

## BERTRAND RUSSELL'S FLIRTATION WITH BEHAVIORISM

Richard F. Kitchener  
*Department of Philosophy*  
*Colorado State University*

**ABSTRACT:** Although numerous aspects of Bertrand Russell's philosophical views have been discussed, his views about the nature of the mind and the place of psychology within modern science have received less attention. In particular, there has been little discussion of what I will call "Russell's flirtation with behaviorism." Although some individuals have mentioned this phase in Russell's philosophical career, they have not adequately situated it within Russell's changing philosophical views, in particular, his naturalistic epistemology. I briefly discuss this naturalistic epistemology and the kind of behaviorism it resulted in. I also briefly compare it to the behaviorism of John Watson, which had a strong influence on Russell. Russell finally abandoned this extreme form of behaviorism because of its denial of mental images, which was crucial to Russell's philosophy of mind and his semantics. I suggest that even though Russell's flirtation with behaviorism came to an end, he continued to be committed to a naturalistic epistemology. If this is so, we need to reassess the views of Russell and their place in twentieth-century thought.

*Key words:* behaviorism, behavioristic epistemology, naturalistic epistemology, Russell, Watson

### Introduction

It is now customary to distinguish *philosophical behaviorism* from *psychological behaviorism*. Psychological behaviorism is generally taken to be a methodological research program in empirical psychology, concerned with pursuing a program of psychological explanation of behavior based upon certain methodological principles and committed to a certain account of how a psychological theory can and should explain such behavior. Here one thinks of John Watson, Clark Hull, Edward Tolman, and B. F. Skinner as proposing alternative versions of such a psychological behaviorism (for a survey of several types of psychological behaviorism see O'Donohue & Kitchener, 1999).

During this same era, however, we also had several varieties of philosophical behaviorism—logical behaviorism, analytic behaviorism, physicalism, etc. Just as

---

**AUTHOR'S NOTE:** Thanks to conversations with Alan Costall, Jon Ringen, and Rob Wozniak. An earlier version of this paper was read at the 6<sup>th</sup> International Congress of Behaviorism and the Sciences of Behavior, Auburn University (September 2002). Thanks to Peter Harzem for the invitation to read that paper. Correspondence concerning this article should be addressed to Richard F. Kitchener, Department of Philosophy, Colorado State University, Ft. Collins, CO 80523. Email: rkitch@lamar.colostate.edu

the names of Watson, Hull, and Skinner come to mind when one encounters “psychological behaviorism,” so the names of Carnap, Hempel, Ryle, and Wittgenstein come to mind when one thinks of “philosophical behaviorism.”

There are important philosophical differences between the representatives of philosophical behaviorism. Carnap and Hempel are usually classified together as physicalists or logical behaviorists, and Ryle and Wittgenstein are often labeled “analytic behaviorists.” There are good reasons, however, for claiming that both groups can be brought under a single term—*semantic behaviorism* (Kitchener, 1999), for what is characteristic of these forms of philosophical behaviorism, according to these authors, is not a commitment to an empirical research program of a certain kind, but a commitment to clarifying the *meaning* of mentalistic terms by reference to behavior and behavioristic terms.

Of course, one can find elements of semantic behaviorism in the writings of psychological behaviorists; Tolman and Hull’s various polemics about operational definitions, intervening variables vs. hypothetical constructs, etc. are surely methodological disputes, but they are also disputes about the proper definition of psychological terms, and this is usually taken to be a semantic issue (Skinner’s [1948] protestations to the contrary notwithstanding).

Much of this traditional reading of psychological and philosophical behaviorism has recently been subject to re-evaluation, however. For example, Larry Smith (1986) has questioned the standard interpretation of the relation between logical positivism and psychological (neo) behaviorism. I have been arguing that the kind of naturalism one finds in Skinner and Quine can be found not only in Tolman and Hull (as Smith suggests) but, more controversially, in the logical positivists themselves—in Carnap and Hempel (Kitchener, 2004). In certain ways, therefore, the very distinction between psychological behaviorism and philosophical behaviorism is now being questioned since it seems to be a holdover of the very distinctions individuals such as Quine (1951) want to question—the analytic-synthetic, the *a priori a posteriori*, the necessary-contingent, and the empirical-normative. If this is correct then we must “revisit” the history of twentieth-century behaviorism, both philosophical and psychological. In so doing we must also pay more attention to the actual history of these various schools and their interaction—something Smith has been urging for years.

In this paper I want to contribute a little toward this re-reading of the history of behaviorism by looking (briefly) at an individual who is rarely mentioned in historical discussions of philosophical behaviorism—Bertrand Russell. For, during at least one long period of his life, Russell was a guarded defender of behaviorism. But, more importantly, the reasons he gave for his behaviorism are not the typical philosophical reasons: he championed a moderate form of behaviorism not because of typical semantic reasons<sup>1</sup> but because he was, unlike most of his

---

<sup>1</sup> This statement needs qualification since Russell did champion a kind of semantic behaviorism, but his theory of semantics was a naturalistic one.

contemporaries, committed to a program of naturalistic epistemology.<sup>2</sup> In many ways, therefore, he anticipated Carnap's tendency toward a naturalistic epistemology and Quine's more explicit version. Interestingly, he also drew inspiration from the work of John Watson at a time when most philosophers were unaware of Watson's revolutionary and shocking proposals.

### The Nature of Philosophy

Bertrand Russell is famous for changing his philosophical views, sometimes in radical ways (Broad, 1924). Gilbert Ryle (1979) has said, in particular, that Russell was drawn toward two incompatible points of view—the transcendental and the empirical—and this is certainly true; he was drawn towards Platonism on the one hand and Naturalism on the other. But as Russell also insisted (Russell, 1959), his career can be seen as “a gradual retreat from Pythagoreanism” (p. 208), and this meant, in particular, a retreat from Platonism towards naturalism.

Philosophers typically classify Russell not only as an analytic philosopher but as one of the founders of analytic philosophy—and for good reasons, for one thing he always insisted upon throughout his long and changing philosophical career was that his method remained the same. This method was the *method of analysis*, or, as it is sometimes put, *the method of analysis-synthesis* (see Hintikka & Remes, 1974; Kitchener, 2000).

