

## The History of Behavior Analysis: Some Historiography and a Bibliography

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This article has two main purposes. First, it introduces the discipline of historiography and, second, it provides a selected bibliography on the history of behavior analysis. In introducing the former in the context of the latter, four important methodological considerations involved in the process and product of historiography are described: The sources from which historical materials are drawn (i.e., primary, secondary, and tertiary) and three dimensions along which historiography is conducted and evaluated—internalist vs. externalist, great person vs. Zeitgeist, and presentist vs. historicist. Integrated throughout are four purposes for the historiography of behavior analysis, as well as an overview of the topics covered in the extant literature. The manuscript concludes with a listing of current bibliographic material by publication type and topic.

*Key words:* behavior analysis, history, historiography, bibliography

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As behavior analysis expanded in the 1950s and 1960s, and subsequently became a discipline unto itself, its basic and applied research and its conceptual programs developed into relatively independent branches, defined in part by their respective journals—the *Journal of the Experimental Analysis of Behavior (JEAB)* (est. 1958), the *Journal of Applied Behavior Analysis (JABA)* (est. 1968), and *Behaviorism* (est. 1972).<sup>1</sup>

The discipline, of course, continues to grow and mature—in two ways, especially. First, behavior analysts recognize, more explicitly than before, the implications the three branches of their discipline have for one another; the discipline is broader than any one branch alone. This is evident in the founding of the Association for Behavior Analysis (ABA) in the mid-1970s and the publication of its “house” journal, *The Behavior Analyst* (est. 1978) by the Society for the Advancement of Behavior Anal-

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<sup>1</sup> References cited in this article that are not included in the bibliography are listed in a separate reference section at the end of the present material, preceding the bibliography. This makes the search for references sometimes troublesome, for the section in which a reference belongs may not be immediately obvious. Moreover, the bibliography itself is organized into subsections, and hence will require some section-by-section search. We apologize for the inconvenience, but could derive no other citation system without also greatly increasing the manuscript’s length.

ysis. With this has come more open discussion of the relationships among the three branches (see Branch, 1987; Day, 1980; Epling & Pierce, 1983, 1986; McDowell, 1988; Michael, 1980).

Second, the growth of the discipline is also evinced in the collection, organization, and examination of historical materials pertinent to the past practices and products of behavior analysts. This literature largely comprises bibliographies of the work of particular scholars, most notably that of B. F. Skinner (e.g., Epstein, 1982); graphs describing the growth of the discipline (e.g., Wyatt, Hawkins, & Davis, 1986); citation analyses of important features of the discipline, both present (e.g., women's contributions; see Poling, Grossett, Fulton, Roy, Beechler, & Wittcopp, 1983) and past (e.g., textbook sales; see Knapp, 1986); indexes for unindexed texts of historical significance, such as Skinner's autobiographical volumes (e.g., Skinner, 1979; see Epstein & Olsen, 1984); and reference sections for historically important texts lacking them, for instance, *Verbal Behavior* (Skinner, 1957; see Morris & Schneider, 1986). The clearest evidence of the discipline's maturity in these regards, though, lies in the emergence of more serious historical research and writing—that is, historiography—regarding the discipline's development, both as a whole (e.g., Day, 1980) and in each of its three branches (e.g., Boakes, 1984; Kazdin, 1978; Smith, 1986).

Given the emergence of this historiography, and the ongoing evolution of the discipline, behavior analysis has reached the point at which some organization and discussion of the nature of the historical materials might be useful.<sup>2</sup>

<sup>2</sup> At the APA Division 25 Executive Committee's 1987 mid-year meeting, the Committee established an Ad Hoc Committee on the History of Behavior Analysis in order "to develop better records of its history" (Steven C. Hayes to James A. Dinsmoor, personal communication, June 28, 1987). Among this Committee's self-defined charges was to assemble "a bibliography of the existing publications dealing with the history of behavior analysis" (Dinsmoor, personal communication, July 10, 1987).

The first purpose of this manuscript is to organize these materials in the form of a bibliography. The second is to introduce the field of historiography as it pertains to behavior analysis and, in the process, to describe four important methodological considerations involved in historical research (e.g., in preparing a historical bibliography). We give over the remainder of this section of the manuscript to the nature and purpose of historiography. Following that, we describe (a) the first set of methodological considerations, along with some definitional and organizational concerns, and then (b) the overall organization of the bibliography and the three additional considerations.

