

## Chapter 5

# What Psychology Has to Say About John B. Watson: Classical Behaviorism in Psychology Textbooks, 1920-1989

James T. Todd

*In what a strange light should we ourselves appear, centuries hence, if our popular literature, which by reason of its quantity is less easily destructible, should alone outlive the productions of science?*

Ernst Mach(1893/1960,p.3)

Despite John B. Watson's considerable importance in the history of psychology and his celebrity status during the first part of the twentieth century, substantive discussions of his life, work, and views are now relatively rare. Passing references to Watson still appear in scholarly and popular works (e.g., Koch & Leary, 1985; M. Levin, 1987), but in-depth analyses, when they can be found, are confined primarily to publications specializing in the history of psychology. Only two of his widely read books are still in print (Watson, 1930; Watson & Watson, 1928) and the rest of his writings, although available in good university libraries, are not often read. In fact, the only academic context in which Watson retains a high degree of visibility is the general introductory psychology textbook (Knapp, 1985; Perlman, 1980).

Introductory psychology textbooks are, of course, rarely counted among psychology's most important or influential works. Unless they have become classics (e.g., Woodworth, 1921, 1929, 1934, 1940), textbooks attract little scholarly interest (but see, e.g., Hilgard, 1988; Morawski, 1992; Winston, 1988) and are not intended to survive as archival documents. Even so, they may represent the most important single literature within academic psychology. Textbooks are published in greater numbers and read by more people than perhaps any other type of academic psychological work. Only a few thousand copies of the seminal work of radical behaviorism, *The Behavior of Organisms* (Skinner, 1938), have been printed (see Knapp, in press) and probably only a few hundred active psychologists have read it. In contrast, the publishers of successful textbooks claim readership in the millions.

Because textbooks have become the only significant source for information about Watson and classical behaviorism, the manner in which they depict Watson and his views is an important issue. The potential negative impact on millions of students of possibly inaccurate and biased descriptions of one of psychology's most important figures should not be discounted—as an issue in itself or as a case study of the widespread problem of errors and inaccuracies in educational materials (see Todd & Morris, 1983, 1992). The purpose of this chapter is, therefore, to examine depictions of Watson and classical behaviorism in general introductory psychology textbooks published from 1920 to 1989. It will analyze several important features of textbooks' coverage of Watson and show how that coverage has evolved since 1920. Three aspects of Watson's work and views will be examined in detail: (1) his promotion of behaviorism and objective psychology, (2) his alleged environmentalism, and (3) the classic "Little Albert" experiment described in the article "Conditioned Emotional Reactions" (Watson & Rayner, 1920).

## TEXTBOOK SAMPLING AND DATA COLLECTION

### Sampling

The sample for the present study consisted of 130 introductory psychology textbooks published in English between 1920 and 1989.<sup>2</sup> The sample included only those textbooks intended

for college- and university-level general introductory psychology courses and excluded textbooks for speciality audiences (e.g., nursing students, see Cunningham, 1946) Other than requirements that a textbook be in English and be written for a university-level audience, no other selection criteria were applied; every textbook obtainable to the author in mid-1988 was reviewed. Approximately 80 percent of these books were part of the author's collection— obtained from used book sales, colleagues, publishers, and other sources. The remainder were borrowed from libraries, students, and faculty at the University of Kansas.

The breakdown of the sample by decades is indicated in Table 5.1 Except for the 1980s, the number of textbooks per decade of the sample increased with time. The sample for the 1980s was comparatively smaller than the sample for the previous decades because 1980s textbooks were not as widely distributed as those of previous decades and were less available to the author. The increase over time correlates with what appears to be an increase in the number of titles published each decade. Exact figures on sales and distribution of textbooks are not available, however, so the relationship between the sample employed in this analysis and the population of textbooks used since 1920 cannot be accurately determined. Nevertheless, other sources of information such as reviews, citations, and lists of textbooks in print (Johnson, 1978; Lowman, 1979; Rogers & Bowie, 1984) indicate that the sample contains 20-40 percent of the textbook titles published each decade since 1920. Furthermore, because the sample included most of the successful textbooks published this century (e.g., Woodworth's *Psychology*, Ruch's *Psychology and Life*, and Hilgard's *Introduction to Psychology*), as well as many apparently successful newer books (e.g., Carlson's *Psychology: The Science of Behavior*), the sample as a whole corresponds well to the selection of textbooks used by the majority of students of introductory psychology for the last seventy years.

Table 5.1

Sample Size by Decade

Decade	Number of Textbooks	Proportion of Total Sample
1920	8	6%
1930	9	7%
1940	11	9%
1950	16	12%
1960	22	17%
1970	42	32%
1980	22	17%
Totals	130	100%

**Data Collection**

In evaluating each textbook's coverage of Watson and classical behaviorism, references to John B. Watson, Rosalie Rayner, other relevant individuals, behaviorism, behaviorists, behavioral concepts and terminology, and related topics were read. Descriptions of Watson's life, views, and research were checked against original sources and authoritative secondary sources (e.g., Boakes, 1984; Buckley, 1989; Burnham, 1968; Logue, 1978, 1985a, 1985b; O'Donnell, 1985; Pauly, 1987; Samelson, 1980, 1981b). Unusual or interesting statements about Watson and classical behaviorism were transcribed. In addition, quantitative measurements were taken of: (1) citations of Watson's articles, chapters, and books as sources; (2) the page numbers of all index entries for the name "[John B.] Watson"; (3) the total number of text pages in each book (excluding indexes and

terminal reference sections); (4) the presence or absence of a photograph or drawing of Watson; and (5) the presence of any one of several common statements by or about Watson's alleged environmentalism such as "he believed all behavior was learned" (e.g., Baron, Byrne, & Kantowitz, 1977, p. 11; 1978, pp. 342-43).

## RESULTS

### General Features of Presentations of Watson

Watson was mentioned in almost every textbook in the sample, although the length and quality of the presentations varied considerably. Four (3%) of the 130 books did not mention him or his work (Boring, Langfeld & Weld, 1939; Brown & Gilhousen, 1950; Mussen et al., 1973; Swartz, 1963), and eight (6%) contained only passing references—no more than a sentence or two about his views or research or an isolated reference to one of his works (e.g., Gilmer, 1970; Krech & Crutchfield, 1961; Krech, Crutchfield, & Livson, 1969; Muenzinger, 1942; Murphy, 1951; Wheeler, 1940; Woodworth, 1940). The remaining 91 percent of the textbooks contained presentations on Watson and classical behaviorism that ranged from a single paragraph to several pages in length. Many textbooks published after the mid-1950s—when textbooks began to feature large numbers of photographs and other illustrations—included a drawing or photograph of Watson, and in some cases, a cartoon-like depiction of the procedures of the Little Albert experiment (Watson & Rayner, 1920; see, e.g., Bourne & Ekstrand, 1979; Kagan & Havemann, 1968, 1972, 1976; Lefrancois, 1980, 1982; Morgan, 1961; Morgan & King, 1966).

**Extent of Coverage.** Descriptions of Watson and his work were, in general, longer and more detailed in textbooks of the 1920s, 1930s, and 1940s than in textbooks published later. Because of Watson's rejection of consciousness as the primary subject matter of psychology, his views were usually described as deviating from the mainstream (e.g., Brierley, 1928; Woodworth, 1940). However, his theories and findings on emotional development and infant behavior (e.g., Watson, 1924a, 1924b; Watson & Morgan, 1917) were often described in detail, and sometimes served as the conceptual and empirical basis for discussions of emotions, conditioning, and related issues (e.g., Cole, 1939; Ruch, 1937, 1941). Although his empirical work was emphasized, many early textbooks also described Watson's view that thinking consisted of subvocal speech and his version of the frequency-recency theory of learning (see Watson, 1914, 1919a, 1924a). In addition, some of his research with nonhumans (e.g., Carr & Watson, 1908; Watson, 1907a, 1917b) was cited occasionally through the 1960s, although such references were more likely to be found in textbooks published prior to 1950 (e.g., Boring, Langfeld, & Weld, 1948; Cole, 1939; McKeachie & Doyle, 1966; Morgan, 1961; Vaughan, 1939; Wolff, 1947, 1956; Woodworth, 1929).