The method of analysis consists of two steps: first analyzing a phenomenon into its basic parts, and secondly synthesizing or re-constructing this original phenomenon. In the method of analysis one begins with something as a datum, e.g., the existence of scientific knowledge, and proceeds to infer the conditions making it possible. This inference occurs by means of *analysis*, which was traditionally thought to be the task of philosophy. The synthetic method, on the other hand, proceeds from these conditions to (deductively) inferring the original datum; this is the hallmark of the mathematical sciences. (In some places, however, Russell contrasts philosophy and mathematics, whereas in still other places he claims that philosophy subsumes both methods [see Kitchener, 2005]).

Russell employed this twofold method in the early decades of the twentieth century, attempting to reduce mathematics to logic (Russell, 1938) or show how mathematics could be *constructed* from logic (plus set theory). Russell applied this same technique to several other problems—the problem of reference or denotation (culminating in his famous theory of descriptions [Russell, 1905])—then to *the problem of our knowledge of the external world*. It is this latter problem, of showing how, beginning from one's initial sensory experience, it is possible to “construct” our scientific knowledge of the world, that marks the decisive move of Russell's towards a more naturalistic interpretation of epistemology.

---

<sup>2</sup> Russell did not, however, have a clearly articulated conception of naturalistic epistemology and naturalistic semantics. See Kitchener (2005).

### Scientific Philosophy

Traditional empiricism was concerned with our knowledge of the external world. Russell was, with some reservations, firmly committed to empiricism, and, hence, was continuing this older tradition. What was different about Russell's approach was his suggestion that *philosophy should become scientific*. The subtitle of his famous 1914 work *Our Knowledge of the External World is as a Field for Scientific Method in Philosophy*. Other manuscripts of this period contain a similar theme, the quest for what Russell called a *scientific philosophy*—in particular, a *scientific epistemology*—a new kind of philosophy that practiced the scientific method in its philosophizing.

In *Our Knowledge of the External World* Russell (1914/1993) set out a new conception of philosophy: philosophy was to become scientific by employing the scientific method, and for Russell this meant the method of analysis/synthesis. Russell's conception of this method was unclear, and he described it in different ways in different places, but he was groping for a new conception of philosophy. Philosophers should not, he insisted, be making empirical claims; this is the job of science. However, philosophers could be assisting science by advancing hypotheses to explain puzzling data, and these hypotheses could be subsequently checked empirically. An adequate hypothesis, Russell claimed, would explain the puzzling data; in doing this, philosophy was doing what science has always done—performing what some people (Harman, 1965; Lipton, 1991) have called *an inference to the best explanation*.

Russell applied this conception of scientific philosophy to epistemology, to our knowledge of the external world. This involved, first, analysis—the subject matter of his 1913 *Theory of Knowledge* manuscript (Russell, 1984)—then synthesis, the subject of his other epistemological work of this period, *Our Knowledge of the External World*.

Philosophy is to become scientific by using the scientific method. What this meant was not clearly and consistently stated by Russell. In various places Russell glosses this as: philosophy will appeal to empirical observation and experimentation to establish its results; it will utilize the results of the empirical sciences in tackling perennial epistemological problems; it will attempt to be precise and clear in arriving at definite answers to age-old questions; it will engage in specialized, detailed, piece-meal questions instead of advancing cosmic speculations about the whole of reality; and so forth. These, he claimed, are the traditional features of the scientific attitude and philosophy was to pursue its endeavors with these same attitudes.

### Russell's Naturalistic Epistemology

Throughout his long career Russell was strongly committed to a certain conception of the world and our knowledge of the world—what some individuals would call *scientism*—looking to science to answer questions about the nature of

the world, the mind, and knowledge. In setting out these views Russell also suggested that the traditional view of the nature of philosophy is mistaken

Russell was opposed, for example, to the notion of a “first philosophy”—a philosophy that provides the absolutely certain grounds or principles of everything else, including science. There is, Russell claimed, no philosophical standpoint higher than science from which to pronounce judgments upon its alleged results. “There is not any superfine brand of knowledge,” he said, “obtainable by the philosopher, which can give us a standpoint from which to criticize the whole of the knowledge of daily life” (1914/1993, p. 73).

Furthermore, philosophy cannot be radically separate from the empirical sciences (1959, p. 230). There may be a difference in degree between philosophy and science, but it is not a difference in kind. Philosophy differs from science only in degree of generality: the sciences are concerned with detailed and specialized questions about restricted domains, whereas philosophy is interested in the most general set of questions about the nature of things and how we know them, but there is no radical separation between the two. “Philosophical knowledge. . . does not differ essentially from scientific knowledge; there is no special source of wisdom which is open to philosophy but not to science, and the results obtained by philosophy are not radically different from those reached in science” (1931/1962, p. 239). There is, in short, a *continuity* between science and philosophy. For some contemporary thinkers these orienting attitudes are sufficient to mark Russell off as being committed to what we can call a *weak naturalistic epistemology*.

But more than this, Russell has views about the nature of epistemology that place him squarely in the tradition of a *strong naturalistic epistemology*, the kind of naturalistic epistemology advocated, for example, by Quine (1969). On this more radical interpretation, epistemology is reducible to psychology—behavioristic psychology (Kitchener, 2005). For individuals such as Quine and Russell, this stronger view derives from their reservations about the traditional methods of philosophy—as engaging in purely *a priori* methods, resulting in *analytic* (and/or necessary) propositions. At the very least, Russell had strong reservations about these notions. The same applies to the traditional assumption that epistemology is to be distinguished from science in being a normative endeavor.

Early in his career (beginning around 1918) Russell proposed a conception of epistemology that was naturalistic in spirit, in fact, a *behavioristic epistemology*. In the spirit of Russell’s views about the proper task of philosophical analysis being that of proposing hypotheses, Russell advanced the thesis that *knowledge can be construed in a behaviorist way*. As Russell explored the tenability of this research program he subjected it to criticisms and to conceptual clarification, leading him to conclude that it was ultimately untenable or overambitious.

## Russell's Program of Behavioristic Epistemology

### *Russell's Behavioristic Epistemology*

Russell's initial foray into epistemology occurred in 1913 with a prolific epistemological output: *Our Knowledge of the External World* (1914/1993), various epistemological articles in *Mysticism and Logic* (1917/1957), and a book manuscript on epistemology (1984), several chapters of which were published as journal articles. Then there occurred the hiatus of the war; after a brief interval (1914-1918) Russell reported that he returned to epistemology in 1918: "I found my thoughts turning to theory of knowledge and to those parts of psychology and of linguistics which seemed relevant to that subject. This was a more or less permanent change in my philosophical interests" (1959, p. 128).