### *Historiography*

Whereas *history* is largely a chronological record of events, often with explanations of cause and effect, *historiography* is, broadly speaking, the writing of history, but it is more than that. As Webster's Ninth New Collegiate Dictionary defines it, historiography (ca. 1535) is:

the writing of history based on the critical examination of sources, the selection of particulars from the authentic materials, and the synthesis of particulars into a narrative that will stand the test of critical methods. (p. 573)

As such, historiography is an academic discipline unto itself (ca. 1800) and a domain of scholarship within other academic disciplines. As a discipline unto itself, historiography is largely independent of any particular field of inquiry (see Beringer, 1978; Bloch, 1953; Cantor & Schneider, 1967). It is concerned with the conduct of historical investigation, including the analysis and integration of historical materials, and the criteria by which historical products are evaluated. Together, these give rise to the four methodological considerations addressed in this paper: (a) the sources from which historical materials are drawn and (b) the dimensions along which historiography is conducted and evaluated—internalist versus externalist accounts, great person

versus *Zeitgeist* histories, and presentist versus historicist perspectives. These considerations are described later.

As a domain of scholarship within other disciplines, historiography is manifestly about something, for instance, about the natural sciences (e.g., biology), the social sciences (e.g., psychology), or the humanities (e.g., philosophy), in which case it is part of the conceptual branch of those disciplines (see, e.g., Brozdek & Pongratz, 1980).

In either case, historiography entails the process and product of (a) methods for collecting and organizing historical materials for their authenticity, soundness, and significance, (b) the analysis and integration of these materials, often in the context of other historiography, and (c) the evaluation of texts based on these materials.

### *The Purposes of Historiography*

The purposes of historiography and studying its products (e.g., textbooks on the history of psychology) are legion (see Coleman, in press; Kantor, 1964; Wertheimer, 1980). Among the most commonly cited are (a) that historiography keeps us from repeating the errors of the past (cf. Santayana's "Those who cannot remember the past are condemned to repeat it"), (b) that it helps resolve current dilemmas by examining their origins and development, (c) that it illustrates how a discipline may have gone astray and what its future might hold, and (d) that it describes how various cultural, social, economic, political, and intellectual factors affect a discipline's growth and how these factors influence its methodology, assumptions, and values, often in ways unknown to its practitioners. Farmington (1949) nicely summarizes these and other purposes:

History is the most fundamental science for there is no human knowledge which cannot lose its scientific character when men forget the conditioning [sic] under which it originated, the questions which it answered, and the function it was created to serve. A great part of the mysticism and superstition of educated men consists of knowledge which has broken base from its historical moorings. (p. 173)

Although these are important purposes, justifying them is beyond our purview. Instead, we make the case for four more-circumscribed, but substantive purposes for *behavior-analytic* historiography, offering two here and two others later.

*Clarifying the scientific discipline.* That behavior analysts are now interested in the history of their discipline may seem odd, for John B. Watson's (1913) classical behaviorism was in part a counter-reaction to the history and traditions of psychology, at least to those that were not his own (see Heidbreder, 1933, pp. 234–286). Watson's behaviorism was a self-statedly new and "fresh clean start" to the problems of psychology (Watson, 1924, p. 4). It was modern, pragmatic, and forward-looking, not overly concerned with the past because the causes of behavior are, in one sense, in the present—"History is more or less bunk" (Ford, 1916; cf. Skinner, 1982, p. 196). Although Watson's vision of psychology remains fresh, it is neither new nor well understood, especially with respect to its contributions (or not) to contemporary behavior analysis.

But herein lies an opportunity, and one purpose for behavior-analytic historiography: Behavior analysis can be understood not only in terms of its internal practices, and the external contrasts those practices make with psychology as a whole, but also in terms of how those practices and contrasts developed historically. Just as the behavior of an organism is a function of its history (e.g., selected via its reinforcement history), so too is the activity of a scientific discipline, that is, the history of the behavior of its scientists (see Hull, 1988).

