

# BELIEF IN NATURALISM: AN EPISTEMOLOGIST'S PHILOSOPHY OF MIND<sup>1</sup>

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ABSTRACT: My title, "Belief in Naturalism," signals, not that I adopt naturalism as an article of faith, but that my purpose in this paper is to shed some light on what belief is, on why the concept of belief is needed in epistemology, and how all this relates to debates about epistemological naturalism. After clarifying the many varieties of naturalism, philosophical and other (section 1), and then the various forms of epistemological naturalism specifically (section 2), I offer a theory of belief in which three elements – the behavioral, the neurophysiological, and the socio-historical – interlock (section 3), and apply this theory to resolve some contested questions: about whether animals and pre-linguistic infants have beliefs, about the fallibility of introspection, and about self-deception (section 4).

KEYWORDS: naturalism; epistemology, belief; reductionism; mind; self-deception; C. S. Peirce; G. H. Mead; Sidney Hook; W. V. Quine.

In philosophy, George Santayana famously observed, "partisanship is treason."<sup>2</sup> I agree. Like good-faith inquirers in any field, philosophers have an obligation to seek true and illuminating answers to the questions that concern them; and it would obviously be a serious breach of this obligation simply to adopt a party line on some question, and then defend it against all objections. So my title, "Belief in Naturalism," should most emphatically *not* be taken as suggesting that I adopt naturalism as an article of faith. When I have taken a naturalistic stance (as I have in metaphysics, in philosophy of science, and in epistemology), I have done so, not because it is naturalistic, but because, on reflection, it seemed to be right – the best, the most reasonable, stance to take. What my title signals is, rather, that my purpose here is

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<sup>2</sup> George Santayana, *The Life of Reason* (1910; 2<sup>nd</sup> edition, New York: Charles Scribner's Sons, 1922), vol. 1, 110 (from a description of Bishop Berkeley as "a party man in philosophy").

to shed some light on what belief is, on why the concept of belief is needed in epistemology – and how all this relates to debates over epistemological naturalism.

To this end, I will first clarify the many varieties of naturalism (section 1); next distinguish the various forms of epistemological naturalism specifically (section 2); then offer my theory of belief (section 3); and, by way of conclusion, apply this theory to resolve some contested questions (section 4).

## 1. Varieties of Naturalism

The English word “naturalism” applies not only to philosophical theories, but also to works of literature and other genres of art. A standard dictionary of American English offers the following range of senses:

- 1: action, inclination, or thought based only on natural desires and instincts;
- 2: a theory denying that an event or object has a supernatural explanation; the doctrine that scientific laws are sufficient to account for all phenomena;
- 3: realism in art or literature, *specifically*: a theory in literature emphasizing scientific observation of life without idealization or the avoidance of the ugly.<sup>3</sup>

And the standard dictionary of British English offers this:

1. *Ethics*. Action arising from or based on natural instincts, without spiritual guidance; a system of morality or religion derived only from human reason and having no basis in revelation. ...
2. *Philos*. The idea or belief that only natural (as opposed to supernatural or spiritual) laws and forces operate in the world; (occas.) The idea or belief that nothing exists beyond the natural world. Also: the idea that moral concepts can be analyzed in terms of concepts applying to natural phenomena. ...
3. A style or method characterized by close adherence to, and representation of, nature or reality ...
  - a. in literature, cinema, etc. ...
  - b. in visual art. ...
4. Adherence or attachment to what is natural; indifference to convention.<sup>4</sup>

Here, however, I shall set literary and artistic naturalism aside, and focus exclusively on philosophical forms of naturalism.

But there are also many varieties of philosophical naturalism – or perhaps I should say, many philosophical naturalisms, in the plural. For one thing, philosophical naturalism comes in several sub-varieties, as applied to different areas of philosophy. For another, it comes in several strengths, differing very significantly

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<sup>3</sup> *Webster's Ninth New Collegiate Dictionary* (Springfield, MA: Merriam-Webster Publishers, 1991), 788.

<sup>4</sup> *Oxford English Dictionary Online* (available at <http://dictionary.oed.com>).

from each other: the weakest or most modest simply eschewing supernatural or purely *a priori* approaches, the more ambitious hoping to turn philosophical questions over to the sciences to resolve, and the strongest or most ambitious maintaining that normative philosophical questions are simply misconceived, and should, therefore, be abandoned in favor of scientific questions.

So, for example, we find:

- Naturalism in metaphysics: of which the most modest form simply eschews wholly conceptual or *a priori* approaches, and posits no supernatural entities or explanations; a more ambitious form relies on scientific theorizing to answer metaphysical questions; and the most ambitious form argues that metaphysics is misconceived, and should be abandoned in favor of scientific questions about ontology, cosmology, etc.
- Naturalism in ethics: of which the most modest form simply eschews reference to divine commands, “natural law,” or purely *a priori* principles; a more ambitious form calls on the theory of evolution to answer ethical questions; and the most ambitious form holds that the availability of an evolutionary explanation of our moral intuitions shows ethical questions to be misconceived.
- Naturalism in epistemology: of which the most modest form, again, eschews a purely *a priori* approach; a more ambitious form calls on cognitive psychology or evolutionary biology to answer epistemological questions; and the most ambitious form argues that epistemology should be abandoned in favor of the scientific study of cognition.
- Naturalism in philosophy of science: of which the most modest form pays close attention to scientific practice, eschewing purely *a priori* or strictly formally-logical models of scientific procedure; a more ambitious form relies on the history of science to answer questions about scientific evidence and method; and the most ambitious form repudiates normative aspects of such questions altogether.