It was during this period that Russell began reflecting more seriously upon Wittgenstein's criticisms of Russell's earlier (1912) theory of judgment. Russell had no satisfactory answer to Wittgenstein, hence no adequate theory of judgment, but Russell believed that an adequate account of "facts, judgments and propositions" would have to contain a psychological account because a theory of judgment was about the nature of belief and this was, at bottom, a psychological question. In a letter to his brother (July 8, 1918), Russell says that it was for the sake of "facts, judgments and propositions. . ."

that I wanted to study behaviorism, because the first problem is to have a tenable theory of judgment. . . . All the psychology that I have been reading and meaning to read was for the sake of logic; but I have reached a point in logic<sup>3</sup> where I need theories of (a) judgment (b) symbolism, both of which are psychological problems. (quoted in Slater, 1986, p. 249)

In a later work (Russell, 1919/1956) he said: "I think that the notion of meaning is always more or less psychological, and that it is not possible to get a purely logical theory of meaning nor therefore of symbolism" (p. 186). Russell's first foray into his new psychological phase occurred in 1918 in his famous

---

<sup>3</sup> Here one is reminded of Skinner's (1948) views on this same question. Russell had a strong influence on Skinner (Skinner, 1976, 1979, 1983). The signal work of Russell here was his *An Outline of Philosophy* (Russell, 1927/1995), which seems to have been the stimulus for Skinner's project of a "Sketch for an Epistemology." If we are to believe Skinner, his operant research program was driven by his psychologistic epistemology. Skinner also read Russell's *Inquiry into Meaning and Truth* (1940/1995), which Skinner conceived to be a kind of precursor to his *Verbal Behavior* (Skinner, 1957). As far as I know, no one has pursued the connection between Russell's naturalistic epistemology and Skinner's naturalistic epistemology, nor (for that matter) the connection between Skinner's naturalistic epistemology and Quine's naturalistic epistemology. Alan Costall reminded me that both Quine and Skinner were Junior Fellows at Harvard during the 1930s (see also Malone, 2001). From reading Skinner's autobiography, a likely hypothesis is that it was Skinner who put Quine on the latter's naturalistic path. If so, then the stages of this psychologistic naturalistic epistemology were: Russell→Skinner→Quine.

## BERTRAND RUSSELL'S FLIRTATION WITH BEHAVIORISM

lectures on Logical Atomism (Russell, 1918-1919/1994). Here, for the first time, we have Russell referring to behaviorism (p. 219), but ascribing it to James (1912) and Dewey (1916/1953), with no mention of Watson.<sup>4</sup> James and Dewey, Russell claims, deny the existence of belief (as Russell's understood the notion—as what he would later call a propositional attitude). Since the passage is important I will quote it:

They [James and Dewey] use the word “believe” but they mean something different. You come to the view called “behaviourism,” according to which you mean, if you say, a person believes a thing, that he behaves in a certain fashion; and that hangs together with James' pragmatism. James and Dewey would say: when I believe a proposition that *means* that I act in a certain fashion, that my behaviour has certain characteristics, and my belief is a true one if the behaviour leads to the desired result. (1918-1919/1994, p. 219)

If one believes “that there is a train at 10:25,” this means “that you start for the station at a certain time. When you reach the station you see it is 10:24 and you run. That behaviour constitutes your belief that there is a train at that time” (Russell, 1918-1919/1994, p. 220). James and Dewey thus think of belief (and knowledge) as a thing, and although Russell concedes that this “behaviouristic” account might seem feasible to some, it is not feasible to him.

In the meantime (May 1918) Russell had gone to prison for his political views. While there, during the spring, he began seriously reading psychology, in particular behaviorism. John Slater (1986) writes: “Russell did not begin studying behaviourism until the spring of 1918” (p. 250). In a letter of April 9, 1918, an acquaintance of Russell said: “friends are collecting all the recent literature on ‘Behaviourism’ which is the subject he appears to have chosen for study in prison” (Slater, 1986, p. 250). This initial prison reading of behaviorism included Watson's *Behavior: An Introduction to Comparative Psychology* (Watson, 1914), “Psychology as the Behaviorist Views it” (Watson, 1913), and “An Attempted

---

<sup>4</sup> The course of lectures from which this published work derived and in which Russell mentioned behaviourism was given in early 1918 at a London gathering immediately before he went to prison. At about this same time (1919) Russell wrote a review of Dewey's *Essays in Experimental Logic* (Dewey, 1916/1953). Russell quotes a passage from Dewey in which Dewey refers to his instrumentalism as a “behavioristic theory of thinking and knowing. It means that knowing is literally something which we do” (1916/1953, pp. 331-332). Dewey's 1916 work contained his earlier chapters (Dewey et. al., 1903), some of which were rewritten for the 1916 book. Although Dewey (1916/1953) does not explicitly mention Watson's new behavioristic approach (nor does the 1903 work), Dewey did write a response to it (Dewey, 1914). It seems likely, therefore, that Russell got the concept of “a behaviorist theory of thinking and knowing” originally from Dewey (and perhaps to a lesser extent from James). Thanks to Rod Wozniak for the suggested link to pragmatism.

Formulation of the Scope of Behavior Psychology” (Watson, 1917).<sup>5</sup> It also included several non-behavioristic works.

Russell wrote down what psychological works he read during his brief tenure in prison (Russell, 1918/1986). This list includes several works in animal psychology (e.g., Washburn), but not Thorndike, Pavlov, or Köhler. Overall, he cites 48 “philosophical books,” of which 44 are in psychology. This “psychological turn” was to occupy Russell for a considerable period of time.

The key issue confronting Russell during the time he spent in prison concerned the evaluation of behaviorism as a plausible account of the mind, especially its theory of cognition. As a philosopher Russell was interested in a particular set of questions: could behaviorism handle thinking, belief, and language (together with the issue of “imageless thought”<sup>6</sup>)? Could one dispense with consciousness altogether? Is introspection a distinct psychological method?, etc.