In "The Concept of the Reflex in the Description of Behavior," Skinner (1931) provides an excellent example of the benefits of this Machian approach to historical analysis (see Marr, 1985, pp. 130–131). In introducing his own historical analysis, Skinner wrote:

Certain historical facts are considered for two reasons: to discover the nature of the observations upon which the concept [of the reflex] has been based, and to indicate the source of the incidental interpretations with which we are concerned. (p. 427)

In considering these facts, Skinner was able to clear away irrelevant associations and assumptions and thereby elucidate the generic and molar character of the subject matter—the reflex as a correlation of stimuli and responses (see Skinner, 1935). With that accomplished, a unit of analysis could be defined and a research program pursued, both undeterred by prior irrelevancies. In a like manner, the historiography of behavior analysis may clarify the central features of the discipline such that its experimental, applied, and conceptual programs may also continue undeterred, or at least less deterred, by misguided associations and assumptions, both from within and from without.

Put another way, just as the historical background presented in the introductory sections of basic and applied research manuscripts clarifies the significance of the research, so too may the history of behavior analysis clarify the discipline of behavior analysis. Such clarification seems forever a challenge (see Catania & Harnad, 1988; Zuriff, 1985).

*Developing the behavior-analytic philosophy.* A second purpose of behavior-analytic historiography is to further the behavior-analytic conceptual system. Not only does the study of the history of a science seem inevitably to clarify its philosophy, but such study also contributes to the further development of that philosophy. Just as a scientific theory of behavior emerges from ongoing experimental and applied analyses (see Skinner, 1947, 1950, 1956), so too, the philosophy of the science of behavior emerges from ongoing conceptual analyses—conceptual analyses of which historiography is an integral part.

One fundamental, but oft-overlooked point embedded in this purpose is that today's philosophy of the science of behavior will not be tomorrow's—and probably should not be. Behavioral philosophy will continue to evolve as long as behavior analysts analyze the behavior of organisms, including their own as scientists. Skinner's (1938) observation about empirical systems seems true as well for conceptual systems in this context:

It would be an anomalous event in the history of science if *any* current system [read: philosophy of the science of behavior] should prove ultimately the most convenient (and hence, so far as science is concerned, correct). The collection of relevant data [read: conceptual analyses] has only just begun. (p. 438)

The historiography of behavior analysis can contribute to the collection of these "relevant data" as part of an ongoing program of conceptual analysis, as well as the conceptual analysis of those conceptual analyses, and so on and so forth. In so doing, historiography will yield material for the continued evolution of behavior-analytic philosophy and epistemology (see, e.g., Hayes, Hayes, & Reese, 1988; Morris, 1988).

### HISTORIOGRAPHIC SOURCES, DEFINITIONS, AND ORGANIZATION

Preparing a bibliography of the materials on the history of behavior analysis presupposes agreement about what contemporary behavior analysis uniquely constitutes, but that is not always so easy a task. Even where agreement can be reached, we still face the problem that behavior analysis did not emerge preformed, but rather emerged, in part, from Watson's behaviorism—the subsequent neobehaviorist versions of which (e.g., Tolman's, Hull's, and Skinner's) became the dominant form of experimental psychology in the United States between the 1920s and the 1960s. The history of behavior analysis thus reaches far back into the history of modern psychology, but that broad a scope was unworkable for our present purposes, and thus some lines of fracture had to be found (or drawn) so as to manage the material.

#### *Historiographic Sources*

The first set of fractures is not definitional so much as organizational—fractures drawn along the lines of the three sources of historical material (i.e., primary, secondary, and tertiary). The differential inclusion of these materials (e.g., the ratio of secondary to primary sources) is the first methodological consideration

whose consequences affect the nature, quality, and usefulness of a bibliography's scholarship, which in turn have like effects on scholarship based on that bibliography.<sup>3</sup>

*Tertiary sources.* Tertiary material, which is drawn from primary, secondary, and other tertiary sources, encompasses general textbook and survey treatments of a discipline. Such work offers an overview of a discipline's history, sometimes with references to pertinent primary and some secondary sources.

