariably teaches by means of *surprises*” (EP2, 153, 194), and the possibility of genuine surprise is precisely what the realist intuition preserves. To explain and defend Peirce’s doctrine of immediate perception I turn primarily to Peirce’s work in psychology. More specifically, I draw on Peirce’s theory of unconscious mind to show that much of what the mind accomplishes occurs rapidly and automatically, outside of conscious control, and below the level of explicit consciousness. At least some of this work, and the conscious experience to which it sometimes gives rise, is not mediated by language (or its categories). The implication is that, although much of our experience of the world is mediated by language, experience is broader still, providing genuine access to the world; or as Peirce would have it, we experience real things, persons, and events as they are, independently of how we (or language) would prefer to think of them.

Moreover, Peirce’s view provides more than just an attractive philosophical alternative to prevailing linguistic assumptions regarding access to the world: it enjoys substantial support from recent neuroscience and empirical psychology. Peirce the practicing scientist drew on his own laboratory experiments to develop a new theory of unconscious mind, the implications of which are only now being explored (as the “new” unconscious in neuroscience); Peirce the philosopher drew on that theory of mind to develop a compelling account of access to the real world, which he terms the doctrine of immediate perception. This essay focuses on Peirce’s account of this doctrine and contemporary empirical evidence supporting the theory on which it rests.

## 1. Peirce and the “New” Unconscious

In 1903 Peirce wrote that “our logically controlled thoughts compose a small part of the mind, the mere blossom of a vast complexus which we may call the instinctive mind in which this man will not say that he has *faith* because that implies the conceivability of distrust, but upon which

he builds as the very fact to which it is the whole business of his logic to be true" (EP2, 241). "Instinctive mind," Peirce claims, is largely out of our control ("Some elements we can control in some limited measure" [EP2, 240]), and "concerning that quite uncontrolled part of the mind, logical maxims have as little to do as with the growth of hair and nails" (EP2, 240–41). The uncontrolled part consists of unconscious processes that, while fallible, intelligently serve the interests of the organism. As Leonard Mlodinow observes, nearly twenty years earlier Peirce (with his student Joseph Jastrow) had performed "the first scientific demonstration that the unconscious mind possesses knowledge that escapes the conscious mind."<sup>12</sup>

Peirce believed the unconscious intelligent due to Darwinian selection: "The mind of man is strongly adapted to the comprehension of the world. . . . [C]ertain conceptions, highly important for such a comprehension, naturally arise in his mind. . . . [W]ithout such a tendency, the mind could never have had any development at all" (W3, 318). These conceptions provide "inward light . . . without which the human race would long ago have been extirpated for its utter incapacity in the struggles for existence."<sup>13</sup> According to Peirce, "The great utility and indispensableness of the conceptions of time, space, and force, even to the lowest intelligence, are such as to suggest that they are the results of natural selection" (W3, 318). Peirce elsewhere writes that *all animals* have "some virtual knowledge of space and of force" and that all animals *like us* have "some virtual comprehension of the minds of other animals of their kind," making them both applied physicists and applied psychists (EP2, 51; cf. 5.592, 5.603 [1903]).<sup>14</sup> What is more, Peirce strikingly concludes (again on evolutionary grounds) that unconscious conceptions are not merely effective or coincidentally useful but almost surely *correct*: "He [an animal] might, it is true, be provided with an instinct which would generally have the same effect; that is to say, he might have conceptions different from those of time, space, and force, but which coincided with them in regard to the ordinary cases of the animal's experience. But, as that animal would have an immense advantage in the struggle for life whose mechanical conceptions did not break down in a novel situation (such as development must bring about), there would be a constant selection in favor of more and more correct ideas of these matters" (W3, 318). Unconscious mind, in short, is an evolutionary survival mechanism that, although largely out of our control, helps human beings cope intelligently with a demanding, changing environment. This view is consistent

with—it thoroughly anticipates and to some degree inaugurated—what is now called the “new” unconscious to distinguish it from ideas popularized by Freud.<sup>15</sup>