There seems to have been relatively little exploration of the logical relations among the various forms of philosophical naturalism. But Sidney Hook's “Naturalism and First Principles”<sup>5</sup> – unfortunately, not much read today, perhaps because it has been overshadowed by W. V. Quine's much more famous “Epistemology Naturalized”<sup>6</sup> – is

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<sup>5</sup> Sidney Hook, “Naturalism and First Principles,” in *American Philosophers at Work*, ed. Sidney Hook (New York: Criterion Books, 1956), 236-58; reprinted in Hook, *The Quest for Being* (New York: St. Martin's Press, 1961), 172-95.

<sup>6</sup> W. V. Quine, “Epistemology Naturalized,” in his *Ontological Relativity and Other Essays* (New York: Columbia University Press, 1969), 66-90.

an honorable exception, exploring how naturalism in metaphysics, in epistemology, and in philosophy of science might be connected. And connections of the kind Hook's argument suggests can, in fact, be found running through my own work.

For example: my conception of what metaphysics is and does is modestly naturalistic, contrasting *both* with David Lewis's or Saul Kripke's *a priori* metaphysical theorizing, *and* with Quine's readiness to let metaphysics simply tag along in the footsteps of current physics. As I conceive it,<sup>7</sup> metaphysics is not about our language, nor about our concepts or conceptual schemes but, like the sciences, about the world; and so is not an *a priori* discipline, but an empirical one. However, unlike the sciences, metaphysics does not require experiments, excavations, or expeditions, nor specialized techniques of inquiry, and neither does it depend on *recherché* observations obtainable only by means of specialized instruments; instead, it requires very close attention to aspects of our everyday experience so familiar that ordinarily we hardly notice them: i.e., on phenomenology, in C. S. Peirce's sense of the term.<sup>8</sup> Moreover, not only my general approach to metaphysics, but also my specific metaphysical views, are naturalistic insofar as they eschew supernatural explanations – or rather, “explanations,” for by my lights these are not really explanations at all.<sup>9</sup>

Again: like Thomas Huxley,<sup>10</sup> Albert Einstein,<sup>11</sup> John Dewey,<sup>12</sup> Percy Bridgman,<sup>13</sup> and Gustav Bergmann,<sup>14</sup> I conceive of the methods of the sciences as

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<sup>7</sup> Here I follow Charles Sanders Peirce, who defends a quite distinctive, and distinctively plausible, “scientific” conception of metaphysics. Charles Sanders Peirce, *Collected Papers*, eds. Charles Hartshorne, Paul Weiss and (vols 7 and 8) Arthur Burks (Cambridge, MA: Harvard University Press, 1931-58), 6, 1-6 (1898 (section 1) and 1903 (section 2)). [References to the *Collected Papers* are by volume and paragraph number.]

<sup>8</sup> See Susan Haack, “The Legitimacy of Metaphysics: Kant’s Legacy to Peirce, and Peirce’s to Philosophy Today,” *Polish Journal of Philosophy*, 1 (2007): 29-43; reprinted in *Philosophical Topics*, 36, 1 (2008): 97-110.

<sup>9</sup> See Susan Haack, *Defending Science – Within Reason: Between Scientism and Cynicism* (Amherst, NY: Prometheus Books, 2003), 131, 279.

<sup>10</sup> “The man of science simply uses with scrupulous exactness the methods which we all, habitually and at every minute, use carelessly.” Thomas Huxley, “On the Educational Value of the Natural History Sciences” (1854), in Huxley, *Collected Essays* (London: MacMillan, 1893), vol. III, 38-65, 46.

<sup>11</sup> “The whole of science is nothing more than a refinement of everyday thinking.” Albert Einstein, “Physics and Reality,” *Journal of the Franklin Institute*, 221, 3 (1936), reprinted in Einstein, *Ideas and Opinions*, trans. Sonja Bargmann (New York: Crown Publishers 1954), 290-322, 290.

<sup>12</sup> “Scientific subject-matter and procedure grow out of the direct problems and methods of common sense.” John Dewey, *Logic: The Theory of Inquiry* (New York: Henry Holt & Co., 1938), 66.

<sup>13</sup> “[T]here is no scientific method as such ... the most vital feature of the scientist’s procedure has been merely to do his utmost with his mind.” Percy Bridgman, “New Vistas for Intelligence”

continuous with the methods of everyday empirical inquiry – although, of course, thanks to the work of many generations of scientists, these methods have by now been greatly amplified and refined.<sup>15</sup> So here too my views are modestly naturalistic, and contrast *both* with the formal-logical models of scientific method favored by such philosophers as Rudolf Carnap, Carl Hempel, and Karl Popper, *and* with the descriptive (and purportedly epistemologically neutral) socio-historical models favored by proponents of STS (Science and Technology Studies), SSK (Sociology of Scientific Knowledge), etc.<sup>16</sup>

From here on, however, I shall set metaphysics, philosophy of science (and ethics)<sup>17</sup> aside, and focus exclusively on epistemology.