The history of behavior analysis as a whole has received no comprehensive textbook treatment; such tertiary material mainly covers its individual branches. Applied behavior analysis, for example, has received textbook-like treatment in Kazdin's (1978) *History of Behavior Modification: Experimental Foundations of Contemporary Research*. Of the other two branches, only the experimental analysis of behavior has received similar treatment, this being Boakes' (1984) coverage of its pre-history in *From Darwin to Behaviourism: Psychology and the Minds of Animals*. To include Boakes's text as a tertiary source, though, is to overlook its closely researched and scholarly contribution, which makes it much more of a secondary than a tertiary source.

The most widely available tertiary materials are chapters on the history of *behaviorism* written for textbooks on the history and systems of psychology. Some of these chapters are excellent in insight and exposition (e.g., Heidbreder, 1933, pp. 234–286), while others are technically sound about certain aspects of behaviorism at mid-century (e.g., Marx & Cronan-Hillix, 1987, pp. 145–188, 313–379). As for the history of *behavior analysis*, this lies largely in whatever history of "radical behaviorism" subsections may

be found in these chapters (e.g., Leahey, 1987a, pp. 379–389). Few of these chapters, though, stand out for inclusion in this bibliography. They are usually dated, incomplete, or relatively pro forma as scholarship, or they misrepresent—not merely criticize—behavior analysis through error and innuendo (see, e.g., Leahey's, 1987a, p. 462, making over of Skinner's 1982 analysis of determinism in "On Having a Poem" into "having a rape").

One set of tertiary material that does not suffer these liabilities, yet that was still not included, may be found in historical treatments offered in behavior-analytic textbooks. Some of these texts intersperse "history of" material throughout, as in Catania's (1984) *Learning* (see, e.g., pp. 351–353), while other texts devote full chapters to historical material, for instance, Martin and Pear's (1988, pp. 419–432) "Giving It All Some Perspective: A Brief History" and Tawney and Gast's (1984, pp. 13–49) "The Behavioral Revolution." Although these are excellent sources of behavior-analytic material, they and others like them do not make a sufficient enough contribution to historiography to warrant inclusion.

*Secondary sources.* In contrast to the survey treatments offered by the tertiary sources, secondary sources have more circumscribed goals. As books, monographs, and articles, their scholarship is deeper and more focused on specific topics, for instance, on specific eras, individuals, places, controversies, publications, concepts, and terms. The present bibliography, like most others, is composed largely of such secondary sources—material itself based on primary and other secondary sources.

Among the topics addressed by these secondary sources are those covering important periods in the discipline's development, such as Watson's early research career (e.g., Todd & Morris, 1986), or those covering the development of behavior analysis as a professional discipline (e.g., Michael, 1980) or its specific branches, for instance, the experimental analysis of behavior (e.g., Catania, 1988). Other material covers various episodes

<sup>3</sup> Portions of what follows are structured somewhat along the lines of Woodward's (1980) more general treatment of the historiography of psychology. His chapter should be consulted for additional commentary and for details concerning historiographic methods, bibliographic sources, and funding.

and interludes (e.g., Skinner's "dark year"; see Coleman, 1985), individuals (e.g., Pavlov; see Skinner, 1981), institutions (e.g., psychology at Harvard; see Keller, 1970), controversies (e.g., the continuity of species; see Logue, 1978), concepts (e.g., the operant; see Scharff, 1982), terms (e.g., "radical behaviorism"; see Schneider & Morris, 1987), and published and unpublished manuscripts (e.g., Watson's papers; see Samelson, 1982).

One secondary source that does not fit neatly into the foregoing categories deserves special mention—Willard Day's (1980) chapter, "The Historical Antecedents of Contemporary Behaviorism." Although Day's treatment of the history of behavior analysis, especially of its conceptual lineage, is as broad-ranging as one might find in any tertiary source, his analysis is more subtle, scholarly, and astute. To date, this chapter is the best available treatment of the historical-philosophical underpinnings of the discipline.

Although Day focused on conceptual material, he did relate it, albeit briefly, to the other two branches of the discipline, which brings us to a third purpose of behavior-analytic historiography: Historiography can clarify and promote the discipline's underlying unity by integrating its three branches—the diversity among which sometimes leaves them isolated from one another in ways not conducive to the field's overall development (see Moxley, 1989). Just as various subdisciplines within the other sciences complement one another—for example, theoretical and quantum physics, or evolutionary biology and systematics—so too can the different branches of behavior analysis. Behavior analysis is not merely the sum of its basic and applied research and conceptual programs. It is their interrelationship, wherein each branch draws strength and integrity from the others. With the unity of behavior analysis clarified, the whole of behavior analysis emerges as greater than the sum of its parts.