Peirce’s view is that consciousness does not, and cannot, control what it is unaware of. Conscious perception (when it arises at all) is the *result* of an already executed unconscious process that, being already in the immediate past, is not subject to deliberate modification. This unconscious process, which gives rise to a conscious current, takes the various fragmented inputs of the senses and constructs, or, rather, *reconstructs*, the environment causing the sensations (using instinctive knowledge or rules, “mechanical conceptions” fashioned by evolution). Conscious mind is therefore not directly aware of its fragmentary sensations but, rather, the coherent “representation,” “model,” or “map” generated by unconscious mind. As Antonio Damasio more recently explains, “Perception, in whatever sensory modality, is the result of the brain’s cartographic skill.”<sup>16</sup> “The images in our minds,” according to Damasio, “are the brain’s momentary maps of everything and anything, inside our body and around it, concrete as well as abstract, actual or previously recorded in memory.”<sup>17</sup> These maps pick out salient patterns of objects and the world and “can be rapidly drawn, redrawn, and overdrawn, at the speed of lightning.”<sup>18</sup> As Mlodinow writes, “Modern neuroscience teaches us that, in a way, all our perceptions must be considered illusions. That’s because we perceive the world only indirectly, by processing and interpreting the raw data of our senses.”<sup>19</sup>

We might think that this vindicates Kant and encourages a recrudescence of a two-world ontology and epistemological dualism, but the lesson, in light of Darwin (and Peirce), is quite different. As the neuropsychologist Chris Frith writes, “Our brains build models of the world and continuously modify these models on the basis of the signals that reach our senses. So, what we actually perceive are our brain’s models of the world. They are not the world itself, but, for us, they are as good as. You could say that our perceptions are fantasies that coincide with reality.”<sup>20</sup> “Fantasy” coincides with reality because unconscious mind is *itself* in direct contact with the world and proceeds on a self-correcting loop. When perceiving an object, unconscious mind uses prior beliefs (many of which we cannot consciously access), which constitute its accumulated models of the world, to predict other signals it should be receiving.<sup>21</sup> This involves a sense of *anticipation*, and if these signals are received, the model is confirmed; if not, if contradictory signals arrive, then unconscious mind rapidly

updates/revises its model based on these new signals, generates further predictions, and repeats the loop until errors indicating deviation from our current model are reduced to insignificance. Amazingly, this usually takes only a few cycles, or about one hundred *milliseconds*, to complete.<sup>22</sup> That our models are correct, and not merely useful, is strongly suggested by the evolutionary reasoning Peirce sets out above: animals capable of accurate (and very, very fast) representation in a changing, developing environment would hold a decided advantage over those that were not.

It is important to note that the modeling process described by Frith, which depends on the continuous experience of error to construct an accurate model of reality, is also thoroughly anticipated by Peirce in his conception of the independently real: "The experience of ignorance, or of error, which we have, and which we gain by means of correcting our errors, or enlarging our knowledge, does enable us to experience and conceive something which is independent of our own limited views" (W3, 32). Accurate depiction of a reality independent of mind is possible through progressive detection of error (i.e., the shock of "experience," our only teacher), even though the depiction itself depends on mind. Peirce simultaneously recognizes that "everything which is present to us is a phenomenal manifestation of ourselves" *and* that the presentation may be of a "phenomenon of something without us" (W2, 223)—or as Peirce observed in 1901, "The inkstand is a *real* thing. Of course, in being real and external, it does not in the least cease to be a purely psychical product, a generalized percept" (EP2, 62).

The result of this understanding of unconscious mind, and its intermediary relationship between consciousness and the world, is a distinct form of realism. On one hand, Peirce discards Kantian distinctions between phenomena and noumena because models or representations of the world do not swing free of the world represented. Model and world are causally connected, and models genuinely represent portions of the world because they are continuously informed by the world represented through prediction and correction. On the other hand, representations do not simply "mirror" input. For example, as Frith and Mlodinow explain (and Peirce observed), ocular perception includes a blind spot in each eye, leaving a hole in each eye's field of vision. Unconscious mind compensates by filling up the empty space based on information derived from inputs surrounding each lacuna.<sup>23</sup> Moreover, the human eye performs not only saccades (eyes bouncing around a scene to get a full "picture" of a large



canvas) but microsaccades—essentially a jiggling movement around the focus of attention. This is the fastest movement the body performs, and we are consciously unaware of both forms because the brain constantly edits out the transitional movement and fills in perception in a way that makes it look steady and smooth.<sup>24</sup> The experience may be of a current or stream, but that is an effect, an extraordinary product of enormous (unconscious) work using rules not learned through language. More important, the unconscious mind does not just produce a reflection or copy image of what it sees; it takes limited, disparate, erratic, and poor-quality sensory impressions and enhances them according to its own rules—rules that allow the mind to get an accurate representation of the world despite such poor inputs.<sup>25</sup>