By the early 1950s, however, the theories of the physiologist Pavlov (1927), the neobehaviorists Hull (1943) and Tolman (1932), and the radical behaviorist Skinner (1938) had almost completely replaced Watson's views in most textbook discussions of learning and conditioning. Likewise, the developmental theories of Maslow, Piaget, Rogers, Freud, Harlow, Kohlberg, and Erikson largely replaced Watson's in discussions of emotions and child development. Thus, by the 1960s, coverage of Watson's views generally consisted of a few statements about his role in establishing behaviorism, his alleged environmentalism, and an abbreviated description of the Little Albert experiment (Watson & Rayner, 1920)

The decrease in coverage of Watson over time and the increased attention to alternative authorities is corroborated by the results of several other analyses. According to Kaess and Bousfield (1954), in the mid-1950s Watson was the most frequently cited person in a sample of nine psychology textbooks, leading, in descending order, Thorndike, Freud, Terman, James, and Pavlov. By the late 1970s, Watson had dropped to fifteenth place in a survey of ten introductory textbooks (Perlman, 1980) and then rose slightly to twelfth in the early 1980s according to a survey of twenty-nine textbooks (Knapp, 1985). At the beginning of the 1980s, then, the most frequently cited names in introductory psychology textbooks were (in order): Freud, Skinner, Piaget, Bandura, Erikson, Rogers, Pavlov, Schachter, Miller, Maslow, James, and finally, Watson.

In the present sample, the coverage of Watson across time is depicted in Figure 5.1, which shows by decades the average number of pages per book and the percentage of total pages per book (excluding pages of references) indexed under the name [John B.] Watson. The percentage of total pages per book with references to Watson has decreased steadily from the 1920s to the 1970s, then increased in the 1980s. The number of index entries per book has shown a similar general decrease across time until the 1980s, when the number increased. Interestingly, this increase in index entries to Watson in the 1980s correlates with Watson's jump from fifteenth to twelfth place in frequency of citations between the late 1970s (Perlman, 1980) and the early 1980s (Knapp, 1985).

Because a single index entry might represent an entire page of coverage or a single word, the citation analysis described above provides only a rough picture of the coverage of Watson in psychology textbooks. In fact, it probably underestimates coverage in textbooks of the 1920s, 1930s, and 1940s and overestimates coverage in textbooks published later. As described above, early textbooks often had detailed, multipage descriptions of Watson's views, which might, nevertheless, result in a relatively small number of index entries (e.g., Brierley, 1928; Lund, 1933; Moore, 1921). Modern textbooks, in contrast, rarely feature extended, detailed discussions of Watson's views, but contain instead a sizable number of passing references and non content material such as photographs, which inflate the number of index entries in relation to actual coverage (see, e.g., Papalia & Olds, 1988; Zimbardo, 1979, 1985). Figure 5.2, for example, shows that the use of photographs or drawings of Watson in introductory textbooks has risen from less than 20 percent through the 1950s to 86 percent in the 1980s. Finally, because this citation analysis presents only an average measure of coverage across books in any given decade, the wide variation in coverage between titles is not obvious. In this regard, Figure 5.3 shows that the coverage of Watson in Ruch and Zimbardo's *Psychology and Life* dropped steadily with each edition until the tenth, when Zimbardo became sole author and started the process again; coverage of Watson in Hilgard's Introduction to Psychology remained more stable through an overlapping time period.

**Citations of Watson's Works.** Another indicator of the changes in the coverage of Watson and classical behaviorism across time is the frequency of citations of his major works. Although the number of citations of Watson's works has remained constant at about two or three per textbook since the 1920s, the sources cited have become increasingly standardized. The authors of textbooks published through the 1940s were able to use a variety of sources for their more extensive coverage because Watson often published the same material in several places. For example, similar versions of Watson's views on emotional development and conditioning are available in both editions of *Behaviorism* (1924a, 1930), the second edition of *Psychology from the Standpoint of a Behaviorist* (1924b), three chapters in Murchison's *Psychologies of 1925* (Watson, 1926b, 1926e, 1926g), and three articles in the journal *Pedagogical Seminary* (Watson, 1925a, 1925b, 1925c). In addition, older textbooks commonly supplemented their coverage with now obscure articles such as "The Place of the Conditioned Reflex in Psychology" (Watson, 1916b), and with descriptions of Watson's research with nonhumans (Carr & Watson, 1908; Watson, 1907a). Thus, no single source predominated through the 1940s. Modern texts, in contrast, tend to cite only *Behaviorism* (1924a, 1930) and "Conditioned Emotional Reactions" (Watson & Rayner, 1920).

This standardization of sources is indicated in Figure 5.4, which shows the percentage of citations per decade of the four most frequently referenced works by Watson in the sample (see Table 5.2). The book *Behaviorism* (Watson, 1924a, 1930) has taken the place of *Psychology from the Standpoint of a Behaviorist* (1919a, 1924b) as the preferred book citation for reasons that will be described later, and the article "Conditioned Emotional Reactions" (Watson & Rayner, 1920) has now replaced all other works as the predominant source for descriptions of the Little Albert experiment. Curiously, despite its selection as the most important article published in the first fifty years of the *Psychological Review* (Langfeld, 1943), "Psychology as the Behaviorist Views It" (Watson, 1913b) was not often cited; it appeared in only 18 percent of textbooks published in the 1980s.

**Coverage of Watson's Research with Nonhumans.** As described above, Watson's research with nonhumans (e.g., Carr & Watson, 1908; Watson, 1907a, 1917b) was not a prominent feature in any textbook, although it was mentioned more often in the 1920s and 1930s than later (see, e.g., Boring, Langfeld, & Weld, 1948; Cole, 1939; Hunter, 1923; Kimble, 1956; McKeachie & Doyle,

1966; Vaughan, 1939; Wolff, 1947, 1956; Woodworth, 1921,1929). Besides Watson's *Behavior: An Introduction to Comparative Psychology* (1914), which was cited in nine textbooks (7%), only Watson's study of maze learning in rats with sensory impairments, "Kinaesthetic and Organic Sensations: Their Role in the Reactions of the White Rat to the Maze" (1907a) and Carr and Watson's studies of the adjustment of rats to a maze that changed length, "Orientation in the White Rat" (1908), were mentioned in more than one book. Interestingly, the article "Kinaesthetic and Organic Sensations" was misdescribed as Watson's doctoral dissertation in at least two of the books (Vaughan, 1939; Wolff, 1956)—an error that appeared in a footnote in Heidbreder's classic *Seven Psychologies* (1933, p. 239) and passed along to these textbooks through Keller's *Definition of Psychology* (1937, p. 54). Watson's actual dissertation, *Animal Education: An Experimental Study of the Psychical Development of the White Rat, Correlated with the Growth of Its Nervous System* (1903), was not cited in any textbook.