*Primary sources.* Primary sources are fundamental to the conduct of histori-

ography, for they constitute the "data base" from which the secondary sources draw. Primary sources encompass books, chapters, and manuscripts, published and unpublished, written by members of the discipline and by those who prefigured it, as well as correspondence, notes, interviews, business records, catalogues, and scientific instruments.<sup>4</sup>

Published books, chapters, and manuscripts are, of course, widely available in libraries, or accessible through microfilm and the electronic media (e.g., PsycLIT CD-ROM). As for unpublished materials, they are available in public and private archives, both in the United States and abroad. One step in locating these sources would be to consult Sokal and Rafail's (1982) *A Guide to Manuscript Collections in the History of Psychology and Related Areas* (see also Woodward, 1980). Not covered in this *Guide*, however, are newer collections, for instance, Skinner's recently deposited materials in the Harvard University Archives at its Pusey Library.

The Smithsonian Institution also houses relevant primary sources, as does the Archives of the History of American Psychology.<sup>5</sup> The latter, for instance, is the repository for business records from the Society for the Experimental Analysis of Behavior, as well as "some records from the offices of various editors of its journals, *JEAB* and *JABA* . . ." (James A. Dinsmoor, Report of the Ad Hoc Committee on the History of Behavior Analysis, December 3, 1987).

Two other sources of primary materials are also available. First, obviously, are the autobiographical writings of behavior analysts and their predecessors.

<sup>4</sup> Primary sources are often described in manuscript footnotes, such that serious historiography often has a relatively high end-note-(or-foot-note)-to-text ratio. These end notes support the historiography with detail and data, just as do data appendices in research reports.

<sup>5</sup> The Archives of the History of American Psychology is located at the University of Akron, Akron, OH 44325-4302. Its director and associate director are, respectively, John A. Popplestone and Marion White McPherson.

These are available as books, chapters, and journal articles, primarily those written by Keller, Skinner, and Watson (e.g., Keller, 1989; Skinner, 1983; Watson, 1936). A second source is historical material reprinted in books and journals, for example, Skinner's (1989/1944) review of Hull's (1943) *Principles of Behavior*. These reprints are sometimes accompanied by material that offers important scholarship of its own, for instance Wood's (1986) commentary on Russell's (1927/1986) review of Ogden and Richards' (1926) *The Meaning of Meaning*. As for sourcebooks, whose purpose is to organize and reprint primary source materials, behavior analysis has none, though they are available for psychology more generally (e.g., Herrnstein & Borning, 1965).

Primary sources on the history of behavior analysis comprise material *from* that history, not material *about* that history, the autobiographical material excepted. The present bibliography generally covers the latter, that is, secondary sources *about* the history of behaviorism, not primary sources *from* that history, even though at enough temporal distance the latter can inform historical analysis (see, e.g., Catania, 1968; Catania & Harnad, 1988). To have included materials from the history of behavior analysis, though, would have meant including a great deal of the field's earlier scholarship, from its first texts (e.g., Watson, 1903, 1914, 1919) to later descriptions of the discipline's practices, such as its teaching curricula (e.g., Frick, Keller, & Schoenfeld, 1947; Keller & Schoenfeld, 1949) and its every expansion into new areas (e.g., "applied animal psychology," see Breland & Breland, 1951). What were tertiary and secondary sources in their own time may now have value as primary sources, but these distinctions were not ones we made.

### *The Definition of Behavior Analysis*

A second set of fractures pertinent to the bibliography concerns the definition of behavior analysis, especially in relationship to behaviorism more generally.

Although the lines we drew were not always clean, they nonetheless tended to converge on some defining features of the discipline—features we refine later, though never completely resolve.

Defined *currently* as a discipline unto itself, "behavior analysis" is perhaps best equated with Day's (1980, pp. 204–205) "contemporary behaviorism," for which Skinner's (1974) radical behaviorism and the experimental analysis of behavior (Skinner, 1966) are defining features. Behavior analysis so construed is cogently presented by Michael (1985) and Reese (1986), who describe the central features of the discipline, distinguishing it from other philosophies, psychologies, and behaviorisms.