## 2. Epistemological Naturalism

In *Evidence and Inquiry*<sup>18</sup> I distinguished and labeled the three main types of epistemological naturalism:

- reformist aposteriorist naturalism (the most modest form, according to which epistemology is not an entirely *a priori* enterprise, but continuous with the sciences of cognition; and results from the sciences of cognition – though not by themselves sufficient to answer epistemological questions – may have contributory epistemological relevance.

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(1947), in Bridgman, *Reflections of a Physicist* (1950; 2<sup>nd</sup> ed., New York: Philosophical Library, 1955), 553-68, 554.

<sup>14</sup> Science represents “the long arm” of common sense. Gustav Bergmann, *Philosophy of Science* (Madison, WI: University of Wisconsin Press, 1957), 20.

<sup>15</sup> See Haack, *Defending Science* (note 9 above), chapter 4 (articulating how scientific “helps” to inquiry – instruments of observation, the calculus, the computer, models and metaphors, and social helps to sustain honesty, discourage cheating, enable the sharing of evidence, etc. – have contributed to progress in the sciences).

<sup>16</sup> See Haack, *Defending Science* (note 9 above), chapter 2 (on Popper, Carnap, Hempel, etc.) and chapter 7 (on sociology of science).

<sup>17</sup> Though I have not written at any length about ethics, it may be worth noting that I find myself much in sympathy with William James’s, and especially John Dewey’s, fallibilist-empiricist approaches; which would also qualify as modestly naturalistic. I explain why, very briefly, in Susan Haack, “Six Signs of Scientism,” forthcoming in Chinese translation by Liu Jie in *Studies in Philosophy of Science and Technology* (Shanxi University); and in Spanish translation by Raúl Andrés Jaramillo Echaverría in *Discusiones filosóficas* (University of Caldas).

<sup>18</sup> Susan Haack, *Evidence and Inquiry* (1993; 2<sup>nd</sup>, expanded edition, Amherst, NY: Prometheus Books, 2009), chapter 6.

- reformist scientific naturalism (a more ambitious form), according to which the sciences of cognition can by themselves provide answers to epistemological questions.
- revolutionary scientific naturalism (the most ambitious form), according to which the traditional projects and questions of epistemology are simply misconceived, and should be replaced by the projects and questions of the sciences of cognition.

The foundherentist epistemological theory developed in *Evidence and Inquiry* is consonant with a kind of reformist aposteriorist naturalism at the meta-epistemological level. The approach proposed in Alvin Goldman's *Epistemology and Cognition* is a kind of reformist scientific naturalism (though his practice in the second, cognitive-science part of this book doesn't conform to the official stance he takes in the first, philosophical part).<sup>19</sup> And we find revolutionary scientific naturalism defended both in early work by Stephen Stich and, from a somewhat different angle, in the work of Paul and Patricia Churchland.<sup>20</sup>

All three positions can be found in Quine, who seems to offer modest, intermediate, *and* radical forms of naturalism – sometimes in the same paper, and even, occasionally, in the course of a single paragraph.<sup>21</sup> (Indeed, I suspect that “Epistemology Naturalized” may have become so famous in part precisely *because* it runs these different forms of naturalism so smoothly together; for anyone inclined to any form of naturalism – modest, intermediate, or radical – can find something in it to support their ideas.) The source of the trouble seems to be an ambiguity in Quine's use of the word “science”, which he sometimes uses broadly, to refer to “our presumed empirical knowledge” generally, and at other times narrowly, to refer specifically to the disciplines we classify as sciences. In consequence, Quine can first shift from the reformist aposteriorist claim that epistemology is part of SCIENCE (science in the broad sense) to the reformist scientific claim that epistemology is part of *science* (science in the narrow sense); and then – probably because he is at least half-aware how very implausible it is to suppose that physics, say, or even

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<sup>19</sup> Alvin Goldman, *Epistemology and Cognition* (Cambridge, MA: Harvard University Press, 1986). I give a detailed criticism of Goldman's approach in chapter 7 of *Evidence and Inquiry* (note 18 above).

<sup>20</sup> Stephen Stich, *From Folk Psychology to Cognitive Science* (Cambridge, MA: MIT Press, 1983); Paul Churchland, *A Neurocomputational Perspective: The Nature of Mind and the Structure of Science* (Cambridge, MA: MIT Press, 1989); Patricia Churchland, “Epistemology in the Age of Neuroscience,” *Journal of Philosophy*, 84, 10 (1987): 544-53. I make detailed criticisms of Stich's and the Churchlands' arguments in chapter 8 of *Evidence and Inquiry* (note 18 above).

<sup>21</sup> See Haack, *Evidence and Inquiry* (note 18 above), chapter 6, section I.

cognitive psychology, could answer such epistemological questions as what makes evidence better or worse, or whether and if so why true predictions confirm a theory – to the revolutionary scientific claim that such traditional epistemological questions are illegitimate, and should be abandoned in favor of legitimate, scientific questions about cognition.