## Summary

Since at least 1920, discussions of John B. Watson and his work have been almost universally featured in general introductory psychology textbooks. However, the character of the presentations has changed over time. In the 1920s, 1930s, and 1940s, Watson's behaviorism was usually described as being too narrow because of its rejection of consciousness as an important subject matter. Nevertheless, his work on child psychology and emotional development was often discussed at length. Starting around 1950, Watson became a historical figure whose specific findings and theories were no longer current. Although the Little Albert experiment continued to be mentioned, the detailed descriptions of his work found in many earlier textbooks became abbreviated or disappeared entirely. Watson's promotion of an objective science of behavior was mentioned in almost every modern textbook, although most stated that environmentalism was one of the fundamental features of classical behaviorism. Watson's promotion of objective psychology, according to many modern textbooks, benefited psychology initially, but harmed it later.

In fact, because three aspects of Watson's work and views have been mentioned in modern textbooks to the exclusion of almost all others—the promotion of objective psychology, his environmentalism, and the Little Albert experiment—these features have seemingly come to characterize Watson as far as the present generation of psychologists is concerned. Even outside of textbooks, few other aspects of Watson's work are mentioned or discussed (e.g., M. Levin, 1987; Restak, 1988). As a consequence, the present analysis will examine the textbooks' treatment of each of these three characteristics of Watson, starting with his efforts to make psychology an objective natural science.

## MAKING PSYCHOLOGY AN OBJECTIVE SCIENCE

According to about one-half of the textbooks in the sample, Watson's most important accomplishment was his promotion of the idea that psychology should be objective and scientific. In the view of many textbook authors, Watson did more than simply promote objectivity—he made psychology objective. That is, in 1913 Watson suddenly and single-handedly reshaped psychology into the science of behavior by ruling out consciousness, introspection, and the mind:

J. B. Watson (1878-1958), the American Pioneer psychologist who forcefully brought experimentation and scientific rigor into psychology, is considered to be the father of the school of psychology known as "behaviorism." (Cox,1973, p.290)

This new approach [behaviorism] burst suddenly upon the field in 1913, appearing first in the form of an article by a brilliant but brash young scholar named John B. Watson. (Baron, Byrne, & Kantowitz, 1978, p. 10)

Although most of the textbooks described Watson's emphasis on objectivity and rigor as

beneficial to psychology, they also typically argued that he had overreacted to the psychology of consciousness. Some stated that he had made psychology too narrow by restricting it to the study of observable stimuli and responses:

As to "behavior," it would be a very suitable term, if only it had not become so closely identified with the "behavioristic movement" in psychology, which urges that consciousness should be entirely left out of psychology, or at least disregarded. "Behavior psychology," as the term would be understood to-day, means a part of the subject and not the whole. (Woodworth, 1921, p.2)

It seems that the Behaviorist [Watson], in ignoring "mind," cannot develop an adequate psychology of motivation. This shortcoming seriously detracts from the value of Behaviorism as a methodology for studying human conduct. (Vaughan, 1939, p.75)

Most psychologists, however, felt that conscious and unconscious experience should not be neglected by psychology.... For this reason, thoroughgoing behaviorism was rather short lived in the United States. (Ruch, 1948, p.38)

Interestingly, although approximately half of the textbooks in the sample mentioned Watson's attempts to make psychology an objective science, only 13 percent contained a citation to Watson's so-called behaviorist manifesto, "Psychology as the Behaviorist Views It" (Watson, 1913b), in which Watson first described his behavioristic views. In fact, "Psychology as the Behaviorist Views It" was not explicitly cited as a source until 1953 (Hilgard, 1953), forty years after it appeared in the *Psychological Review* (see Figure 5.4). The only mention of Watson's manifesto prior to 1953 was an oblique reference in a 1921 text (i.e., Moore, 1921, p. 31). Most texts supported their comments concerning Watson's attempts to reshape psychology by citing other works such as *Behaviorism* (1924a, 1930) and *Psychology from the Standpoint of a Behaviorist* (1919a, 1924b).

It is important to note that in addition to citing Watson's manifesto more frequently with time, the character of the textbooks' discussions of Watson's impact on psychology changed as well. Textbooks published through the 1940s usually described Watson's rejection of introspection and consciousness as too extreme. But, unlike modern textbooks, they did not suggest that a "behaviorist revolution" had occurred in 1913 (e.g., Brierley, 1928; Gates, 1935; Woodworth, 1940).

This belated interest in Watson's attempts to reform or reshape psychology does not indicate that a reanalysis of the impact of Watson's manifesto on psychology has been taken up by textbook authors. It corresponds to the widespread appearance of separate history and systems sections in introductory texts in the 1950s—a trend that started in the 1930s apparently in response to the proliferation of psychological "schools" (see Keller, 1937; Heidbreder, 1933; Woodworth, 1931). Prior to the 1950s, many textbooks contained brief comparative descriptions of psychological viewpoints (e.g., Brierley, 1928; Pillsbury, 1927), but separate discussions of the history of psychology were rare. Furthermore, because the history and systems sections are almost invariably part of the first or second chapters of textbooks (but see Hilgard, 1953; Wrightsman, Sigelman, & Sanford, 1979), Watson and classical behaviorism are increasingly mentioned in the first 5 percent of the pages of psychology textbooks (see Figure 5.5).

## **Watson's Behaviorist "Revolution"**

One important characteristic of the recent discussions of Watson's role in reshaping psychology is that they almost invariably exaggerate the immediate impact of Watson's "Psychology as the Behaviorist Views It," as well as the long-term impact of classical behaviorism on the character of psychology. It is certainly true that Watson called for an objective science of behavior that ruled out introspection and consciousness as its primary method and subject matter. Furthermore, the credit for the development and promotion of classical behaviorism clearly does

belong to Watson, and that alone makes him an important figure in the history of psychology (Burnham, 1968). However, contrary to the textbook accounts, Watson's manifesto did little to draw attention to Watson or behaviorism, and classical behaviorism, per se, probably had a smaller role in making psychology objective than is typically stated.

**Immediate Impact of the Manifesto.** As mentioned above, the publication of the behaviorist manifesto in 1913 did not thrust Watson into the spotlight. In 1912, he had been appointed chairman of the Johns Hopkins psychology department—after having been appointed full professor four years earlier at age twenty-nine (see Boakes, [this volume](#); Buckley, 1989 - and had made a name for himself as a comparative psychologist and as editor of the *Psychological Review* (see Boakes, [this volume](#)). His "election" to president of the APA in December, 1914, for example, was not due to fame acquired in 1913. He had actually been nominated by a committee in 1912, before the publication of his manifesto (Samelson, 1981b). Therefore, Watson had not burst onto the scene in 1913. He had already worked his way to the top.

As for the manifesto itself, Samelson (1981b) has noted that it attracted almost no attention—perhaps because Titchener's influence was still strong. Except for a favorable footnote added to an article by James Angell in the subsequent issue of the *Psychological Review* (Angell, 1913), by 1915, the manifesto had prompted only two major published responses, both critical (i.e., Calkins, 1913; Titchener, 1914). Likewise, Coleman (1988) has noted that only seven articles published in the *Psychological Review* between 1916 and 1920 contained a citation of any one of Watson's works. Furthermore, although Berman (1927) had criticized behaviorism as a "new, powerful religion" (p. 9), classical behaviorism had few open disciples. In 1922, almost a decade after the publication of the behaviorist manifesto, Walter Hunter's commentary, "An Open Letter to the Anti-Behaviorists" (1922), named only two behaviorists—John B. Watson and Albert P. Weiss—but twenty-three antibehaviorists. Finally, as Coleman (1988) has also noted, the peak of Watson's influence was between 1921 and 1925, a decade after his manifesto appeared, when his works were cited in 30 percent of the articles published in the *Psychological Review*; citations subsequently dropped sharply to 12 percent from 1926 to 1930.