Defined *historically* by lineage, the relationships between behavior analysis and behaviorism are less clear. To argue that the discipline did not exist until the term "behavior analysis" attained prominence in the 1970s was not workable. Those who were "behaviorists" before then, and who later called themselves behavior analysts, conducted their science little differently before than afterwards. Prior to the 1970s, "radical behaviorism" was often used to denote general behavior-analytic practices. But, defined as the "philosophy of that science" (Skinner, 1974, p. 3), radical behaviorism does not encompass all that is, or was, behavior analysis. Even if we take radical behaviorism to be synonymous with behavior analysis, "radical behaviorism" itself was not used in published print by Skinner before 1945 (Skinner, 1945), and did not achieve widespread use for his views until the 1960s, yet a great deal of behavior analysis had obviously been conducted by then. Moreover, Skinner did not coin the term "radical behaviorism"—it originally referred to Watson's behaviorism of the 1920s and 1930s (Schneider & Morris, 1987). The further back we go, the more difficult the lineage of behavior analysis is to define and describe.

The historiography of behavior analysis, or of any discipline, should of course not overly concern itself with *terms* referring to specific practices, but rather

with the lineage of those *practices*, for it is those practices—basic, applied, and conceptual—that define the discipline. A proper bibliographic history of behavior analysis, then, will have to trace practices, not terms, which is easier said than done.

Among the alternatives to such historicist bibliography would have been to define behavior analysis beginning with Skinner and his *successors* rather than with Skinner and his predecessors (Deborah J. Coon, personal communication, February 10, 1989). Skinner's work would then mark the beginning of a lineage rather than the end, thereby allowing an exhaustive search of the literature. A related approach would have been to date the discipline not from the work of Skinner himself, but from the date at which a sufficient number of scholars had amassed to warrant calling the work "disciplinary." For instance, behavior analysis might be dated from 1957 when the Society for the Experimental Analysis of Behavior was incorporated, or from 1958 when *JEAB* first appeared, or from 1966 when APA Division 25 was founded, or from 1974 when the Midwest Association for Behavior Analysis (later the Association for Behavior Analysis) was established. As with the first alternative, the literature search could then be both deeper and broader.

For present purposes, we sought compromises among these alternatives—compromises that made the construction of the bibliography feasible without at the same time foregoing some reasonable breadth and depth of coverage. Although the confines so produced were narrower than we would have preferred, they did allow us to build a core bibliography. Moreover, these definitions precluded our own idiosyncratic Machian definition of behavior analysis as "We know it when we see it."

#### *Organization of the Bibliography*

A third set of fractures pertains to the bibliography's organization: It is divided into nine sections organized by publication type and topic. The first three sections contain material organized accord-

ing to type: (1) books, (2) chapters, and (3) articles—all usual bibliographic fare. The remaining sections, comprising both type and topic, become less usual of this fare as the list progresses: (4) autobiographical material, (5) book reviews, (6) *memoria*, (7) commentaries, (8) professional trends and histories, and (9) bibliographies, indexes, and reference lists.

Other organizations of this literature were of course possible, the most useful of which might have been to categorize it by substantive topic and then to annotate the entries (S. R. Coleman, personal communication, December 3, 1988). Such an organization could parse the history of behavior analysis in many ways, for instance, by the three branches of the discipline or by subsections within each branch. The latter might have yielded topics such as "Skinner and Mead" (e.g., Baldwin, 1988), "The Institutionalization of Applied Behavior Analysis" (e.g., Goodall, 1972), and "Radical Behaviorism and Logical Positivism" (e.g., Moore, 1985).

A topical organization, however, would have yielded such a diversity of headings that some of them would have contained but one or two references, although that itself might be illuminating. This problem could be alleviated by restricting the categories to topics having some minimum number of references, but a potpourri of material would still have remained. In general, the extant literature on the history of behavior analysis is not large enough yet that an inclusive topical treatment is especially useful for the literature as a whole, and thus we retained the current organization. Eventually, a bibliography will be available through various electronic media, at which time it can be parsed and reorganized to fit any scholar's purpose.