Here, however, rather than pursue that diagnosis in detail,<sup>22</sup> let me focus on the revolutionary epistemological naturalism found sometimes in Quine, in one time-slice of Stich,<sup>23</sup> and in the Churchlands. The interesting thing about this, for present purposes, is that Quine, Stich, and the Churchlands all urge, as (one) reason for their revolutionary naturalism, that *there really are no such things as beliefs*. They are all, as one might say, “atheists” about belief – though they give very different reasons for their atheism. Quine is an *extensionalist* atheist: the problem he stresses is that beliefs cannot be given extensional criteria of identity. Stich is (or once was) a *functionalist* atheist: the problem he stresses is that no functionalist account of belief succeeds. And the Churchlands are *smooth-reductionist* atheists: the problem they stress is that beliefs cannot be smoothly reduced to neurophysiological states.

Popper is also, apparently, an atheist about beliefs – an *objectivist* atheist, one might say, since he seems to assume that any epistemological theory acknowledging a role to beliefs is thereby bound to be objectionably subjectivist. But unlike Quine, Stich, and the Churchlands, rather than drawing the conclusion that epistemology is misconceived, Popper urges the merits of an epistemology “without a knowing subject,” conducted in terms solely of propositions and their logical relations.<sup>24</sup> I believe Popper’s atheism derives from a confusion of the *personal* with the *subjective*. (How justified a person is in believing that *p* is personal, since it depends on how good *his evidence* is, but is not subjective, since it does not depend on how good *he thinks* his evidence is). And in any case, no adequate epistemology can do without knowing subjects and their beliefs; which is why even Popper himself can’t operate consistently without appealing to persons, their experiences, and their beliefs.<sup>25</sup>

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<sup>22</sup> As I did in chapter 6 of *Evidence and Inquiry* (note 18 above).

<sup>23</sup> A few years after *From Folk Psychology to Cognitive Science* Stich had changed his mind. In *The Fragmentation of Reason* (Cambridge, MA: MIT Press, 1990) he acknowledges that people do, after all, have beliefs; but now argues that there is no value in having true beliefs.

<sup>24</sup> Karl R. Popper, “Epistemology Without a Knowing Subject,” in Popper, *Objective Knowledge* (Oxford: Clarendon Press, 1972), 106-52.

<sup>25</sup> Susan Haack, “Epistemology *With* a Knowing Subject,” *Review of Metaphysics*, XXXIII, 2, 130 (1979): 305-35; and, in Romanian translation by Cătălina-Daniela Răducu and Georgiana Tacu, in *Symposion*, VII, 2 (14) (2009): 373-95; *Evidence and Inquiry* (note 18 above), chapter 5.

So I agree with Quine, Stich, and the Churchlands this far: epistemology needs beliefs – and, in consequence, epistemology also needs a reasonable account of what belief is.

### 3. What is Belief?

The account I shall propose – not as a conceptual analysis purporting to articulate necessary and sufficient conditions for the truth of “x believes that *p*,” but as the beginnings of a theory, in part conceptual but also in part empirical,<sup>26</sup> of what believing something involves – will have three interlocking elements or dimensions: (i) the behavioral; (ii) the neurophysiological; and (iii) the socio-historical.

(i) First, the behavioral dimension. Here, I borrow from the definition of belief given by the old Scottish psychologist Alexander Bain, as “preparedness to *act* upon what we affirm;”<sup>27</sup> from C.S. Peirce’s account of belief as a *habit* of action;<sup>28</sup> and from H.H. Price’s insight that belief involves not a single, simple behavioral disposition, but a *multiform* behavioral disposition.<sup>29</sup> Someone who believes that *p* normally has a disposition to behave, both verbally and non-verbally, as if *p*. Someone who believes that snakes are dangerous, for example, will be disposed to assert, and to assent to, sentences in his language to the effect that snakes are dangerous;<sup>30</sup> to shriek at the sight of, and run away from, snakes; to refuse to touch a snake or even go near it; to be surprised if he sees someone else stroking a pet snake; and so on.

The qualification “normally” acknowledges that we will need to take into account the pervasive interrelations among beliefs. For example, someone who believes that snakes are dangerous won’t be disposed to shriek at the sight of or run away from a snake in a zoo, if he also believes that this snake is safely enclosed

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<sup>26</sup> See also Susan Haack, “The Growth of Meaning and the Limits of Formalism, in Science and Law,” *Análisis Filosófico*, XXIX, 1 (2009): 5-29; and “The Meaning of Pragmatism: The Ethics of Terminology and the Language of Philosophy Today,” *Teorema*, XXX/III, 3 (2009): 9-29.

<sup>27</sup> Alexander Bain, *The Emotions and the Will* (1855; 3<sup>rd</sup> ed., London: Longmans, Green & Co., 1875), 505 (emphasis added).

<sup>28</sup> Peirce’s conception is itself developed from Bain’s observations about belief. Indeed, Peirce writes that “[from] Bain’s definition of belief, as ‘that upon which a man is prepared to act,’ ... pragmatism is scarce more than a corollary.” Peirce, *Collected Papers* (note 7 above), 5,12 (c.1906). See also Max Fisch, “Alexander Bain and the Founders of Pragmatism” (1954), in *Peirce, Semeiotic, and Pragmatism: Essays by Max Fisch*, eds. Kenneth Laine Ketner and Christian Kloesel (Bloomington, IN: Indiana University Press, 1986), 79-109.

<sup>29</sup> H.H. Price, *Belief* (London: Allen and Unwin, 1969), 267 ff.