What this indicates is that behaviorism's impact on psychology was not the consequence of the publication of Watson's manifesto. Watson's greatest impact occurred after the publication of his first major book on behaviorism, *Psychology from the Standpoint of a Behaviorist* (1919a), during the period when he was most actively promoting his views (Buckley, 1989). Therefore, the lack of citations of "Psychology as the Behaviorist Views It" in early psychology textbooks is not due to a lack of appreciation of behaviorism's early impact by textbook writers; it is an accurate reflection of the actual impact of behaviorism, per se. In fact, if textbook citations in the 1920s are reflective of the relative impact of Watson's works, then the citation of *Psychology from the Standpoint of a Behaviorist* (1919a, 1924b) in 88 percent of the textbooks published in the 1920s indicates that it was a much more important vehicle for the early promotion of behaviorism than the manifesto (see Figure 5.4; see Keller, [this volume](#)).

**Behaviorism's Long-Term Impact.** In addition to exaggerating the role of Watson's manifesto in the early promotion of behaviorism, textbooks also exaggerate classical behaviorism's impact on the character of psychological research. As described above, Watson and classical behaviorism are frequently credited with banishing consciousness and introspection, and thereby bringing objectivity and rigor to psychology. However, as Watson himself pointed out in his manifesto, the objective methods he was promoting in 1913 had already been in use for decades by him and others, especially in comparative psychology—a fact noted in some early textbooks:

Although behaviorism owes its present importance to the leadership of John B. Watson, objective studies which in themselves take no account of consciousness are as old as experimental work in psychology. (Hunter, 1923, p. 13)

Indeed, the use and discussion of objective methods by many others prior to 1913, including William James, Knight Dunlap, H. S. Jennings, Jacques Loeb, James McKeen Cattell, Edward L. Thorndike, and Max Meyer, has led to numerous claims that Watson was not the originator of behaviorism (see Burnham, 1968).

Yet, while behaviorism can neither be credited nor blamed for the introduction of objectivity into psychology in 1913, research based on formal Titchenerian introspection was declining in the first decades of the twentieth century, while work using objective methods was becoming more common. Here again, however, Watson's behaviorism was not the reason for the shift in the character of research. As O'Donnell (1985) has described in his history of the early development of American psychology, one important reason for the growth of objective psychology was institutional. During the first decades of the twentieth century, psychologists were attempting to form their own departments in colleges and universities, and had to exert their independence from both philosophy and physiology. Psychology could, by emphasizing experimentation, step away from philosophy, and by considering the whole organism and practical human problems (two hallmarks of early functionalism and its offspring, Watson's behaviorism), distance itself from physiology. Of course, those who supported these moves were also more likely to find objective experimentation more useful for their cause than the somewhat esoteric investigations of mental processes of the structuralists. Objectivity did not equal behaviorism, however, even if they were often taken to be the same. Thus, even the tripling of citations of Watson's work in the first half of the 1920s (Coleman, 1988) was not due to a dramatic shift in research focus or scientific philosophy toward behaviorism. Rather, those articles describing objective research cited Watson more frequently because he had made himself and behaviorism the symbols of objective psychology (Buckley, 1989).

If Watson cannot be credited with making psychology an objective science, he cannot be blamed for making it narrow and ineffective. In fact, the argument that psychology was hindered by behaviorism's strictures is vacuous. First, the textbooks that make the claim do not cite any evidence to support that claim. That is, they do not demonstrate that psychologists began to address a more limited range of problems or became less effective as behaviorism became more prominent. Second, even if it is accepted that Watson did change the character of psychology as a whole, it is unlikely that psychology under Titchenerian structuralism, studying the mind via formal introspection, would have addressed a wider range of issues more effectively than it did with Watson stressing objectivity and application. In that respect, an equally valid and probably more accurate argument is that Watson's emphasis on the practical application of psychology to everyday problems, and his active promotion and popularization of that idea, helped broaden the scope and acceptance of psychology beyond what would have been possible had Watson not been one of its most effective advocates (see Todd & Morris, 1992).

In any case, a determination of the extent or timing of Watson's actual impact on psychology is difficult to discern from textbook presentations. Although many textbooks described classical behaviorism's alleged narrowness and its negative impact on psychology, not one textbook suggested that the psychology at the time of its publication was unduly restricted or hindered by behaviorism. Every textbook that raised the issue of Watson's narrowness also assured its readers that the problem was either limited to behaviorism or had already been solved by the general rejection of Watson's formulation. Thus, textbook authors would disagree among themselves as to Watson's actual impact on psychology.

## **LITTLE ALBERT AND CONDITIONED EMOTIONAL REACTIONS**

The so-called "Little Albert experiment," which was first described in the article "Conditioned Emotional Reactions" (Watson & Rayner, 1920) and later in several other academic and popular publications (Watson, 1924a, 1924b, 1926e, 1930; Watson & Watson, 1921, 1928), is the most frequently mentioned single experiment in the sample of psychology textbooks. Unlike Watson's manifesto, it achieved almost instant fame in the sense that it was reported in psychology textbooks within a year of its publication (see Smith & Guthrie, 1921; Woodworth, 1921), and is properly described as one of the classic studies of twentieth-century psychology. Only Pavlov's work with the conditioned salivary reflex in dogs is mentioned more often in the sample, although most textbooks seem to describe the conditioning paradigm rather than a specific experiment.

The basic features of the Little Albert experiment are well known. Watson and his graduate

student and future wife, Rosalie Rayner, described establishing a conditioned fear response to a white rat in a child named Albert B. by pairing presentations of the rat with a loud noise created by striking an iron bar with a hammer. They stated, in addition, that the conditioned fear response generalized to some furry objects such as a rabbit, a dog, a seal-skin coat, and a Santa Claus mask, but not to Watson's hair.

The article, "Conditioned Emotional Reactions," in which the Little Albert experiment first appeared, was cited in 61 percent of textbooks overall, with the highest frequency of citations in the 1960s, 1970s, and 1980s (see Figure 5.4). However, the Little Albert experiment was mentioned or described in 76 percent of the textbooks. The 15 percent difference is accounted for by textbooks that cited one of the other contexts in which the experiment was described, or used no source citation at all (e.g., Beach, 1973; Bourne & Ekstrand, 1979).

The Little Albert experiment was described in the most detail in textbooks from the 1930s, 1940s, and 1950s, almost always in the context of discussions of emotions and conditioning. Some of the most detailed descriptions appeared in the first four editions of Floyd Ruch's *Psychology and Life* (1937, 1941, 1948, 1953), although several other early textbooks described the experiment in detail and often included extended quotations from the original descriptions (e.g., Cole, 1939; Cruze, 1951; Dashiell, 1937, 1949; Geldard, 1962; Munn, 1946, 1951, 1956). The early descriptions are not only notable for their detail in describing the experiment itself, but also because they often included a brief analysis of Watson's theory of emotions. Commonly, descriptions of the Little Albert experiment were accompanied by a discussion of Watson's theory that complex emotions were elaborations of the three primary unlearned reactions of fear, rage, and love (Watson & Morgan, 1917). In many cases, however, those textbooks then stated that Watson's simple tripartite division of emotional reactions was not supported by contemporary research (e.g., Sherman, 1929). Furthermore, a dozen textbooks (Asher, Tiffin, & Knight, 1953; Baron, Byrne & Kantowitz, 1977; Darley, Glucksberg, Kamin, & Kinchla, 1984; Papalia & Olds, 1988; Ruch, 1937, 1941, 1948, 1953, 1958, 1959, 1963, 1967) are notable because they mentioned or described supposed failures to replicate the Little Albert experiment by Valentine (1930), English (1929), and Bregman (1934).