Russell’s first extensive discussion of behaviorism appeared in “On Propositions” (1919/1956). Here, the central question for a behavioristic approach was: “Is introspection a source of knowledge” (letter to Gladys Rinder, June 17, 1918). In this article Russell discusses behaviorism—Watsonian behaviorism—in considerable detail, partly because Russell sees “the problem of meaning” as a psychological problem. “Since language is an observable phenomenon,” Russell says, “and since language has a property which we call ‘meaning,’ it is essential to behaviourism to give an account of ‘meaning’ which introduces nothing known only through introspection” (1919/1956, p. 291). Russell is quite willing to accept a *causal theory of meaning*, but it will have to incorporate the crucial role of images—what he calls “image propositions.” We typically think in images, Russell suggested, and this means we think in terms of image-propositions, which are more basic than word propositions. However, an image is unlike a sensation because the referent of a sensation normally exists in the external world as its cause, but the referent of an image—its cause—does not. Because Watson denied the existence of images, it was essential for Russell’s semantics and epistemology to counter this claim; this he consistently does throughout the rest of his career.<sup>7</sup>

The next major work to appear on these themes was Russell’s *The Analysis of Mind* (1921). In this work Russell’s defends a version of neutral monism and (again) a modified form of behaviorism. This is the work that most philosophers mention when discussing Russell’s views about the nature of the mind and the nature of psychology. Typically this work is described as a defense of neutral monism, the view that Russell had earlier severely criticized. Russell did a kind of about face here and now defends the view (although in a form somewhat different from other neutral monists such as Mach, James, Holt, and Perry). Roughly,

---

<sup>5</sup> Later, Russell read Watson (1919, 1924; Watson & Watson, 1928) together with several of his articles.

<sup>6</sup>As his list of prison reading indicates, Russell was aware of this historical controversy, but he referred to it infrequently, dismissing it cavalierly as of little importance (1921, p. 226).

<sup>7</sup> An important issue that has not been discussed up to now concerns the Watson–Russell debate on images. Unfortunately, space limitations prevent me from pursuing it.

Russell's neutral monism is the view that mind and matter do not differ in terms of their underlying substance—hence Descartes was wrong, for ultimately both mind and matter are reducible to a third category—a neutral “stuff,” which Russell variously terms “events,” “sensations,” or “percepts.” The basic claim is that the mental realm is to be distinguished from the material realm in terms of how these more primitive neutral elements are grouped together in terms of their respective causal laws, e.g., the law of gravity versus the law of association.

*The Analysis of Mind* is a complex work, a defense not only of neutral monism but also (again) a qualified defense of behaviorism. It is Russell's central contention in this work that everything mental can be reduced to sensations and image, which are to be distinguished in terms of their respective causal laws. A sensation-event is the subject of both physical laws and mental laws, but an image-event is the subject only of psychological laws—mnemonic causation. It was this work that was the showcase for a famous debate between Russell and Watson on the nature of the mind. Because of this, something (briefly) should be said about the relation between Russell and Watson.

### Russell and Watson

The influence of Watson upon Russell and a history of their association remains to be written. As I mentioned, Russell read many of Watson's works. In addition, Russell thanked Watson for reading the manuscript that was to become *The Analysis of Mind* (presumably some time in 1920). Watson reviewed this book in *The Dial* in 1922 (Watson, 1922), and Russell and Watson corresponded about these and related matters. We have, however, only Watson's letters to Russell.<sup>8</sup> In addition, Russell and Watson crossed the Atlantic together (in 1929); Russell wrote to his wife, Dora (October 28, 1929), about his somewhat negative impressions of Watson on this voyage (Griffin, 2001, p. 286).

Russell and Watson were (largely) in agreement about the methodological aspects of the behavioristic program: psychology should become an objective science by studying external, public behavior (Russell would have added “whenever possible”). Much that passed for scientific psychology had to be rejected, etc. But, once again, the major bone of contention separating them concerned the question of whether mental images existed and were accessible to introspection. Russell needed such a construct for his theory of meaning and argued that the existence of images could be confirmed on empirical grounds; Watson claimed that any alleged images were just “faint sensations” and subvocal speech. In his review of Russell, Watson (1922) says:

The behaviourist feels no need of images, either for memory or for thought—holding that the faint throat, chest, and laryngeal movements [. . .] actually constitute thought—recollection, conception, and imagery. In other words, that

---

<sup>8</sup> These are housed in the Bertrand Russell Archives at McMaster University (Hamilton, Ontario).

these acts differ from tennis playing only by virtue of the fact that the muscles that are at work are concealed from the observation of the observer. (p. 98)

Contrary to Russell, Watson believes that the image, just like the sensation, does have a proximal physical cause—a sense organ stimulation external to the nervous system—hence that these are not centrally aroused.

In a letter to Russell (January 5, 1922) Watson softens his stand on mental images, claiming that “there is no question but that you have forced me to make an admission about the ‘image’ which. . . I had known for some time that I would have to make” (quoted in Buckley, 1999, p. 149)—apparently that there are, after all, central states; but he had wanted to avoid, he admitted, dealing with such problems as the image until he “had forced psychologists away from their old point of view” (ibid, p. 149). His solution to this problem was to admit that there are such central states but that they could be explained in purely physiological terms, e.g., retinal stimulation (Watson, 1922). In effect, therefore, taking a page from Russell’s own book, Watson argued for an interpretation of such sensations and images in terms of Russell’s neutral monism.<sup>9</sup> For his part, Russell would deny that sensations and images could be analyzed in the same way, that images were unlike sensations in that they had purely psychological laws governing their causal course. Because of this Russell eventually had to modify his own views in rather radical ways, leading him to question classical materialistic views.

Russell’s next foray into behaviorism occurred in what is (arguably) Russell’s most behavioristic work—*An Outline of Philosophy* (1927/1995). In this work Russell takes up a theme he had introduced earlier in *The Analysis of Mind*—a behavioristic epistemology. In his later works (1940/1995, 1948/1992) Russell became progressively less behavioristic, although he never completely denied much of the core of behaviorism. When, then, was this core?

### **Russell’s Behavioristic Epistemology**

Russell’s precise conception of a behavioristic epistemology changed somewhat over the years, but the underlying idea remained the same: a behavioristic epistemology takes up a third-person perspective on knowledge, not a first-person perspective.

One can approach epistemology, Russell contends, either from what we would now call an *externalist* perspective or an *internalist* perspective. “Knowledge, traditionally, has been viewed from within, as something which we observe in ourselves rather than as something which we see others displaying” (1927/1995, p. 14). Instead of this traditional, Cartesian view, Russell suggested that knowledge could be viewed from an external perspective—“man from without” (1921, pp. 28-29; 1927/1995, p. 14, Ch 8; 1940/1995, pp. 12-13). A behavioristic epistemology would be a theory about the knowledge that other

---

<sup>9</sup> In this regard it is interesting to note that a common criticism of Gilbert Ryle’s philosophical behaviorism (1949) is his denial or neglect of mental images (see Russell, 1959, pp. 245-254).

organisms (including people) possess and it would not rely upon introspection. Presumably, after having constructed a theory of the “knowledge of the other guy,” one would then apply this theory to one’s own knowledge. Although Russell ultimately came to the conclusion that a first-person (internalist) epistemology was needed in addition to a third-person (externalist) epistemology, he never abandoned the notion that part of the epistemological project could be pursued in a behavioristic way. How one can reconcile these two epistemological projects remains unclear (see, however, Kitchener, 2005, for a suggestion). How far, then, can one push such a behavioristic epistemology?