<sup>30</sup> And, of course, to deny, or dissent from, sentences to the effect that snakes are not dangerous – an addendum that will henceforth be understood.



behind plate glass; nor will he be surprised if he sees someone stroking a pet snake, if he believes it has been de-fanged. We shall also need to accommodate the fact that the interrelations among beliefs and desires mean that someone with unusual desires will be disposed to behave differently from the rest of us when he has a certain belief. For example, someone who believes that snakes are dangerous, but who – because, in his religion, this is a way to express your faith in God's protection – wants to handle snakes without showing fear, may suppress his disposition to run away from snakes sufficiently to take part in the snake-handling ceremony.<sup>31</sup> Again: normally, someone who believes the gun is loaded will not be disposed to hold it to his head and pull the trigger; but this may be exactly what a suicidal person with the same beliefs is disposed to do.<sup>32</sup>

But though it will certainly need amplification, this preliminary account of the behavioral dimension of belief is able to handle the phenomenon of deliberately insincere assertion: someone who believes that  $p$ , but wants his audience to believe that not- $p$  (or to believe that he believes that not- $p$ ), may over-ride his disposition to assert/assent to sentences to the effect that  $p$ , and instead assert that not- $p$ , or assent to another's assertion that not- $p$ ; but – at least when his audience isn't looking – he will not over-ride his disposition to *act* as if  $p$ . For example, if I believe the ice on the lake is too thin to bear the weight of an adult, but want my enemy to believe that it is thick enough for him walk over, I may tell him, insincerely, that it is safe to cross; but I will make excuses to avoid walking on the ice myself.

It might be thought that there are special difficulties in accounting for the spy or the confidence man, who in effect lies for a living; but this is really just a special case of the phenomenon of insincere assertion. It may need to be said, however, that it is a mistake to suppose that such a person *always* acts contrary to the dispositions which, if I am right, correspond to his beliefs. On the contrary, even such a person, most of the time – when he decides what to eat or drink, how

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<sup>31</sup> Serpent handling is a religious ritual among certain Pentecostal sects. See W. Paul Williamson and Howard R. Pollo, "The Phenomenon of Religious Serpent Handling: A Rationale and Thematic Study of Extemporaneous Sermons," *Journal for the Scientific Study of Religion*, 38, 2 (1999): 203-218; Bill J. Leonard, "The Bible and Serpent-handling," in *Perspectives on American Religion and Culture*, ed. Peter W. Williams (Oxford: Blackwell, 1999), 228-95.

<sup>32</sup> Sometimes it is suggested that "the holism of the mental" precludes the possibility of ascribing beliefs altogether. But this is an exaggerated response to an exaggerated statement of the interrelations among beliefs, and between beliefs and desires. We can, and do, attribute beliefs to people every day – sometimes explicitly, but often implicitly. Whenever we drive across a junction when the light is green, for example, we take for granted that other drivers believe they must stop while the light is red.

to get from A to B, whether to walk down the rickety steps, etc. – will act in accordance with what he really believes. And in the “professional” part of his life, the part that requires him to speak, and act, contrary to what he really believes, he still has the *disposition* to speak and act in accordance with these beliefs, but his desire to take advantage of others by deceiving them over-rides it.

The behavioral dispositions involved in belief are not categorical, but conditional, dispositions to do A *if p*. This helps explain what is going on with that very common detective-story ploy, where the police trap a suspect by leading him to believe that incriminating evidence against him is to be found in such-and-such a place, and then follow him as he goes there to remove or destroy the gun (or the letter, or whatever it is). The suspect believes that if the police get hold of the gun, he will be convicted of the crime, and that if he is convicted of the crime, he will go to jail; and he doesn’t want to go to jail. So he is disposed to try to prevent the police from getting the gun. The police know this; so they set up the situation to make the suspect believe that *p*, triggering the actualization of his conditional disposition to do A if *p* – so that he will reveal his consciousness of guilt by doing A.

My account of the behavioral element of belief also has the virtue of suggesting an explanation of the difference between *degree* of belief and *firmness* of belief – two characteristics that are often confused, but are really very different. Degree of belief depends on how *strong* the relevant dispositions are – on how much you would bet that *p*,<sup>33</sup> we might say, or on how surprised you would be if it turned out that not-*p*. (When we are very sure, we say “I’d bet the house that *p*,” or “I’d be astounded if not-*p*”; when we are unsure, we say, “I wouldn’t bet on it” or, “I wouldn’t be entirely surprised if, after all, not-*p*.”) Firmness of belief depends on how *entrenched* the relevant dispositions are, how easily they can be changed. Usually, the two go together; but not always. Someone may believe that *p* with a high degree of confidence, but a low degree of firmness: he is very sure that *p*; but he would change his mind very readily – i.e., lower his degree of belief, or give up the belief altogether – were new evidence to come in. And someone may believe that *p* with a high degree of firmness, but a low degree of confidence: he is only somewhat inclined to think that *p*; but it would take a lot of evidence to budge him from this very weak belief.<sup>34</sup>

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<sup>33</sup> This should not be interpreted as indicating that I subscribe to a kind of subjective Bayesianism; I do not. See *Defending Science* (note 9 above), 74-7.

<sup>34</sup> I have put this in terms of degrees of belief; others might prefer to treat belief categorically, as a limit case of degrees of credence. But this doesn’t substantially affect the points I have made, which could be expressed in either vocabulary.