Starting around 1950, when textbooks began to report on the growing research literature on emotions, presentations of the Little Albert experiment became increasingly abbreviated. A few modern books devoted a full page to Little Albert (e.g., Davidoff, 1976; Zimbardo, 1979) or featured the experiment in a box or insert separate from the main text (e.g., Cox, 1973; McKeachie & Doyle, 1972), but most recent descriptions ranged from one sentence to a paragraph in length. In addition, in some textbooks, the major components of the conditioning process used in the experiment were illustrated with a cartoon-like drawing (e.g., Bourne & Ekstrand, 1979; Kagan & Havemann, 1968, 1972, 1976; Lefrancois, 1980; Morgan & King, 1966; Smith & Smith, 1958).

Three aspects of textbooks presentations of the Little Albert experiment deserve special mention. The first is the high frequency of errors in descriptions of the study (Cornwell & Hobbs, 1976; Harris, 1979; Prytula, Oster, & Davis, 1977; Todd & Morris, 1983). The second is the uncritical acceptance of the study as a paradigm of human classical conditioning (Harris, 1979; Samelson, 1980). The third is the increasingly common practice of questioning the ethics of the study.

## **Errors**

Although a wide variety of errors were found in descriptions of the Little Albert experiment, most were minor and did little to change the overall character of the experiment as a demonstration of human classical conditioning. Rosalie Rayner's name was misspelled, usually as "Raynor," in 19 percent of the texts. The unconditioned and generalization stimuli were misdescribed in a large proportion of the textbooks: a rabbit, stuffed animal, or some other object was described as the conditioned stimulus rather than the rat actually employed (e.g., Bourne & Ekstrand, 1979; Harlow, McGaugh, & Thompson, 1971; Morgan, 1961; Morgan & King, 1966; Shaffer, Gilmer, & Shoen, 1940; Smith & Smith, 1958; Woodworth, 1929). Probably more serious, in at least four

textbooks, the Little Albert experiment was combined with a later experiment by Mary Cover Jones (1924) in which a fear response in a child named Peter was removed, thereby producing one study in which Watson and Rayner supposedly conditioned and then deconditioned Albert's fear (e.g., Baron, Byrne, & Kantowitz, 1978; Evans & Murdoff, 1978; Harlow, McGaugh, & Thompson, 1971; M. J. Levin, 1978).

Although the appearance of such a large number of easily correctable errors in textbook descriptions of the Little Albert experiment is an indication of less-than-careful scholarship and editing, the origin of some of the errors can be traced to some slightly misleading aspects of Watson and Rayner's own accounts of the study. For example, the appearance of the rabbit as the conditioned aversive stimulus in many descriptions can be traced to the child care book, *Psychological Care of Infant and Child* (Watson & Watson, 1928), where the Watsons had described a hypothetical version of the Little Albert experiment in which a rabbit replaced the rat originally used (see Woodworth, 1929). In most cases, however, the sources cited do not contain the errors that appeared in the textbooks. In fact, many of the errors in descriptions of the Little Albert experiment have been perpetuated because the writers of textbooks based their descriptions of the classic experiment on accounts in other textbooks rather than on any of the original sources (Cornwell & Hobbs, 1976).

### **Uncritical Acceptance of Little Albert**

Further evidence of the uncritical treatment of the Little Albert experiment in textbooks is its almost universal acceptance as unequivocal evidence of classical conditioning in humans. Despite a variety of methodological shortcomings, numerous small discrepancies between different versions of the original reports, and the clearly preliminary nature of the experiment (see Harris, 1979; Samelson, 1980), the strength and validity of Watson and Rayner's results are rarely questioned. Only three textbooks pointed out that the study was little more than a demonstration (Gerow, 1986; McGee & Wilson, 1984; Stagner & Solley, 1970 - a point even the Watsons had made in one now obscure context (Watson & Watson, 1921). In fact, some textbooks even described the Little Albert experiment as though it were the best or strongest evidence available of conditioning in humans:

Here we have unmistakable evidence that a child has been conditioned to fear an object that was previously neutral. (Cruze, 1951, p.540)

If mental development can be considered a fabric for which the innate endowments and intrinsic maturing furnish the warp, then habit-forming through social experience contributes the woof. Watson's epoch-making conditioning experiment is the measure of all others here. (Dashiell, 1937, p. 175; see also 1949, p. 220)

The numerous shortcomings of the Little Albert experiment have been described in detail elsewhere (Harris, 1979; Samelson, 1980), and will not be recounted here. They are all apparent in the original account of the study, and should lead one to the conclusion that Watson probably did not produce a sound demonstration of classical conditioning. Indeed, the acceptance of the Little Albert study as a convincing demonstration is more likely due to the simplicity of the account than to its data. That is, given the elegance of the classical conditioning paradigm, it hardly seems that the experiment could not work.

**Replications.** As mentioned above, a dozen textbooks cited one or more replications of the Little Albert experiment. Specifically, the textbooks argued that the successful use of animate objects such as a rat (Watson & Rayner, 1920) and a caterpillar (Valentine, 1930) as conditioned fear stimuli, as well as the lack of success with inanimate stimuli such as a wooden duck, wooden shapes, and opera glasses (Bregman, 1934; English, 1929; Valentine, 1930), suggested that humans are genetically prepared to learn to fear animate objects more easily than inanimate objects. The first two editions of *Psychology and Life* (Ruch, 1937, 1941), for example, summarized all three replications and concluded:

The failures of certain psychologists to condition fear responses to harmless objects suggests that emotional responses are not divided sharply into classes of innate and learned behavior. Stimulus objects differ from each other in the amount of time required to condition an emotional response to them. Animals are not natively feared, but they can become conditioned fear stimuli very easily. Toys and other harmless objects require many trials to come to serve as a conditioned stimulus to fear. (Ruch, 1937, p. 258)

It should be noted, however, that of the three "replications," only Bregman's study (1934) was a serious attempt to reproduce the crucial aspects of Watson and Rayner's experiment. As Delprato (1980) has noted, the accounts of English (1929) and Valentine (1930) simply have little relevance to the issue of conditioned emotional reactions. English's purported replication consisted of a single conditioning experiment that failed because the loud noise to be used as the unconditioned fear-eliciting stimulus failed to frighten the child (English, 1929, p. 222); Valentine's account was not only extremely informal in nature; it was designed to support a stimulus-summation view of elicitation and simply did not directly address the issue of conditioning. For its part, Bregman's study using fifteen infants contained a sizable number of methodological shortcomings of its own that virtually guaranteed that conditioned emotional responses would not develop, regardless of whether they could develop.

By the 1960s, only the sixth and seventh editions of Ruch's *Psychology and Life* (1963, 1967) contained the genetically prepared fear argument. However, the argument, with accompanying citations of Valentine, English, and Bregman, reappeared in the late 1970s after the publication of Seligman's (1971) "Phobias and Preparedness." In that article, Seligman made virtually the same contentions concerning hereditary preparedness for fears that had appeared in *Psychology and Life* thirty-five years earlier (see Baron, Byrne, & Kantowitz, 1977, 1978; Darley, Glucksberg, Kamin, & Kinchla, 1984; Papalia & Olds, 1988). Thus, modern textbook accounts of prepared fears often contain the same errors in describing the ostensible replications as the earlier textbooks. Even so, the errors are probably not due to the use of those earlier textbooks as sources. Rather, the errors are traceable to Seligman's own erroneous accounts of the Little Albert experiment and its replications (see Harris, 1979, 1980; Seligman, 1980): Seligman had exaggerated the persistence of the fear reaction established in Albert and, as Ruch had many years earlier, reported that English "did not get fear conditioning to a wooden duck, even after many pairings with a startling noise" (Seligman, 1971, p. 315; but see Delprato, 1980).