## 2. Evidence from Neuroscience

Significant support for nonlinguistic, unconscious perception and reasoning comes from two distinct sources. One is findings in neuroscience that support the “new” unconscious and that at least some of its workings is not mediated by language or linguistic categories. The first is the phenomenon known as “blindsight.” As Robert Kurzban points out, this phenomenon—which includes patients who are completely blind being able to identify statistically above chance whether a picture is an X or an O and a blind patient successfully navigating a hallway strewn with obstacles—suggests that one part of the brain (which is clearly unconscious) is receiving, recording, processing, and under some instances passing on information not available to consciousness.<sup>26</sup> This also suggests that there are in fact multiple, parallel pathways along which vision is processed unconsciously.<sup>27</sup> One of these, known as the “Old Pathway,” proceeds through an ancient midbrain structure and is concerned with “where”: it identifies object location, orients the observer, and allows him or her to track it. The other is the “New Pathway,” which runs to a section of the brain containing cortical maps and then splits into two paths again. The first, which neuroscientist V. S. Ramachandran calls Pathway I, is concerned with the “how” of objects, that is, the relationships among objects in space. This pathway is linked closely to motor systems and acts very fast: “When you dodge an object hurled at you, when you navigate around a room avoiding bumping into things, when you step gingerly over a tree branch or a pit, or when you reach out to grab an object or fend off a blow, you are relying on the ‘how’ stream.”<sup>28</sup>

Pathway 2 focuses on the “what” of things. It runs first through a region of the brain that mainly forms classifications of things (distinctions between kinds of objects or persons) but does not initially attach significance; further on (later in the process) memories and associated facts are recruited to develop more expansive meanings, and messages are relayed to other parts of the brain to evoke feelings about what is seen.<sup>29</sup> Both pathways perform equally complex computations, Ramachandran suggests, but when Pathway 2 is damaged (as in cases of blindsight) “visual awareness winks out,” even though Pathway 1 continues to operate. That the brain is aware of spatial forms and relations but does not convey this information to consciousness (apparently giving rise to a sort of “feeling” or hunch as described above) explains how certain blind patients can still “see” even though not directly aware of anything in their perceptual range.

Ramachandran believes that there is yet a third unconscious pathway, one he calls the “so what” stream. Biologically important stimuli (such as eyes, facial expressions, animate movement) bypass Pathway 2, along with its associations of significance, fact, and memory, and head directly to the emotional core of the brain, a shortcut enabling quick reactions/responses in high-value situations.<sup>30</sup> These again give rise to important feelings and reactions not mediated by classification and memory. The philosophical significance of tracking these psychological processes is thus twofold: on one hand, it supports our commonsense intuition that some, perhaps much, of our experience of the world is veridical. Even if we do not have direct access to the world, the model we perceive is often accurate—that is, as Peirce insists, we experience aspects of the world as it is, independently of how we may prefer to think of it. On the other hand, these processes indicate that some, perhaps much, of our experience is *not* mediated by language or the categories it imports, though it may later come to be so (without necessarily losing what came before it).

Moreover, assuming that something like Ramachandran’s description is correct, the identification of multiple perceptual pathways casts new light on (and I suggest further supports something approximating) Peirce’s own distinctions among percepts, perceptual judgment, and the *percipuum* (Peirce’s term for experience that includes both percept and perceptual judgment). The issues are complex, in part because Peirce scholars disagree regarding the precise meaning of Peirce’s terms and in part because the domains of different neural pathways are still uncertain.<sup>31</sup> Nevertheless, Peirce’s distinctions, which are rooted in meticulous observation of

everyday experience, appear to reflect (if imperfectly) phenomenal differences made manifest by differences in perceptual pathways recently identified in neuroscientific research. According to Peirce, “Every percept is the product of mental processes, or at all events of processes for all intents and purposes mental, except that we are not directly aware of them; and these are processes of no little complexity” (7.624 [1903]). Percepts are composed of positive qualities, such as color and shape, and connections among them, and these are directly perceived in a single, undivided whole (7.625 [1903]). This would seem to reflect something like the experience of perception identified by Ramachandran as the Old Pathway, Pathway 1, and Pathway 3.