Epistemology needs both concepts. How reasonable a person is in believing something depends in part on whether the degree to which he believes that  $p$  is appropriately related to the strength of his evidence with respect to  $p$ . If your evidence is strong, it is reasonable to believe strongly; but if your evidence is weak, it is reasonable only to believe to some lesser degree. By contrast, fallibilism has to do with the firmness of belief, with readiness to change your beliefs if new evidence undermines them.<sup>35</sup>

(ii) Next, the neurophysiological dimension. I assume that the dispositions to verbal and non-verbal behavior involved in someone's believing something are physically realized, and that they are realized in something in his brain and not, for example, in his left big toe. But I do *not* assume that these dispositions are smoothly reducible to neurophysiological states, if what that means is that there is some specific type of brain matter, neurophysiologically identifiable, that turns pink, or lights up, or whatever, in every person who believes, say, that Carnap had an aunt who lived in Vienna. Rather, my picture is of neurophysiologically generic parts of the brain that, in a particular person, get linked to this kind of object or property, these words, these things, etc.; and of the behavioral dispositions involved in belief as realized in meshes of interconnections between receptors (whatever registers input from the world) and activators (whatever activates behavior, verbal or non-verbal).

This picture, initially wholly conjectural, turns out to be, to at least a modest degree, confirmed by some recent work in brain science. Over a decade of experiments on patients awaiting brain surgery for epilepsy, scientists at the University of California, Los Angeles discovered that a single neuron would fire when the subject heard the name of, or saw a picture of, or read about, a person, whether real (like Ronald Reagan) or fictional (like Homer Simpson), or a kind of animal or object, etc. – not a specific *type* of neuron, that is, but some particular, individual neuron that, in a given subject's brain, was associated with that person, animal, or thing. Though “[n]o one [yet] knows how the cells can encode a complex thought or how so many neurons can make a mind,” these researchers conceive of neurons as “Lego bricks of the brain – a construction set that can self-assemble into a cathedral of thought.”<sup>36</sup>

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<sup>35</sup> Compare Mark Migotti, “The Key to Peirce’s View of the Role of Belief in Science,” *Cognitio*, 6, 1 (2005): 43-55.

<sup>36</sup> Robert Lee Hotz, “A Neuron’s Obsession Hints at Biology of Thought,” *Wall Street Journal*, October 9 (2009), A14.

Think of an alarm clock. This is undeniably a purely physical object; and the explanation of how it rings will be purely in terms of physical laws (laws about cogs, wheels and bells in the case of an old-fashioned, mechanical alarm clock, laws about electrical connections, etc., in the case of a modern, digital clock). But there is no specific physical kind of cog, and no specific physical kind of electrical contact, associated with the clock's being set to go off at 7:30 a.m.; there are just generic cogs and wheels that can be linked to this, that, or another time-setting. That the clock is set to go off at 7:30 a.m. can't be understood purely in terms of the physical configuration and workings of the clock; the explanation must also refer to social conventions about time. Similarly with respect to belief: the key distinction is between the physical realization of a belief (analogue: the configuration of cogs and wheels) and their content (analogue: the clock's being set for 7:30). The content of a belief is determined, not simply by physical features of its neurophysiological realizations, but by the connections of neurons, etc., with things in the world, and with the use of words in the person's linguistic community.

(iii) This leads me directly to the last, socio-historical dimension of my account. Here, my inspiration is the work of George Herbert Mead, the founder of social psychology, who was concerned to understand in what ways human beings are like other animals, and in what ways unlike them; and in particular how the human capacity for language could have arisen out of our animal ancestry.<sup>37</sup> The "mindedness" characteristic of all normal humans, Mead argues, arises out of the social, and specifically the linguistic,<sup>38</sup> interactions to which a normal human infant is exposed. My conception of the content of beliefs as depending on socio-historico-linguistic factors is exactly in the spirit of his approach.

The analogy with alarm clocks already suggested one reason to think that the *same* belief might be *differently* realized. One alarm clock may work mechanically and another electrically; and, similarly, beliefs that are realized in neurophysiological configurations of the brain in human beings might be realized quite differently in silicon-based Martians.<sup>39</sup> But now we encounter a much less far-fetched reason to

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<sup>37</sup> George Herbert Mead, *Mind, Self, and Society from the Standpoint of a Social Behaviorist*, ed. Charles Morris (Chicago, IL: University of Chicago Press, 1934). Mead apparently takes for granted that human beings are the only creatures capable of language; but I will not explore that issue here.

<sup>38</sup> Here and in what follows I shall understand "linguistic" as referring not only to spoken language, but to any kind of sign-system, such as the sign languages of the deaf.

<sup>39</sup> A point made long ago by Hilary Putnam in "The Mental Life of Some Machines," reprinted in Putnam, *Mind, Language and Reality: Philosophical Papers*, vol. 2 (Cambridge: Cambridge University Press, 1975), 408-28.

think that the same belief *will*, in fact, be realized differently in different people: in a monolingual English speaker, the belief that snakes are dangerous will be realized in part by connections with English sentences to the effect that snakes are dangerous; but in a monolingual Chinese speaker it will be realized in part by connections with Chinese sentences to the effect that snakes are dangerous; and so on.