#### THE HISTORIOGRAPHY OF BIBLIOGRAPHY

Having introduced the discipline of historiography, its sources, and some definitional and organizational features, we now describe the bibliography itself and the three other methodological consid-



erations regarding the conduct and evaluation of historiography.

### Books

The bibliography's most inclusive section is English-language books on the history of behaviorism in psychology.<sup>6</sup> Here, behaviorism refers to Watson's (1913, 1919) classical behaviorism and to the behaviorisms arising thereafter. Behavior analysis, of course, is one of these behaviorisms, but not all behaviorism is behavior analysis (e.g., social behaviorism; see Woodward, 1982). The subsequent sections of the bibliography respect this and even more restrictive distinctions as they focus further on behavior analysis per se. Even using this rather inclusive definition of "behaviorism," not all seemingly appropriate books merit inclusion. Richards' (1987) *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* (see Ginsburg, 1990), for instance, is more about minds and morals than about behaviorism. It also has but a single page citation to Skinner and includes no references to Skinner's work. Not enough can be gleaned about the history of behavior analysis from such texts and so they were omitted.

Behaviorism was, and is, of course, not just a discipline, but also an intellectual movement—part of the history of western civilization and part of the social and cultural history of the United States. As such, behaviorism appears in major historical works (see, e.g., Lasch, 1979; May, 1959; Wiebe, 1967) and in literature contemporaneous with Watson (e.g., Dell, 1930; King, 1930), for instance, Berman's (1927) *The Religion Called Behaviorism* and Wickham's (1931) *The Misbehaviorists*. Although these books do not focus enough on the history of behavior analysis to warrant inclusion in the bibliography, interested readers can

find citations to them in the reference sections of the texts we do include (e.g., Buckley, 1989), just as they can find other material not encompassed by the current project in the reference sections of the chapters and articles listed herein.

*Internalist versus externalist history.* The restrictions we placed on the inclusion of books, and later on other material, perhaps biases the bibliography toward an internalist, as opposed to an externalist, account of the history of behavior analysis. This raises the second important methodological consideration with respect to historiography, the first having been the primary, secondary, and tertiary nature of its sources.

Internalist histories of science are largely self-contained accounts of a discipline's progression across time, written from within the discipline and often independently of broader intellectual and social contexts. These histories describe a discipline (e.g., its theories, methods, and data) and how it progressed in solving what are taken to be well-defined problems through well-accepted rational, scientific methods and logic, that is, through the "internalist trinity of reason, argument, and evidence" (Hull, 1988, p. 2; see also Kuhn, 1962, on "normal science"). Internalist histories are usually written by knowledgeable, but not historically trained, senior members of a discipline. Their accounts often justify and legitimize the field, its present practices, and its "great persons." This is history as most of us were taught it.

In contrast to internalist history is externalist history. It is usually written by professional historians outside of a particular discipline, many of whom will even question a discipline's fundamental assumptions, practices, and principles (see Furumoto, 1989). Indeed, these historians may not even be neutral in perspective, but work from specific theoretical orientations (e.g., Marxist, psychoanalytic, or social constructionist; see, Elms, 1981, on a psychodynamic interpretation of Skinner's writing *Walden Two*; Skinner, 1948). At the very least, externalist history begins with the premise that science does not develop inde-

<sup>6</sup> Because behavior analysis was originally, and remains largely, based in the United States, the bibliography was restricted to English-language publications. Future bibliographic work, though, should search for non-English books (e.g., Sanders, 1978; Scheerer, 1983; see Woodward 1985) and journals (e.g., the *Mexican Journal of Behavior Analysis*).

pendently of the personal characteristics of a discipline's members (e.g., their ambitions and agendas) or of its cultural, intellectual, social, political, and economic contexts. Historiography pertinent to psychology's underlying social and sexual biases, for instance, may be found in Guthrie's (1976) *Even the Rat Was White* and Scarborough and Furumoto's (1987) *Untold Lives: The First Generation of American Women Psychologists*. These contexts and characteristics are reflected in most serious historiography.