## **Watson's Ethical Standards**

Beginning in the 1970s, textbooks began to characterize Little Albert as the victim of a study of questionable ethical standards. Texts with editions spanning the 1960s, 1970s, and 1980s, for example, added comments about the ethics of Watson and Rayner's experiment to editions published during the 1970s and early 1980s (e.g., compare McConnell, 1974 to McConnell, 1980; Kimble & Garmezy, 1963 to Kimble, Garmezy, & Zigler, 1980; Ruch, 1967 to Ruch & Zimbardo, 1971). By the 1980s, then, approximately 70 percent of the textbooks that mentioned the Little Albert experiment also commented on its ethics. Some simply described the experiment as ethically unacceptable by today's standards, while others took a more sensationalistic approach:

Watson took an eleven-month-old infant named Albert and (with his mother's permission) conditioned him to fear white rats. The psychological community was horrified. (Davidoff, 1976, p. 10)

It is true that the study as described by Watson and Rayner probably would not be approved by a modern human subjects committee. Indeed, the ethical objections may be intended to dissuade students from conducting informal replications on their own. Nevertheless, although Watson had mentioned general opposition to his work with infants (e.g., 1930, p. 115), it is simply not the case that the Little Albert experiment raised serious ethical questions at the time. Had the ethics of the Little Albert study been an issue, Bregman's attempted replication with fifteen infants would have

been scandalous. In fact, the public seemed more concerned with the well-being of rats than infant humans: Watson had received more public criticism thirteen years earlier for his sensory deprivation study "Kinaesthetic and Organic Sensations" (1907a), which involved the surgical removal of rats' sense organs (Buckley, 1989; Dewsbury, 1990). In any case, although Watson's ethical standards in this case would probably satisfy few modern psychologists, he had been careful to sternly warn his readers that "considerable" academic training in physiology and animal behavior and practical training in hospital nurseries were prerequisites to the study of the behavior of human infants (1924a, p.88; 1930, p. 116; see also Keller, [this volume](#)). Moreover, although it cannot be considered a strong defense of his own actions, Watson also pointed out the hypocrisy of some of the critics of his other infant research:

Indeed there has been very great resistance to studying the behavior of the human young. Society is in the habit of seeing them starve by hundreds, of seeing them grow up in dives and slums, without getting particularly wrought up about it. But let the hardy behaviorist attempt an experimental study of the infant ant or even begin systematic observation, and criticism begins at once. (Watson, 1924a, pp. 87-88; 1930, p. 115)

## **ENVIRONMENTALISM**

### **A Dozen Healthy Infants and All Behavior Is Learned**

Probably the best known and most quoted statement in psychology is Watson's promise to take one child from a sample of a dozen healthy infants and train that child to take any specified occupation or profession:

Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any kind of specialist I might select—doctor, lawyer, artist, merchant chief and, yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations, and race of his ancestors. (Watson, 1924a, p. 82; 1930, p. 104)

This dozen healthy infants statement, first published in the 1924 edition of *Behaviorism*, is frequently quoted or cited when Watson is mentioned in scholarly and popular writings (Elkind, 1985; Hirsch, 1976; Kamin, 1974; Kendler, 1985; M. Levin, 1987), and has become a standard feature of textbook discussions of Watson and his views where it appeared in 55 percent of textbooks published in the 1980s. Throughout the sample, no other single statement was quoted often enough to make a comparative enumeration worthwhile. For most of psychology, including textbooks, the statement has become almost incontrovertible evidence of Watson's extreme environmentalism and, by implication, the extreme environmentalism of behaviorism as a philosophy (Hirsch, 1976; Koch, 1964b; M. Levin, 1987; but see Kamin, 1974; Kendler, 1985). In textbooks especially, the statement is often the only evidence cited to support allegations of behaviorism's environmentalism:

Watson held the rather extreme view that all behavior is learned, even boasting . . . that he could make any healthy infant into virtually any kind of adult simply by controlling all its experiences (Baron, Byrne, & Kantowitz, 1977, p. 11; see also 1978, p. 11; Bourne & Ekstrand, 1973, p. 18; 1979, p. 23; 1985, p. 16).

In addition, although charges of extreme environmentalism were usually accompanied by the dozen healthy infants statement, approximately 10 percent of textbooks that made the charge of environmentalism did so without the statement (e.g., Crider, Goethals, Kavanaugh, & Solomon, 1989; Hilgard, 1957; Mednick, Higgins, & Kirshenbaum, 1975; Morgan & King, 1975; Smith & Smith, 1958; Smith, Sarason, & Sarason, 1982; Zimbardo, 1988).

Interestingly, although the apparent environmentalism of Watson's position in *Behaviorism* (1924a) had been noticed by his contemporaries (Anonymous, 1926), the charges of environmentalism and the use of the dozen healthy infants statement in psychology textbooks is a comparatively recent development. The statement did not appear in textbooks until 1939 (Cole, 1939; Vaughan, 1939), and in those cases the authors explicitly stated that Watson had, in fact, limited his claims to only those children who were genetically normal and capable of the activities he proposed to train (see also, Hilgard, 1953; Munn, 1946, 1951). It was not until the mid- 1950s (e.g., Hilgard, 1957), when charges of extreme environmentalism, usually accompanied by the Dozen Healthy Infants statement (see Figure 5.6), began to appear frequently. Prior to that time, complaints about behaviorism as a philosophy were more likely to concern its materialism (e.g., Muenzinger, 1942) or supposed neglect of consciousness (e.g., Brierley, 1928; Woodworth, 1929). By the 1970s, Watson was charged with environmentalism by 80 percent of the textbooks.

## Watson's Environmentalism

In fact, the textbooks are partially correct in their assessments of Watson's position on the nature-nurture issue. By 1924, when Watson published the dozen healthy infants statement, he believed that all but the simplest human behaviors had been acquired through conditioning (Logue, 1978). However, because modern textbooks ignore the immediate and broader contexts of Watson's position on the nature-nurture issue, they not only exaggerate the extent of Watson's environmentalism, but also overemphasize its fundamental role in behaviorism as a philosophy. Furthermore, the textbooks' use of the dozen healthy infants statement as evidence of environmentalism has thoroughly obscured the statement's more important and now largely unrecognized function as a call for critical science (but see Kamin, 1974).

**The Evolution of Watson's Environmentalism.** Textbooks describe Watson's alleged environmentalism as though it were a fundamental feature of behaviorism, but they usually cite only works he published after 1924 after he had entered advertising, and twelve years after the publication of "Psychology as the Behaviorist Views It" (1913b; but see Crider et al., 1989). In fact, as Logue (1978) has pointed out, Watson did not begin to adopt the environmentalist position commonly attributed to him until about 1917 (Watson & Morgan, 1917; see also Dewsbury, [this volume](#); Watson, 1919a). He would not espouse the position he is now known for—that most human behavior is acquired—until approximately 1924.