This is all very well, you might say, but now we need an account of what makes it true that what the monolingual English speaker and the monolingual Chinese speaker both believe is that snakes are dangerous, i.e., that they have the same belief. They share the same kinds of non-verbal disposition, I would reply; and, moreover, the English sentences and their Chinese counterparts are similar in meaning. I speak of “similarity,” rather than of “sameness” of meaning or of “synonymy,” because I believe that – both within a language and across languages – degrees of similarity of meaning, rather than exact synonymies, are what we usually find; indeed, as I conceive it, what we call a language might, strictly speaking, be better described as a congeries of similar-enough idiolects.<sup>40</sup> Moreover, how much similarity of meaning is required to attribute the same belief to different people depends on context: for everyday purposes, similar-enough is good enough; but in, for example, legal and (as Frege taught us)<sup>41</sup> logical contexts, we will need to make finer-grained distinctions.

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Now I can articulate how I would reply to atheists like Quine, Stich, and the Churchlands. *They have all, in one way or another, misunderstood what beliefs would have to be like if there were any.* Though it is true, as Quine suggests, that there are no sharply specifiable identity-conditions for beliefs, it doesn't follow, as he supposes, that it is inappropriate to “posit” the existence of beliefs. Though it is true, as the Churchlands suggest, that beliefs cannot be smoothly reduced to neurophysiological states, again it doesn't follow that there are no such things, nor that the old, folk-psychological “research program” (as Paul Churchland likes to call explanations of action in terms of beliefs and desires) is “degenerating,” and its ontology mythical. And though it is true, as Stich suggests, that a functionalist

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<sup>40</sup> This is why we sometimes speak of “English,” but in other contexts feel the need to distinguish British English, American English, Hong Kong English, Indian English, and so forth. See Mark Abley, *The Prodigal Tongue* (New York: Houghton Mifflin Harcourt, 2007). Haack, “The Growth of Meaning” (note 26 above) is also relevant.

<sup>41</sup> Gottlob Frege, “On Sense and Reference” (1892), trans. Max Black, in *Translations from the Philosophical Writings of Gottlob Frege*, eds. Peter Geach and Max Black (Oxford: Basil Blackwell, 1966), 56-78.

account of belief is inadequate, once again, it doesn't follow that there are no beliefs.

But here I would add a qualification: in describing Quine's, Stich's, and the Churchlands' positions, I have used the convenient form of words, "there are no such things as beliefs"; but I would prefer, when speaking on my own behalf, *not* to talk of "beliefs" as "things" (let alone as "entities" that should, or should not, be "admitted into our ontology") but instead to talk about *someone's believing this or that*. Beliefs are not things a person has, like his car or his pet gerbil, but (complex) states that a person is in.<sup>42</sup>

#### 4. Applying the Theory

This understanding of the various interlocking elements of belief suggests plausible answers to some familiar conundrums.

Do animals and pre-linguistic babies have beliefs? No, I would say, not in the fullest sense; they have the relevant non-verbal dispositions, but they lack the relevant verbal ones. To be sure, the cat who comes to my house to be fed expects that, when she sits on the deck and looks in the back door, food will appear; but she doesn't believe that I will feed her if she asks politely. She has simply acquired the habit of waiting on my deck when she is hungry. This is not to deny that *perhaps* some animals have (very limited) linguistic capacities. Nor, more importantly in the present context, is it to deny that *certainly*, as they gradually acquire language, small children gradually come closer to having beliefs, in the fullest sense. The point at which a child understands the difference between a true story and a made-up one – which psychologists estimate at somewhere around four-and-a-half years of age – is crucial.

I think, in this context, of little Tanya, one of the small children caught up in the McMartin Preschool case.<sup>43</sup> This was a criminal case (at the time, the longest-running and most expensive such case in the history of the U.S. legal system) in which the teachers at a kindergarten were accused, on the basis of a complaint from

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<sup>42</sup> In English, the word "belief" can be used either to refer to a psychological state (someone's believing something) or to the content of such a state (the proposition believed). See *Evidence and Inquiry* (note 18 above), chapter 4. For some epistemological purposes both senses of "belief," and the interrelations between them, are relevant; but here I am concerned only with beliefs-as-states.

<sup>43</sup> See *McMartin v. Children's Institute International*, 212 Cal. App. 3d, 261 Cal.Rptr.437 (1989); Doug Linder, "The McMartin Preschool Abuse Trial: A Commentary" (2003), available at <<http://www.law.umkc.edu/faculty/projects/ftrials/mcmartinaccount.html>>, last visited 3.3.2010.

the hysterical mother of one small boy, of sexually abusing the children in their care. The experts on child-abuse who interviewed the children took themselves to be helping them recover memories that had been lost to consciousness because they were so traumatic (though, with hindsight, it seems far more likely that the interviewers were inducing false memories, or perhaps just unwittingly encouraging fabrication.) The testimony of four-year-old Tanya was particularly confused. And asked, "Do you know the difference between the truth and a lie? What's a lie?", Tanya replied: "Umm, it has big teeth – and it's sort of brownish."<sup>44</sup> (She didn't know the difference between a *lie*, and a *lion*.)