First, according to this naturalistic epistemology, knowing and knowledge are to be taken as natural states of the world. “The world, as presented by science, contains a phenomenon called “knowing,” and theory of knowledge. . .has to consider what sort of phenomenon this is” (1940/1995, pp. 12-13). Knowledge is a naturalistic phenomenon, observable by the senses and studied like any other natural phenomenon by science (in this case, psychology). However, the kind of psychology most relevant here was behavioristic psychology. In one sense knowledge exists as a state of the knower, as a behavioral disposition to act in certain kinds of ways in certain kinds of environmental situations in order to obtain certain kinds of goals. Given this conception of knowledge, humans are not different in kind from animals and human knowledge is not radically different from animal knowledge.

Second, Russell is at pains to point out that “knowledge” is vague. It can mean different kinds of things, or (to put it somewhat differently) there are several different kinds of knowledge: knowing how to do something, perceiving something, knowing the meaning of words, etc. At the very least, a behavioristic account would seem to be a promising approach to take with respect to the kind of knowledge animals have. It seems obvious, Russell claims, that animals can be said to “know” certain kinds of things, e.g., that A is a means to B, when “desiring B, it performs the act A” (1918-1919/1956, p. 256). This kind of knowledge—knowing how—is also possessed by humans, but the question is whether this is the only kind of knowledge, or (put somewhat differently), can all cases of knowledge be shown to be examples of this kind of knowledge? Russell’s answer here was “no,” but before he drew that conclusion he proceeded to give an analysis of this particular kind of knowledge.

His most sophisticated accounts of a behaviorist epistemology occur in *The Analysis of Mind* and *An Outline of Philosophy*; unfortunately, the accounts differ considerably. In *The Analysis of Mind* (1921), for example, he argues that although knowledge is (at least partly) an observable phenomenon seen in the public behavior of organisms, and although this behavior can be explained psychologically, it is not a simple mechanistic, reflex-like phenomenon. Although one might think that the knowing subject is like a scientific instrument in certain ways, causally tuned to the environment and responding to its input, this is inadequate, Russell claims, as a complete model of knowledge. In order for an instrument to be an appropriate model for a knower it must possess two properties: *accuracy* and *appropriateness*. An instrument is *accurate*, Russell suggests, when

it gives different responses to stimuli that differ in relevant ways and it gives the same response to stimuli that do not differ in relevant ways (1921, p. 256). Secondly, a behavioral response is *appropriate* when it is suitable for realizing the system's purpose. The notion of purpose (desire, motivation) was crucial, Russell thought, if one was to give an adequate behavioristic account of knowledge. The basic idea here is to give a behavioristic account of desire and purpose: an organism has a purpose or a goal when its behavior shows certain kinds of observable properties—*persistence until* a particular state of affairs is reached, *variability* and *plasticity* of behavioral means, compensatory adjustments, etc. An instrument can be said to be accurate, but it is less clear that it can be said to show appropriate behavior. In any case, full knowledge cannot be analyzed as simple, reflex-like behavior. The kind of instrument Russell had in mind here was pretty simple—certainly nothing like the torpedo model of Rosenblueth, Wiener, and Bigelow (1943).<sup>10</sup>

In *An Outline of Philosophy* (1927/1995) Russell's account is somewhat different. If knowledge is to be analyzed in terms of a *causal theory of knowledge*—and this is Russell's preferred account—we must imagine that it is the entire causal chain from external objects to sense organs to brain to motor muscles to environmental objects. Russell proceeds to suggest that there are several levels or kinds of knowledge to be found here. First, since we have to concede that knowledge exists “in some degree, wherever there is a characteristic reaction to a stimulus of a certain kind” (1927/1995, p. 70), then we have knowledge embodied in automatic reflexes. This is not a significant level of knowledge, however, for it is surely animal learning that represents a higher kind of causal knowledge. In this case (as he puts it later), “We may say, broadly, that a response to a stimulus of the kind involving desire. . . shows ‘knowledge’ if it leads by the quickest or easiest route to the state of affairs which. . . is behaviouristically the object of desire” (1940/1995, p. 73). Finally, we have the case of distinctively human knowledge that occurs at an even higher level of knowledge.

In this same work Russell also discusses what he earlier called an “internal” perspective on a theory of knowledge, which he also tends to equate with a Cartesian-type epistemology. We have, he says, two different approaches, and although the externalist one can be developed along promising lines, it is ultimately the first-person epistemological point of view that is superior to the third-person account. Such an account is needed in order to give an account of certain kind of human knowledge, those involving higher-order cognition and images—what we would today call “propositional” knowledge or reflective human knowledge. Since behaviorism rejects such an internal, introspective point of view and denies the validity of self-observation, it must be judged to be inadequate as a *complete* account of epistemology (but, on the other hand, so must Cartesian epistemology).

---

<sup>10</sup> Thanks to John Staddon for reminding me of this important article, with which Russell (apparently) was not acquainted.

These views of Russell's continue to be present with little modification in *An Inquiry Concerning Meaning and Truth* (1940/1995) and *Human Knowledge* (1948/1992). In both texts there is the same discontent with the radical interpretation of behaviorism; if anything, Russell becomes even more critical of behaviorism. For example, there is no mention of Watson in these latter works, nor any sustained discussion of behaviorism. In *Human Knowledge* behaviorism now seems to him to be absurd (1948/1992, p. 59), with Russell giving primacy to introspection and the first-person point of view, for "everything that can be observed is private to the individual" (p. 58). The epistemological problem is now how to infer anything epistemic from such immediate, private sensations.