For most of his academic career, Watson had taken an interactional view of the contribution of heredity and environment to human and nonhuman behavior. He had not been opposed to the term instinct, and in 1914, he had even described the term as "short, useful, and convenient" (1914, p. 106). Given this, Watson's fundamental behaviorist position—as outlined in his 1913 manifesto and 1914 text, *Behavior: An Introduction to Comparative Psychology*—did not involve a rejection of instincts or genetic contributions to behavior:

The psychology which I should attempt to build up would take as its starting point, first, the observable fact that organisms, man and animal alike, do adjust themselves to their environment by means of hereditary and habit equipments. (Watson, 1913b, p.167)

and

It is because of the intimate connection between instinct and habit that one most desires to get a clearer knowledge of the animal's repertoire of perfected instinctive responses, his partial and incomplete adjustments, and even his tendencies towards adjustment before beginning controlled work upon habit formation. (Watson, 1914, p. 44)

Later, however, even after he adopted his environmentalist view, Watson never denied that humans possessed a large repertoire of simple, unlearned responses. In fact, his system depended on unlearned reflexes to serve as the building blocks for more complex behavior. Moreover, he

never abandoned the view that nonhumans possessed large repertoires of complex instinctive behavior. Indeed, in about 1924, he adopted an evolutionary noncontinuity view: animals had instincts, but humans had simply lost theirs through natural selection. In this regard he stated:

Such a wide divergence of birth equipment [unlearned responses and infant morphology] in two animal species so closely related (both rodents) proves how unsafe it is to generalize, on the basis of infra-human studies, as to what the unlearned equipment of man is. (Watson, 1924a, p. 87; 1930, pp.114-15)

This contrasts sharply with his earlier continuity view expressed on the first page of his 1913 manifesto: "the behaviorist, in his efforts to get a unitary scheme of animal response, recognizes no dividing line between man and brute" (1913b, p. 158).

Because Watson had taken a noncontinuity position with respect to the innate behavior of humans and nonhumans, his pronouncements about the relative contributions of heredity and environment after 1917 must be interpreted as applying only to human behavior. That is, he was not arguing, as stated in many modern textbooks, that genetics played no significant role in behavior. Rather, he was arguing that genetics, via natural selection, was actually responsible for the differences between humans and nonhumans in the number of instinctive activities they displayed.

## Critical Science

In the form it is usually quoted, the dozen healthy infants statement appears to be little more than a polemical announcement of Watson's views on nature and nurture in humans. Yet, in the original chapters and articles that contained the statement, Watson's position on the role of instinct and the relative importance of nature and nurture would have been more than clear without the polemics. In *Behaviorism*, for example, Watson had already rejected a role for instinct in complex human behavior in the first four paragraphs of the chapters that contained the dozen healthy infants statement (see 1924a, pp. 74-75; 1930, pp. 93-94). However, when the statement is read in its full context, it is revealed as the climax of a series of the charges that the hereditarians of the time had not based their views on scientific evidence, but had uncritically adopted positions that owed more to established prejudice than to scientific analysis and investigation.

This latter point is clear from the immediate surrounding context of the statement. In the paragraph just preceding the statement, Watson charged that the hereditarians were willing to accept the most meager evidence for their claims:

Let one adopted child who has a bad ancestry go wrong and it is used as incontestable evidence for the inheritance of moral turpitude and criminal tendencies. As a matter of fact, there has not been a double handful of cases in the whole of our civilization of which records have been carefully enough kept for us to draw any such conclusions—mental testers, Lombroso, and all other students of criminality to the contrary notwithstanding. (Watson, 1924a, p. 82; 1930, pp. 103-4)

Watson, in contrast, was careful to qualify his own views. He added the following disclaimer to the dozen healthy infants statement—one not quoted by any textbook in the sample: "I am going beyond my facts, and I admit it, but so have the advocates to the contrary and they have been doing it for many thousands of years" (Watson, 1924a, p. 82; 1930, p. 104). And despite this claim, he actually did provide many relevant facts. In the chapter following that containing the dozen healthy infants statement, Watson gave a detailed account of developmental research he had explicitly designed to examine the contributions of heredity and the environment to human behavior.

## CONCLUSION

The present analysis of the contents of 130 introductory psychology textbooks published since

1920 shows that Watson has been consistently regarded as one of the most important figures in twentieth-century psychology. Although no textbook took a Watsonian perspective, through the 1940s Watson was nevertheless considered an important authority on several topics including comparative psychology, infant behavior, and emotional development. Beginning around 1950, however, Watson began to be presented as an important figure, rather than an important scientist (see Burnham, [this volume](#)). His views on emotional development were supplanted by newer theories and findings and, as a consequence, descriptions of his empirical work became more abbreviated. Yet, over the same period, Watson began to be depicted as the leader of a revolution in psychology—a revolution that the textbooks of the time failed to report. Eventually, after about 1960, the current textbook picture of Watson became standardized: Watson appeared suddenly in 1913 to promote a particularly narrow but influential brand of objective psychology that was based on the view that all behavior was learned and that inspired an important, but unethical, baby-frightening experiment.

The reasons for this shift toward increasingly erroneous but standardized textbook accounts of Watson and classical behaviorism are complex and have more to do with the sales and marketing of textbooks as a commodity than with psychology as a scientific and applied enterprise. These reasons have been described and analyzed elsewhere and will not be discussed here (see Calvert, 1977; Coser, Kadushin, & Powell, 1982; Fischer & Lazerson, 1977; McMahan, 1977; Paul, 1985, 1987). The present analysis is more concerned with the implications of the misconceptions that have already been established and spread by textbooks.

## Implications

**Defective Course Materials.** The first and most straightforward implication of erroneous textbook presentations is that students and instructors are wasting valuable time and money on educational materials that contain inaccurate information. That is, millions of students spend time learning and thousands of instructors spend time teaching misconceptions about Watson. Furthermore, the misconceptions arising from these errors are not likely to be corrected, because few students will ever take the upper-level classes that would presumably present a more complete and accurate account of Watson. Even if they do, students are likely to encounter more of the same errors because introductory textbooks are often based on the contents of upper-division textbooks. For example, the apocryphal account of sex research supposedly conducted by John B. Watson that appeared in Carlson's *Psychology: The Science of Behavior* (1984, 1988; see Buckley, [this volume](#)) was based on an account in the history and systems textbook, *A History of Modern Psychology* (Shultz, 1981; Carlson to Todd, personal communication, June 3, 1989), which was itself taken directly from McConnell's introductory textbook, *Understanding Human Behavior* (1974).

Of course, at this point one might object that the misrepresentation of Watson is, in itself, no reason for concern. Watson and classical behaviorism are just two topics among the hundreds covered in modern psychology textbooks. His views have little real bearing on contemporary psychology and any information about those views would probably be forgotten not long after the end of the introductory psychology course. Nevertheless, why should the discipline of psychology tolerate falsehoods in its introductory texts when a first-year physics textbook would be rejected if it contained as little as one page of inaccurate formulas, even if those formulas had little bearing on ordinary, day-to-day activities?

Still, even if the errors in presentations of Watson are dismissed as unimportant in themselves, they must be viewed as a symptom of a larger problem: Psychology textbooks probably do not present other aspects of the discipline any more accurately than they present classical behaviorism. That is, they often contain outdated and inaccurate information about topics such as Down's Syndrome (Abroms & Bennett, 1980), "Jensenism" (Miller, 1980), and Adlerian psychology (Silverman & Corsini, 1986). This evidence of errors in the presentations of a wide variety of topics, including contemporary radical behaviorism (Todd & Morris, 1983, 1992), indicates that students and instructors of introductory psychology are not only wasting valuable time and money

on inaccurate educational materials, but that introductory psychology textbooks might, in fact, be the most important single source of misconceptions about psychology.

*Interdisciplinary Communication.* A second and equally important implication of the errors and misconceptions about classical behaviorism in psychology textbooks involves the relationship between behavior analysis and other traditions within the behavioral sciences. If non-behavior analysts are misinformed about the basic assumptions of behaviorism through erroneous textbook presentations, then the possibility of useful interdisciplinary communication is decreased and the study of behavior in general suffers. For example, as indicated above, many modern textbook presentations indicate that a long-standing tradition in behaviorism is the rejection of genetics, species differences, and natural selection in behavior. However, if behaviorists are presumed to deny the widely accepted fact that selective breeding, for example, can have behavioral consequences, why should their opinions on any other matter be accepted? That is, how can substantive scientific interaction occur between behaviorists and other behavioral scientists if behaviorists are thought to be fundamentally naive about their own subject matter?