Perceptual judgment, however, goes beyond percepts and is entirely unlike a percept, according to Peirce: “Given a percept, this percept does not describe itself; for description involves analysis, while the percept is whole and undivided. But once having a percept, I may contemplate it, and say to myself, ‘That appears to be a yellow chair’; and our usual language is that we ‘perceive’ it to be a yellow chair, although this is not a percept, but a judgment about a present percept” (7.626 [1903]). Like percepts, perceptual judgments force themselves on us. We can no more willfully decide that what appears yellow is not than we can willfully decide that what looks like a chair does not: “If one *sees*, one cannot avoid the percept; and if one *looks*, one cannot avoid the perceptual judgment” (7.627 [1903]). The “great overshadowing difference” between the two is that perceptual judgments profess to *represent* something: “In a perceptual judgment the mind professes to tell the mind’s future self what the character of the present percept is” (7.630 [1903]). Perceptual judgments generalize, classify, and identify *what* kind of thing a percept is. If Ramachandran is correct, then the phenomenal experience of perceptual judgment identified by Peirce would seem to reflect activity that occurs predominantly along Pathway 2.

Peirce defines the percipuum as “the percept as it is immediately interpreted in the perceptual judgment” (7.643 [1903]). Regarding the percept alone, we know nothing about it except “that we feel the blow of it, the reaction of it against us, and we see the contents of it arranged into an object, in its totality. . . . But the moment we fix our minds upon it and *think* the least thing about the percept, it is the perceptual judgment that tells us what we so ‘perceive’” (7.643 [1903]). Together these form the

percipuum: it "is what forces itself upon your acknowledgement, without any why or wherefore, so that if anybody asks you why you should regard it as appearing so and so, all you can say is, 'I can't help it. That is how I see it'" (7.643 [1903]). The percipuum is what we perceive, the percept as interpreted, and it appears that both percept and perceptual judgment are constituent of the percipuum.

Peirce's description of the percipuum—or something approximating it, though Peirce's concept may require further consideration in light of recent (and future) developments—is what we should expect in terms of perceptual experience when perception not only is processed along different pathways (Old Pathway, New Pathways 1, 2, 3) but is *simultaneously* processed differently, with the results of each entering conscious experience. Because unconscious mind performs multiple tasks at once, we are able to experience both percept *and* perceptual judgment. Or perhaps more accurately, we are able to shift back and forth, more or less across a spectrum between extremes: we can predominantly see a white, hard object with red laces; then see it distinctly as a baseball; then contemplate it as significant of poignant childhood memories; and then revert endlessly through any of the other forms of perception, perhaps vaguely experiencing multiple forms simultaneously in transition.

The essential point is not that *all* perceptual experience must be either linguistically mediated or determined by innate categories (a strict and overly simple dichotomy) but that perceptual experience of even a seemingly simple object (a baseball) may seamlessly range across a continuum that draws on different sorts of categories, in different degrees. At one extreme lie categories deeply embedded by Darwinian evolution that accurately capture certain critical features of the world—such as spatial relations, movement, loud noises, and facial expression; at the other lie highly mediated categories borne by linguistic habits and practices (such as the game of baseball). Other categories, ones that involve native predisposition but are subject to cultural elaboration or refinement (influenced by language or otherwise), lie in between the two.<sup>32</sup> The pressing question is not *whether* experience is mediated but *how*, by what sorts of categories (linguistic or otherwise), to what extent, and to what effect—without jettisoning our realist intuition that we can and often do know features of the world, as it is, "regardless of what you, or I, or any man, or generation of men, may think that they are" (EP2, 62).

### 3. Evidence from Empirical Psychology

The second source of evidence supporting nonlinguistic, real access to the world comes from recent studies of infants, of those literally not yet capable of speech and (presumably) not yet having absorbed the categories embedded therein. The fact that what we once considered adult or at least developed behavior already appears prior to language, besides overturning much of what was previously thought about infants, further supports the view that not all experience is mediated or “saturated” by linguistic categories.