Any behavioristic theory of knowledge encountered difficulties from the very beginning; this is certainly true of Russell's version, something requiring him to qualify and to elaborate upon his earlier account in a variety of ways. As I mentioned previously, he had to introduce the behavioristic counterpart to a *desire* or *goal*.<sup>11</sup> It was also part of Russell's program of behavioristic epistemology to provide behavioristic analyses of all key cognitive-epistemic states—*belief*, *memory*, *perception*, *intention*, *meaning*—and other epistemic concepts or conditions, e.g., *truth*, *evidence*, *verification*, *meaning*, which meant (for Russell) adopting a *causal* theory<sup>12</sup>

Russell did not believe, however, that a behavioristic account of knowledge was a full and complete account; instead, it had to be supplemented by an account of our inner life, our introspective awareness of our beliefs, internal sensations, and images, etc. Nevertheless, he did believe that such a third-person account would go a long way toward providing an adequate naturalistic account of knowledge. The remainder—the "inner" account—could not be handled behavioristically, Russell claimed (for reasons that are not very compelling<sup>13</sup>). Russell seems to have systematically ignored all of the objections to introspection that he had read during his sojourn in prison. Whether Russell thought (or would have thought) that introspection and the existence of images could be handled naturalistically but not behavioristically remains unanswered since he never explicitly considered that possibility (although I believe that his naturalism would have forced him to the obvious conclusion).

---

<sup>11</sup> Russell's account of purposive (or goal-directed) behavior has fundamental similarities to other accounts of this period, e.g., Tolman (1920), Holt (1915), Perry (1917), and even McDougall (1920) (for a discussion, see Kitchener, 1977). Russell was well acquainted with the works of Holt and Perry; in particular, he cites Holt, et. al. (1912), Holt (1914), and Perry (1912). Russell was (as they put it) the "big brother" of American neo-realists, but Russell's later naturalistic phase was not seized upon by most of these neo-realists. No one, as far as I know, has explored the historical relation between Russell and American neo-realism, critical realism, and naturalism.

<sup>12</sup> For example: "A sentence of the form 'this is A' is. . . 'true' when it is caused by what 'A' means" (Russell, 1948/1992, p. 134); and a belief is verified when it arouses an expectation followed by a feeling of "ah, yes."

<sup>13</sup> As he himself points out, it is true that mental states are private to me, but it is also true that certain bodily states are private to me.

### Russell's Behaviorism

Russell's flirtation with behaviorism was a relatively long affair. He came to recognize certain of her flaws and to tire of her, but he never could see his way clear to abandon her completely. If behaviorism—Watson's behaviorism—could be amended to allow for the internal realm, would Russell have been even more positive about it? Would he have been more favorably impressed with neo-behaviorism, perhaps Skinner's operant behaviorism? Would Russell have been positively inclined toward Quine's program of epistemological behaviorism?<sup>14</sup>

However we answer these questions, an important question we have not addressed up to now is: What kind of behaviorism did Russell have? Was it a philosophical behaviorism or a psychological behaviorism?<sup>15</sup> Philosophical behaviorism is usually conceived to be a view about the meaning of mentalistic terms—*semantic behaviorism*. According to this view, set out, for example, by Fodor (1965), there must be a conceptual, logical, or semantic connection between every mentalistic predicate and a set of terms describing external, observable behavior: *necessarily, for each mental predicate. . . there must be [a] description of behavior to which it bears a logical relation* (p. 51).<sup>16</sup>

Although Fodor is not always clear about it, we should remember that philosophical behaviorism can be interpreted as a thesis about the (semantic) or logical relation between words (e.g., "water" is "H<sub>2</sub>O"), a relation between a word and a property (e.g., "water" is H<sub>2</sub>O), or between properties (e.g., water is H<sub>2</sub>O). Fodor's radical behaviorism is a conception about the relation between words: "mental words are literally definable in behavioral terms" (1965, p. 50). This is the thesis of physicalism (Kitchener, 1999), whereas Wittgenstein's kind of behaviorism may be interpreted as asserting a word–thing relation ("a mental term requires behavioral criteria"); it may also, however, be interpreted as a thing–thing relation; the use of a mental term requires a particular kind of behavioral property. This is sometimes called analytical behaviorism. A third kind of philosophical

---

<sup>14</sup> Russell appreciated Quine's work on logic very much but apparently was not acquainted with Quine's later epistemological views (Quine, 1969). Quine, however, appreciated Russell's naturalistic turn.

<sup>15</sup> If Quine (1951) is correct, then the traditional distinction between psychological behaviorism and philosophical behaviorism must be eliminated or weakened. This is illustrated rather clearly in the case of Russell's behaviorism, which cannot be nicely fitted into either of these traditional categories. The same is true, it would seem, of Watson, Hull, Tolman, and Skinner on the one hand and Ryle, Wittgenstein, Strawson, Carnap, Hempel, and Feigl on the other.

<sup>16</sup> Fodor distinguishes two different kinds of behaviorism: *radical behaviorism* maintains that every mental predicate is *definable* in terms of behavioral predicates—where the definability relation represents some kind of *analytic* connection—whereas *weak behaviorism* maintains that for every mental predicate there is a set of behavioral predicates such that the latter is a necessary condition, a sufficient condition, or a necessary and sufficient condition for the former.

behaviorism is a claim about the identity of two properties or states, e.g., John Watson famously claimed that *thinking was subvocal speech*. We might call this ontological behaviorism. One might include any of these types of philosophical behaviorism under semantical behaviorism, depending on one's theory of semantics and definition.

I believe it is correct to say that Russell's version of philosophical behaviorism is (primarily) the claim that *mentalistic properties are equivalent to behavioristic properties*, not just about the relation between mentalistic terms and behavioristic terms. In effect, therefore, Russell was saying that *a belief is an image + feeling*. He did not, as many of his successors did, take the linguistic turn and engage in semantic ascent, e.g., physicalism or analytic behaviorism. He was, in short, an ontological behaviorist—but he was also a psychological behaviorist since he believed that philosophy (epistemology) was inseparable from science (psychology); hence epistemology was tied to psychology and to the research methods employed in psychology. This is clearly exemplified in Russell's commitment to Watson's empirical research program (and related ones, e.g., Pavlov's).

Watsonian behaviorism is not the only kind of psychological behaviorism, of course. This suggests that there might be other kinds of psychological behaviorism that are more congenial to Russell's way of thinking, and here I think it is Skinner's radical (operant) behaviorism that takes pride of place.