A clear example of this problem may be seen in a response by ethologists James L. Gould and Peter Marler to Todd's critique (1987b) of their erroneous description of early behaviorism in *Scientific American* (Gould & Marler, 1987a). Todd concluded:

The contrast that Gould and Marler paint between ethology and a mythical and unrealistic "early behaviorism" creates ill will and misunderstanding and does nothing for scientific communication. Their "new synthesis" can work only if both behaviorism and ethology are recognized as important specialities, neither viewing learning and instinct as "diametric opposites." (Todd, 1987b, p.4)

Gould and Marler responded by citing textbooks:

"Behaviorism" may mean different things to different people; our characterization, however, is well supported by textbooks and the writings of Watson and Skinner. For example, the most recent edition of the widely used text *Introduction to Psychology*, by Clifford Morgan and R. A. King [quoted above], states that, in emphasizing learned behavior, behaviorism "denied the existence of instinct and inborn tendencies." (1987b, p.4)

They then concluded in a less-than-ecumenical fashion by stating:

We agree that the principles we attributed to classic behaviorism were never tenable; nevertheless, our survey of pre-Garcia psychology texts [pre-1966] reveals that those were the precepts generally taught and, as we suppose, held. Todd's insistence on burdening modern psychology with the epithet "behavioristic" seems ill considered; we like Morgan and King, put behaviorism in the past tense (it is not even in the index of some present-day texts, such as Henry Gleitman's *Psychology*) and welcome the new synthesis that is now developing between ethology and modern [cognitive] psychology. (Gould & Marler, 1987b, p.4)

Equally unfortunate for ethology and behavior analysis, Gould and Marler are not without influence in their field. Marler is widely respected for his studies of bird songs (e.g., Marler, 1967; Marler & Peters, 1982), and Gould is a prominent figure in cognitive ethology (see Griffin, 1982), and is the author of a successful ethology textbook, *Ethology: The Mechanisms and Evolution of Behavior* (Gould, 1982). In fact, in his textbook, Gould quoted an unidentified introductory psychology textbook to support an erroneous comparison between behaviorism and ethology (see Gould, 1982, pp. 6-9) in which he dismissed behaviorism as a subject for serious consideration by ethology students:

It is now widely accepted that behaviorism is on the decline, its loss of vigor the result of

its inability to come to grips even with the existence of innate behaviors, much less with their mechanisms and evolutionary origins. (Gould, 1982, p. 8)

Of course, from Gould's perspective—that of undergraduate textbooks—his view of behaviorism is correct. A philosophy of science as simple, naive, and extreme as textbook behaviorism is hardly worthy of serious attention. Unfortunately for the conduct of behavioral science in general, however, Gould's students might not have any reason to doubt him, dismiss behavior analysis without a fair hearing, and pass on such academic intolerance to their own students.

*Behaviorism and Society.* The third implication of textbook presentations of Watson and classical behaviorism is related to the second, and involves the relationship between contemporary behavior analysts and policy and decision making in government and industry. According to many modern textbooks, radical behaviorism holds many of the same assumptions about behavior that are attributed to classical behaviorism (see Salzinger, [this volume](#); Todd & Morris, 1983, 1992). To the extent that public policy is shaped by individuals whose only exposure to behaviorism is through psychology textbooks, then those policies may not reflect the important conceptual and applied contributions of contemporary behavior analysis. In more practical terms, for example, why should the government grant money to a group of people whose most important research seems to have consisted of frightening a baby?

Of course, a likely objection to the scenario above is that responsible public officials would not rely on textbooks for their background information on behaviorism. Yet, as indicated above, respected scientists rely on them, and nonbehaviorist psychologists have advocated such a tactic. In an article published in *Psychology Today*, psychologists Robert Hogan (then editor of the *Journal of Personality and Social Psychology*) and David Schroeder attempted to assess the accuracy of the early Reagan administration's view of the social sciences. They stated that the Reagan administration saw psychology as "left-wing political rhetoric with no legitimate claim on the public pocketbook" (Hogan & Schroeder, 1981, p. 8). On their stated assumption that "introductory psychology textbooks provide a good barometer of the state of the art in psychology" (p. 8), Hogan and Schroeder reviewed six textbooks, from which they concluded that psychology was indeed pervaded by "deep-seated" liberal, behaviorist, situationist attitudes, and that the Reagan administration was essentially correct in its assessment of psychology.

The foregoing analysis, along with others (e.g., Todd & Morris, 1983), has shown that the contention that psychology textbooks are a "good barometer" of the state of the art in psychology is incorrect. The phrase "state of the art" implies the most recent conceptual and empirical advances. Yet, psychology textbooks rarely cite behavior-analytic research conducted after 1957 (e.g., Ferster & Skinner, 1957; see Todd & Morris, 1983), and, with few exceptions, continue to cite Watson's Little Albert experiment as though it were the best or only demonstration of any kind of conditioning in humans. Thus, Hogan and Schroeder's article, published in the leading popular psychology magazine, encourages the erroneous perception that an accurate assessment of psychology can be made by examining a few psychology textbooks, and that such an assessment can serve as the basis for responsible public policy decisions.

## **Solutions**

If science, industry, government, and the public truly regard introductory psychology textbooks as a suitable basis for assessing the historical development and current state of affairs in behavior analysis, then historians, behavior analysts, and educators should work to remove those errors from psychology textbooks. Without corrective action, errors in textbooks will increasingly become entrenched as academic folklore (Todd, 1987b) and, as such, will become difficult or impossible to change. In that event, behavior analysis might find it expedient to repudiate what are taken to be important aspects of its history—a response which is likely to be interpreted as evidence of a crumbling conceptual foundation.

Correcting presentations of the early history of behaviorism in textbooks is not a simple matter,

however. As mentioned above, textbooks respond to market pressures, while individuals concerned with accurate presentations of Watson and classical behaviorism probably represent an insignificant portion of that market. Direct contacts with textbook authors may result in some positive changes—a letter resulted in the removal of the account of Watson's sex research from the third edition of Carlson's *Psychology: The Science of Behavior* (Todd to Carlson, personal communication, August 19, 1988 - but one cannot always count on such positive responses. Thus, the best approach to changing textbook presentations is to adopt (or encourage the adoption of) textbooks that present a fair and accurate picture of the history of behaviorism, and to inform the publisher in writing of the reason for the adoption of that textbook. Those who are in a position to affect the adoption of a text for very large classes will, of course, speak with the loudest voices, and their specific complaints and compliments will be the most seriously considered. In addition, concerned individuals can sometimes affect the contents of textbooks by serving as reviewers and writers for textbook publishers.

## **EPILOGUE**

While the efforts of behavior analysts, historians, and other concerned individuals to improve the quality of modern presentations of Watson and classical behaviorism in psychology textbooks may have little immediate impact on the acceptance of modern behaviorism, the effort should be undertaken in any case. Errors about the early history of behaviorism must be corrected, first, to avoid the waste of valuable time and money by students, instructors, and universities; second, to justify and recognize the important work of historians and other scholars whose study of early behaviorism has been previously neglected; and third, to prevent misconceptions about classical behaviorism from adversely affecting the potential of modern behavior analysis to make continued advances in basic research and practical application.

## **AUTHOR'S NOTE**

An earlier version of this chapter was presented at the 1988 meeting of the Association for Behavior Analysis. The author would like to thank Edward K. Morris, Donald Bushell, Donald M. Baer, David G. Born, Ann Cudd, S. R. Coleman, and Gina E. Truesdell for helpful comments on earlier drafts. Preparation was partially supported by Public Health Service predoctoral training grant #HD07173-10.