Babies are notoriously difficult to study—far more than pigeons or rats—but scientists have developed new methods. Babies cannot talk, but one behavior is telling and can be influenced by researchers: eye movement. Simply how long a baby looks at something conveys information about his or her understanding. As Paul Bloom explains, “One specific looking-time method is *habituation*. Like adults, if babies see the same thing over and over again, they’ll get bored and look away. Boredom—or ‘habituation’—is a response to sameness, so this method reveals what babies see as similar and as different.”<sup>33</sup> Looking-time studies can also be used to study babies’ expectations: when events occur as expected, babies are bored and look for something else, but if expectations are not met, babies express surprise by looking carefully at the objects in the scene. Researchers have used the method to demonstrate that babies have a basic understanding of physics, and Bloom concludes that “a vast body of research now suggests that—contrary to what legions of psychology undergraduates were taught for decades—babies think of objects largely as adults do, as connected masses that move as units, that are solid and subject to gravity, and that move in continuous paths through space and time.”<sup>34</sup> Just as Peirce suggested, we are by nature virtual physicists. It also appears that babies do not just observe; they actively experiment. According to Alison Gopnik, three-month-olds prefer objects they can influence and react more strongly to them: “Babies prefer to look at the mobile that they can influence themselves, and they smile and coo at it more. This suggests that it isn’t just that they like the effect—they really are trying to make the effect happen and to see the consequences. They are happy because the experiment succeeds.”<sup>35</sup> Babies do not just have a basic understanding of physics but actively engage the world and learn from their efforts—by surprise, of course—long before they begin to speak or use the categories of language.

Studies also show that babies are born able to discriminate human faces and sounds from other objects and noises.<sup>36</sup> What is more, babies actively engage people in meaningful behavior by imitation. Andrew Meltzoff performed experiments on newborns to determine how early babies imitate adult expressions. He started with three-week-olds but eventually attended delivery rooms to experiment with even younger subjects. The youngest was forty-two minutes old and also imitated expressions. Basic imitation—such as a baby sticking out his or her tongue in response to an adult doing the same—may seem simple (a case of stimulus/response even) but is in fact rather complex. Babies have not seen their own faces, much less their tongues, and yet are able to coordinate what they see with their own bodily sensations (proprioception) to produce a similar expression. What is more, babies do not just imitate—they *flirt*. Babies spontaneously time their responses, staying still in observing adults babbling and cooing at them and then kicking and babbling in return when adults stop, establishing a synchronized connection: “Like grown-up flirtation, baby flirtation bypasses language and establishes a more direct link between people.”<sup>37</sup>

Still more complex, intelligent behavior may be found in recent studies by Bloom that indicate that babies are capable of not only recognizing agency but making judgments about agents’ behavior (or as Peirce suggested, are virtual psychists). Bloom and colleagues constructed scenarios in which an “agent” (a red ball) was seen struggling up a hill. In some instances, a yellow square appeared and “helped” the red ball up; in others, a green triangle appeared and pushed the ball backward. In a variation, a puppet struggled to open a lid on a box. In some cases, another puppet would appear and help, while in others it would appear and jump on the lid, slamming it shut. In these experiments, three-month-olds clearly preferred to look at the helpers; older babies, capable of more motor control, not only look to helpers but reach out for them.<sup>38</sup>

Bloom draws on these studies to suggest that babies are born with a moral sense, a rudimentary capacity to judge agents’ behavior. This is an open question, but it at least indicates that, prior to an infant developing and using language, he or she already recognizes agency in the world and discriminates among different kinds of behavior (help/harm). This of course does *not* suggest that capacities already formed in infants are not modified and refined by habits embedded in linguistic (and other cultural) practices with which a baby develops and grows up. They surely are, as the child comes to discriminate, for example, between harmful aggression and

necessary discipline. But there is similarly no reason to believe that these forms of cognitive behavior, early expressed unconsciously, subsequently occur *only* in or through language (a proposition for which we would need considerable evidence). On the contrary, they remain constitutive of the vast unconscious Peirce identified and on which Peirce insisted we rely for much of our mental lives and practical engagement with the world.