I believe it is clear from Skinner's autobiography (Skinner, 1976, 1979, 1983) that his psychological behaviorism was intimately tied to his naturalistic epistemology. Early in his career (around 1922) Skinner said that Russell converted him to behaviorism and to a behavioristic epistemology—Skinner's "Sketch for an Epistemology." This occurred as a result of reading Russell's review (Russell, 1926) of Ogden and Richard's book (1923). The latter work proposed a causal theory of meaning, one that Russell endorsed and one that Skinner also endorsed (although in slightly different form). Such a program of providing a causal account of meaning was the centerpiece of Russell's *An Inquiry Concerning Meaning and Truth* (1940/1995); Skinner clearly says (1979, p. 324) that what Russell was doing in this work was precisely what Skinner would be doing in *Verbal Behavior* (Skinner, 1957). Such an "analysis" or "interpretation" was part of Skinner's original program outlined in his "Sketch for an Epistemology," which included, as a crucial part, a naturalistic semantics and an operant analysis of the contingencies of reinforcement. This would include a causal analysis of what philosophers would call "meaning" and even the rules of logic. Russell (earlier) had come to a similar conclusion not only about a causal theory of meaning, but even that, in some sense, logic itself could be given a causal interpretation. Russell suggested (1919/1956) the possibility of what he called "a behavioristic logic. . . starting with the definition that two propositions are logically incompatible when they prompt bodily movements which are physically incompatible" (1919/1956, p. 311). Such a behavioristic logic would include a behavioristic account of the logical connectives, e.g., "or" corresponds to a state of hesitation (1940/1995, p. 84; 1948/1992, p. 143). (What such a behavioristic logic

amounted to and how it was connected to Russell's more standard theory of logic are questions demanding attention.) This behavioristic logic was clearly part of Russell's naturalistic (behavioristic) epistemology, a program that anticipated Skinner's naturalistic (behavioristic) epistemology and Skinner's behavioristic logic. In fact, one is easily drawn to conclude that Skinner's behaviorism is the completion of Russell's behavioristic program.

### Conclusion

I have been sketching Russell's flirtation with behaviorism and his attempt to construct a behavioristic epistemology. Both of these, I have suggested, spring from a certain conception of philosophy, one that we would today liken to naturalistic philosophy and naturalistic epistemology. Russell's latent naturalism led him to take the new approach of psychological behaviorism seriously because Russell believed that philosophers should always do their work in conjunction with the best science they could find. In his case this meant looking to psychology for a psychological account of the nature of belief (and knowledge), in particular, behavioristic psychology. There were reasons he picked behavioristic psychology instead of other kinds of psychology; if he were alive today his preference might be for cognitive psychology. I have also pointed out the numerous times that Russell pulled up short from completely endorsing a psychological behaviorism. He always had some reservations about behaviorism, and these reservations shifted somewhat over the years. At one point, for example, his reservations seemed to be that behaviorism is committed to materialism but that materialism is no longer an adequate approach. This did not mean, however, that Russell abandoned naturalism for a supernaturalism; this could hardly be an option for him. It did mean, however, that one could not be a crude or naïve materialist given the recent turn of events in physics. Hence, even though matter might not be any longer materialistic, this was still consistent with a kind of naturalism that attracted Russell. So, even if behaviorism was inadequate because of its treatment of images, and even if introspection is sometimes a valid method, and even if the basic stuff of the world is "sensations," none of this required a non-naturalistic approach to philosophy. One might scuttle behaviorism because it is not an adequate approach to a naturalistic epistemology, but Russell would have looked for a different version of psychology. I see no reason to conclude, however, that he would have given up his attraction for naturalism, nor that he would have turned toward a more traditional philosophy. Russell's flirtation with behaviorism may have been a short affair, but it was rooted in a longing for a naturalistic companion.

There are numerous discussions of behaviorism, both philosophical and psychological, in contemporary textbooks. The list of philosophical behaviorists typically includes Ryle, Wittgenstein, Hempel, and Carnap, but there has been very little recognition of the existence of Russell's behaviorism and certainly nothing like a complete discussion of it. Furthermore, even if Russell's behaviorism is acknowledged, there is scant recognition that its underlying basis was a version of naturalistic epistemology. This is one more example of a naturalistic epistemology

issuing in a program of behaviorism; along with Russell, one could cite others such as Skinner and Quine. One can even make the argument (Kitchener, 2004) that this also applies to Carnap.

According to such a program, knowledge consists of a natural state, and epistemic concepts (evidence, confirmation, truth, probability, theory choice) are to be analyzed naturalistically. What such analyses involve is far from clear, but we have some tentative ideas with notions such as causality, law-like regularity, reliabilism (the view that something is knowledge if it is produced by a reliable procedure), counterfactual statements, information transfer, teleological functions, etc. playing important roles. Such accounts are not limited to behavioristic approaches obviously, since these notions lie at the heart of contemporary attempts in cognitive science to naturalize semantics (Kitchener, 1999). This is not surprising since cognitivism had its roots in behaviorism and can even be interpreted as a kind of (theoretical) behaviorism. Skinner—famously—declined to endorse such cognitivism and so did Quine (to a certain extent). Whether or not Russell would have also done so remains unclear. In any case, Russell's flirtation with behaviorism marks a period in the history of analytic philosophy and the history of behaviorism that is in need of serious examination. What I have suggested here is just the first step toward such an analysis.

### References

- Broad, C. D. (1924). Critical and speculative philosophy. In J. H. Muirhead (Ed.), *Contemporary British philosophy: Personal statements* (first series, pp. 75-100). London: G. Allen & Unwin.
- Buckley, K. W. (1999). *Mechanical man: John Broadus Watson and the beginnings of behaviorism*. New York: Guilford Press.
- Dewey, J., et. al. (1903). *Studies in logical theory*. Chicago: University of Chicago Press.
- Dewey, J. (1914). Psychological doctrine and philosophical teaching. *Journal of Philosophy*, 10, 505-511.
- Dewey, J. (1916/1953). *Essays in experimental logic*. New York: Dover.
- Fodor, J. (1965). *Psychological explanation*. New York: Random.
- Griffin, N. (Ed.) (2001). *The selected letters of Bertrand Russell: The public years, 1914-1970*. London: Routledge.
- Harman, G. (1965). The inference to the best explanation. *The Philosophical Review*, 74, 88-95.
- Hintikka, J., & Remes, U. (1974). *The method of analysis: Its geometrical origin and general significance*. Dordrecht: D. Reidel.
- Holt, E. B., et. al. (1912). *The new realism*. New York: Macmillan.
- Holt, E. B. (1914). *The concept of consciousness*. New York: Macmillan.
- Holt, E. B. (1915). *The Freudian wish and its place in ethics*. New York: Henry Holt.
- James, W. (1912). *Essays in radical empiricism*. New York: Longmans, Green & Co.
- Kitchener, R. F. (1977). Behavior and behaviorism. *Behaviorism*, 5, 11-72.
- Kitchener, R. F. (1994). Semantic naturalism: The problem of meaning and naturalistic psychology. In W. F. Overton & D. S. Palermo (Eds.), *The nature and ontogenesis of meaning* (pp. 279-294). Hillsdale, NJ: Lawrence Erlbaum.