Both Stich and Paul Churchland base their atheism, in part, on work suggesting that pre-linguistic infants don't have beliefs.<sup>45</sup> I agree; they don't. But it is absurd to suppose that, because small babies don't have beliefs, adults don't have them, either (as absurd as supposing that, because small babies don't talk, adults don't, either). Stich also writes, rather unkindly, about an elderly woman, Mrs. T., who once worked for his family. Asked whether President McKinley had been assassinated, Stich reports, Mrs. T. would answer, "yes"; but she would not assent to "President McKinley is dead," or even to "I am not dead."<sup>46</sup> Poor Mrs. T. was apparently suffering from Alzheimer's disease, or some similar disorder. And it is true, as Stich suggests, that in such a case – where a person's verbal behavior is "all over the map," forming no intelligible pattern – we may well be reluctant to ascribe *any* belief. But it is no less absurd to suppose that, because it may be difficult or impossible to say what, if anything, an elderly person suffering from dementia believes, it follows that normal adults don't have beliefs, than it is to draw this conclusion from the fact that small babies don't have beliefs. And my sketch of what the neurophysiological realization of belief might be suggests a plausible explanation of what was happening to Mrs. T.: her capacity for full belief was diminishing as the connections in her brain failed. Mrs. T's sad condition teaches us, not that normal adults don't have beliefs, but that the beliefs that normal adults have can be lost if the relevant neurophysiological connections are broken.

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<sup>44</sup> Debbie Nathan and Michael Snedecker, *Satan's Silence: Ritual Abuse and the Making of a Modern American Witch Hunt* (New York: Basic Books, 1995), 78-80. The interviewer subsequently told Tanya's mother that her daughter indeed had been molested.

<sup>45</sup> Stich, *From Folk Psychology* (note 20 above), 240-41. Paul Churchland, "The Ontological Status of Observables," *Pacific Philosophical Quarterly*, 63, 5 (1982): 226-33; reprinted in Churchland, *A Neurocomputational* (note 20 above), 139-51, 150-151 in the latter.

<sup>46</sup> Stich, *From Folk Psychology* (note 20 above), 54ff.

Both Stich and Paul Churchland also make much of the fact that introspection is fallible.<sup>47</sup> Our knowledge of our own beliefs is, indeed, imperfect: so imperfect, indeed, that someone else may know better than you do what you really believe. (An old joke about two behaviorist psychologists meeting on the street illustrates the point perfectly: “Hi,” the first behaviorist says to the second, “You’re fine. How am I?”) But here too the atheists’ argument is flawed: the fallibility of introspection obviously has no tendency to show that we don’t have beliefs. In fact, the account of belief given here provides some explanation of *how* another person may know better than you what your beliefs are. Knowing whether I believe that *p* is in part a matter of knowing *what I would do or say* in these or those circumstances; and this is something that may be more readily accessible to someone else, who has seen me act and heard me talk, than it is to me.

Our own beliefs are not always transparent to us, for we humans have a remarkable talent for self-deception, for fooling ourselves about what we really believe. Fortunately, my account also suggests a possible explanation of how we manage to do this. Blaise Pascal advises those who want to believe in God to attend church, take masses, etc. – i.e., to behave like someone who does believe.<sup>48</sup> Yes: one way to trick yourself into believing that *p* is systematically to *behave as if* you already believed it. If you are resistant enough to acknowledging that the sinister-looking lump that just appeared on your nose is potentially dangerous, you may be motivated to behave towards yourself much as you would when trying to deceive someone else: you will tell yourself, “it’s nothing terrible, just a bump or a bruise or a pimple”; you will studiously ignore the lump, not touching it or looking at it; and you will stay far away from dermatologists. And if you keep doing this, you may actually end up believing that the lump is harmless, as the dispositions involved in the belief that the lump is harmless come to be automated. At least initially, since you still believe that the lump is sinister-looking, these new dispositions will sit uneasily alongside the old, contrary dispositions; but in due course, if the self-deception is completely successful, the old dispositions will gradually fade away.

Inevitably, there are still some questions to which, as yet, I can offer only the most provisional answers. What is inference? Presumably it involves one

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<sup>47</sup> Stich, *From Folk Psychology* (note 20 above), 230-37. Paul Churchland, *Scientific Realism and the Plasticity of Mind* (Cambridge: Cambridge University Press, 1979), sections 12-16; Paul Churchland, “Eliminative Materialism and the Propositional Attitudes,” *Journal of Philosophy*, 88, 2 (1981): 67-89, section II, reprinted in *A Neurocomputational* (note 20 above), 1-23.

<sup>48</sup> Blaise Pascal, *Pensées* (left unfinished at his death in 1662); English translation by W. R. Trotter (London: J. M. Dent & Sons; New York: E. P. Dutton & Co., 1910), §§233 and 418.



multi-form disposition (or set of dispositions) triggering another; but how, exactly, does this differ from association of ideas? What is occurrent belief? Not, presumably, an activated belief-disposition, but something more like current awareness that you would say or do this or that if ... . And what happens when you see (or hear, etc.) something that changes some belief of yours – i.e., how, exactly, does what we perceive alter our beliefs? So far, at least, a fully satisfying answer to this question eludes me. As always, work remains to be done.<sup>49</sup>

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<sup>49</sup> This paper is based on a talk given first at the Kazimierz Naturalised Epistemology Workshop (September 2008); at the first Colombian Conference on Logic, Epistemology, and Philosophy of Science, the University of the Andes (November 2009); in the philosophy department at Renmin University (December 2009); and at the National Academy of Slovakia (June 2010). My thanks to Mark Migotti for his detailed suggestions on a draft; and to Pamela Lucken for help in finding relevant material.