#### 4. Conclusion

The last two sections offer empirical evidence supporting the view that not all experience is mediated by language or the categories of thought imported thereby. The work of unconscious mind—which not only provides basic understanding of the world but also continually models it veridically and, where agents are concerned, evaluates it—proceeds rapidly, automatically, and at least to some extent according to rules endowed by evolution (or at least developed very early and prior to language). It is no less certain that as we mature experience is *also* mediated to some extent, and in some cases extensively, by language. And as Pinker writes, “Of all the faculties that go into the piece of work called man, language may be the most awe-inspiring.”<sup>39</sup> Language does not just convey information, facilitate memory, underwrite explicit reasoning, and reveal hidden connections via metaphor and metonym—which is impressive enough; it cultivates (as John Dewey well understood) sharing, participation, and genuine community.

But the grandeur of language does not require the belief that “all experience is saturated by language”; indeed, as Pinker writes, “the idea that language is a prisonhouse denigrates its subject by overestimating its power.”<sup>40</sup> As Peirce rightfully insisted, there is more to experience than language. There is a real world that intrudes on our senses and that we come to know gradually, through surprise and deliberate trial and error, in all its splendor and variety, and which we struggle to capture, explore, transform, and communicate to one another through language. If anything is more wonderful than language itself, it is that we have both—language and world—and while we may at times need to distinguish one from the other for various practical purposes, we do not have to choose between—or somehow reconcile—the two. The task, rather, is to learn how we are informed by each and, better yet, how we can improve our shared practices involving both together.

## NOTES

1. Charles Sanders Peirce, *The Collected Papers of Charles Sanders Peirce*, 8 vols., ed. Charles Hartshorne, Paul Weiss, and A. W. Burks (Cambridge: Harvard University Press, 1931–58), 8.261 (1905); hereafter cited by volume, paragraph, and year.
2. See Charles Sanders Peirce, *The Essential Peirce: Selected Philosophical Writings*, vol. 2, ed. Peirce Edition Project (Bloomington: Indiana University Press, 1998), 62; hereafter cited parenthetically in the text as “EP2” by page number.
3. Jürgen Habermas, *Truth and Justification*, trans. Barbara Fultner (Cambridge: MIT Press, 2003), 2.
4. *Ibid.*, 36.
5. *Ibid.*, 30.
6. Richard Rorty, *Consequences of Pragmatism* (Minneapolis: University of Minnesota Press, 1982), 14–17; Richard Rorty, *Rorty and His Critics*, ed. Robert Brandom (Oxford: Blackwell, 2000), 56.
7. Richard Bernstein, *The Pragmatic Turn* (Malden, Mass.: Polity Press, 2010), 122–24.
8. Habermas, *Truth and Justification*, 30.
9. Steven Pinker, *The Blank Slate: The Modern Denial of Human Nature* (New York: Penguin Books, 2003), 207–8.
10. Benjamin Lee Whorf, *Language, Thought, and Reality: Selected Writings*, ed. John B. Carroll (Cambridge: MIT Press, 1956), 213–14. For similar claims, see 55, 252, 263.
11. Pinker, *Blank Slate*, 201–8.
12. Leonard Mlodinow, *Subliminal: The New Unconscious and What It Teaches Us* (New York: Penguin Books, 2012), 4. For the experiment, see Charles Sanders Peirce, *Writings of Charles Sanders Peirce: A Chronological Edition*, ed. Christian J. W. Kloesel (Bloomington: Indiana University Press, 1993), vol. 5, 122–35; hereafter cited parenthetically in the text as “W” by volume and page number.
13. As cited in Mlodinow, *Subliminal*, 4–5. See also Peirce’s manuscript 692, available at <http://www.iupui.edu/~arisbe/digitized.HTM>.
14. See also Charles Sanders Peirce, *The Essential Peirce: Selected Philosophical Writings*, vol. 1 (1867–1893), ed. Nathan Houser and Christian Kloesel (Bloomington: Indiana University Press, 1992), 181.
15. Mlodinow, *Subliminal*, 17.
16. Antonio Damasio, *Self Comes to Mind: Constructing the Conscious Brain* (New York: Vintage Books, 2012), 70.
17. *Ibid.*
18. *Ibid.*, 67; see 69.
19. Mlodinow, *Subliminal*, 45.
20. Chris Frith, *Making Up the Mind: How the Brain Creates Our Mental World* (Oxford: Blackwell, 2007), 134–35. We know that one resembles the other because



recent studies using functional magnetic resonance imaging signals accurately reconstruct images viewed by an observer, indicating that the brain accurately captures salient features of the world. See Thomas Naselaris, Ryan J. Prenger, Kendrick N. Kay, Michael Oliver, and Jack L. Gallant, "Bayesian Reconstruction of Natural Images from Human Brain Activity," *Neuron* 63 (September 24, 2009): 902–15.