## KITCHENER

- Kitchener, R. F. (1999). Logical behaviorism and the foundations of psychology. In W. O'Donohue & R. Kitchener (Eds.), *Handbook of behaviorism* (pp. 399-418). San Diego, CA: Academic Press.
- Kitchener, R. F. (2000). *Holism: An analytical approach*. Unpublished manuscript.
- Kitchener, R. F. (2004). Logical positivism, naturalistic epistemology, and the foundations of psychology. *Behavior and Philosophy*, 32, 37-54.
- Kitchener, R. F. (2005). *Bertrand Russell's naturalistic epistemology*. Manuscript submitted for publication.
- Lipton, P. (1991). *Inference to the best explanation*. London: Routledge.
- McDougall, W. (1923). *Outline of psychology*. New York: Charles Scribner's.
- Malone, J. C. (2001). Ontology recapitulates philology: Willard Quine, pragmatism, and radical behaviorism. *Behavior and Philosophy*, 29, 63-74.
- O'Donohue, W. & Kitchener, R. (Eds.) (1999). *Handbook of behaviorism*. San Diego, CA: Academic Press.
- Ogden, C.K., & Richard, I. A. (1923). *The meaning of meaning*. New York: Harcourt.
- Perry, R. B. (1912). *Present philosophical tendencies*. New York: Longman & Green.
- Perry, R. B. (1917). Purpose as tendency and adaptation. *Philosophical Review*, 26, 477-495.
- Quine, W. V. O. (1951). Two dogmas of empiricism. *Philosophical Review*, 60, 20-43.
- Quine, W. V. O. (1969). Epistemology naturalized. In W. V. O. Quine (Ed.), *Ontological relativity and other essays* (pp. 69-90). New York: Columbia University Press.
- Rosenblueth, A., Wiener, N., & Bigelow, J. (1943). Behavior, purpose, and teleology. *Philosophy of Science*, 10, 18-19.
- Russell, B. (1905). On denoting. *Mind*, 14, 479-493.
- Russell, B. (1912). *The problems of philosophy*. London: William & Norgate.
- Russell, B. (1914/1993). *Our knowledge of the external world as a field for scientific method in philosophy*. London: Routledge.
- Russell, B. (1917/1957). *Mysticism and logic*. New York: Doubleday.
- Russell, B. (1918/1986). Appendix III: Philosophical books read in prison [1918]. In J. Slater (Ed.), *The collected papers of Bertrand Russell. Vol. 8: The philosophy of logical atomism and other essays 1914-19* (pp. 315-328). London/Boston: George Allen & Unwin.
- Russell, B. (1918-1919/1994). The philosophy of logical atomism. *The Monist*, 28, 495-527; 29, 32-63, 190-222, 345-80. Reprinted in R. C. Marsh (Ed.), *Logic and knowledge: Essays* (pp. 175-282). London: Routledge.
- Russell, B. (1919/1956). On propositions: What they are and how they mean. *Aristotelian Society, Supplementary Volume*, 2, 1-43. Reprinted in R. C. Marsh (Ed.), *Logic and knowledge: Essays 1901-1950* (pp. 283-320). London: Routledge.
- Russell, B. (1921). *The analysis of mind*. London: Allen & Unwin.
- Russell, B. (1926). Meaning of meaning. Review of Ogden & Richards' *Meaning and meaning*. *Dial*, 81, 114-121.
- Russell, B. (1927/1995). *An outline of philosophy*. London: Routledge.
- Russell, B. (1931/1962). *The scientific outlook*. New York: W. W. Norton.
- Russell, B. (1938). *The principles of mathematics* (2nd Ed.). New York: W. W. Norton.
- Russell, B. (1940/1995). *An inquiry into meaning and truth*. London: Routledge.
- Russell, B. (1948/1992). *Human knowledge: Its scope and limits*. London: Routledge.
- Russell, B. (1959). *My philosophical development*. New York: Simon & Schuster.
- Russell, B. (1984). *Theory of knowledge: The 1913 manuscript* (E.A. Eames, Ed.). London/New York: Routledge.
- Ryle, G. (1949). *The concept of mind*. London: Hutchinson.

## BERTRAND RUSSELL'S FLIRTATION WITH BEHAVIORISM

- Ryle, G. (1979). Bertrand Russell: 1872-1970. In G. W. Roberts (Ed.), *Bertrand Russell memorial volume* (pp. 15-21). London: George Allen & Unwin.
- Skinner, B. F. (1948). The operational analysis of psychological terms. *Psychological Review*, 52, 270-277, 291-294.
- Skinner, B. F. (1957). *Verbal behavior*. New York: Appleton-Century-Crofts.
- Skinner, B.F. (1976). *Particulars of my life*. New York: Alfred A. Knopf.
- Skinner, B. F. (1979). *The shaping of a behaviorist*. New York: Alfred A. Knopf.
- Skinner, B. F. (1983). *A matter of consequences*. New York: Alfred A. Knopf.
- Slater, J. G. (1986). Manuscript notes [1918]. In J. G. Slater (Ed.), *The collected papers of Bertrand Russell. Vol. 8: The philosophy of logical atomism and other essays 1914-19* (pp. 247-251). London/Boston: George Allen & Unwin.
- Smith, L. (1986). *Behaviorism and logical positivism: A reassessment of the alliance*. Stanford: Stanford University Press.
- Tolman, E. C. (1920). Instinct and purpose. *Psychological Review*, 27, 217-233.
- Watson, J. (1913). Psychology as the behaviorist views it. *Psychological Review*, 20, 158-177.
- Watson, J. (1914). *Behavior: An introduction to comparative psychology*. New York: Holt.
- Watson, J. (1917). An attempted resolution of the scope of behaviorist psychology. *Psychological Review*, 24, 329-352.
- Watson, J. (1919). *Psychology from the standpoint of a behaviorist*. Philadelphia, PA: Lippincott.
- Watson, J. (1922). *The analysis of mind*, by Bertrand Russell. *The Dial*, 72, 97-102.
- Watson, J. (1924). *Behaviorism*. New York: People's Institute.
- Watson, J., & Watson, R. (1928). *Psychological care of infant and child*. New York: Norton.