21. Prior beliefs are drawn from prior experience, but some knowledge is also hardwired into the brain by evolution (e.g., about the color of ripe fruit). See Frith, *Making Up the Mind*, 128.

22. Frith, *Making Up the Mind*, 126–27. For more, see Daniel Kersten, Pascal Mamassian, and Alan Yuille, "Object Perception as Bayesian Inference," *Annual Review of Psychology* 55 (2004): 271–304.

23. Frith, *Making Up the Mind*, 135. See 5.220 (1903).

24. Mlodinow, *Subliminal*, 46.

25. *Ibid.*

26. Robert Kurzban, *Why Everybody (Else) Is a Hypocrite: Evolution and the Modular Mind* (Princeton: Princeton University Press, 2012), 11–12.

27. V. S. Ramachandran, *The Tell-Tale Brain: A Neuroscientist's Quest for What Makes Us Human* (New York: W. W. Norton, 2011), 62. See also Leslie G. Ungerleider and Michael Mishkin, "Two Visual Streams," in *Analysis of Visual Behavior*, ed. David J. Ingle, Melvyn A. Goodale, and Richard J. W. Mansfield (Cambridge: MIT Press, 1982), 549–86.

28. Ramachandran, *Tell-Tale Brain*, 63.

29. *Ibid.*, 64.

30. *Ibid.*, 65.

31. For more on the dispute regarding terminology, see Sandra Rosenthal, "Peirce's Pragmatic Account of Perception: Issues and Implications," in *The Cambridge Companion to Peirce*, ed. Cheryl Misak (Cambridge: Cambridge University Press, 2004), 193–213.

32. For example, Jonathan Haidt's recent empirical work on moral foundations suggests that human beings (across cultures) are predisposed to concern over six domains of moral conduct, but the contents of these domains require culture elaboration, and this differs across cultures. Drawing on the work of the neuroscientist Gary Marcus, Haidt suggests that individuals are born not "hardwired" but "prewired," or as possessing "rough outlines" requiring cultural inscription. Jonathan Haidt, *The Righteous Mind: Why Good People Are Divided by Politics and Religion* (New York: Vintage Books, 2012), 150–53. Note that cultural elaboration equips agents with categories that capture features of the real world: forms of behavior that others care about. See also note 36.

33. Paul Bloom, *Just Babies: The Origins of Good and Evil* (New York: Crown, 2013), 20.

34. *Ibid.*, 22.

35. Alison Gopnik, *The Philosophical Baby: What Children's Minds Tell Us About Truth, Love, and the Meaning of Life* (New York: Farrar, Straus and Giroux), 87.
36. Alison Gopnik, Andrew N. Meltzoff, and Patricia K. Kuhl, *The Scientist in the Crib: Minds, Brains, and How Children Learn*, in *The Norton Psychology Reader*, ed. Gary Marcus (New York: New York University Press, 2006), 148. Facial recognition is also a likely example of a category of mediation that lies between linguistic and innate categories. Recent studies indicate that babies are predisposed to recognize faces, but early (prelinguistic) experience narrows recognition to some faces and not others. See David J. Kelly, Paul C. Quinn, Alan M. Slater, Kang Lee, Liezhong Ge, and Olivier Pascalis, "The Other-Race Effect Develops During Infancy: Evidence of Perceptual Narrowing," *Psychological Science* 18, no. 12 (2007): 1084–89, at 1088. My thanks go to a *Journal of Speculative Philosophy* reviewer for drawing my attention to this kind of prelinguistic mediation.
37. Gopnik, Meltzoff, and Kuhl, *Scientist in the Crib*, 150–51.
38. Bloom, *Just Babies*, 26–30.
39. Pinker, *Blank Slate*, 207.
40. *Ibid.*, 208.