Within behaviorism, Boakes (1984), a well-respected researcher of animal behavior, has written a more internalist than externalist pre-history of the experimental analysis of behavior, as has Kazdin (1978) for applied behavior analysis. Both describe the who, what, when, where, why, and how of events pertinent to the early development of these two branches of behavior analysis. In contrast, O'Donnell's (1985) *The Origins of Behaviorism: American Psychology, 1870–1920* is externalist. It focuses more on the cultural and scientific milieu and the social and economic pressures that affected the discipline's early development.<sup>7</sup>

Both internalist and externalist historiography—though not their possibly conflicting theoretical perspectives—seem necessary for understanding a scientific discipline. Internalist history provides the core of a discipline's development, externalist history provides the context—the content of neither alone may be sufficient. Indeed, an overemphasis on one or the other may distort the historical account: Professional scientists may overlook important external factors that contributed to or inhibited scientific progress, whereas historians may lack the scientific and technical background for drawing together important concepts and themes.

Internalism and externalism are, of

course, relative. For instance, a methodological behaviorist's account of behavior analysis would be external to behavior analysis, but internal to psychology as a whole. Indeed, in one important sense, all historiography is internalist—it is internal to the cultural time and place in which it is written (see Kantor, 1963, pp. 3–31). Historiographers cannot step outside the stream of their behavior to know the truth of the history they are writing because “knowing the truth” is also behavior in context. Behavior-analytic epistemology and truth criteria are pragmatic in these regards, not objectivist (see Hayes, Hayes, & Reese, 1988; Morris, 1988).

Turning back to the available books, also central to the history of behaviorism and behavior analysis are biographies of their “great persons,” for instance, such pioneers and founders as Jacques Loeb (e.g., Pauly, 1987), Ivan P. Pavlov (e.g., Gray, 1979), Edward L. Thorndike (e.g., Joncich, 1984), and John B. Watson (e.g., Buckley, 1989). The work of other scientists also prefigured important aspects of behaviorism, for instance, Charles Darwin's contributions to evolutionary theory (Clark, 1984; see Catania, 1987), Claude Bernard's contributions to experimental logic (Olmsted, 1938; see Thompson, 1984), and Ernst Mach's contributions to a phenomenological positivism (Blackmore, 1972; see Marr, 1985). To have included biographies of all such individuals, however, would have taken the bibliography too far afield. Thus, these were not included unless they spoke to specific lineages, parallels, and antiparallels with respect to behaviorism.

*Great person versus Zeitgeist history.* A third methodological consideration affecting the conduct and evaluation of historiography relates to these great persons—the dichotomy between the “great person” and the *Zeitgeist*. Great person history emphasizes the contributions of particular individuals to the historical development of a discipline (see Boring, 1950a, pp. ix–xii; Boring, 1950b). Although such historiography may be conducted as a straightforward descriptive exercise, it often presupposes more than that. It often presupposes a “personalis-

<sup>7</sup> In pointing out Boakes (1984), Kazdin (1978), and O'Donnell (1985), we are not suggesting that their texts exemplify any particular difficulties. Rather, we take their work to be differentially informed by internal and external considerations, such that the strengths of their respective texts lie in different domains.

tic" theory or explanation of scientific development—a theory that assumes great people are necessary for, and even the free and independent agents of, scientific development. Such historiography, often internalist in nature, emphasizes the rationality and creativity of these individuals and their active, intentional success in advancing science and promoting their careers within it.

In contrast, *Zeitgeist* (i.e., "spirit of the times") history emphasizes the cultural, intellectual, social, political, and economic conditions present during scientific development (see Boring, 1950b, 1955; R. I. Watson, 1971). It too, though, often presupposes an explanatory theory—in this case, a "naturalistic" theory—of how these conditions account for scientific development. In this view, the appearance that great persons are responsible for scientific advancement is illusory because other people would eventually have accomplished those ends.

At a descriptive level, great person and *Zeitgeist* historiography are not necessarily incompatible. Moreover, at an explanatory level, both great persons and the *Zeitgeist* seem necessary to account for the evolution of science. Put behavior-analytically, the great person is the locus for a confluence of variables both internal and external to science, for example, intellectual, social, political, and economic variables—the *Zeitgeist*. This person, though, is also a *unique* locus in that no two scientists ever have the same behavioral history, leading each to interact differently with the subject matter, and thereby have a unique effect on the science—an effect no one else could have had (see Boring, 1955). Both the *Zeitgeist* and great persons have their effects, but not independently of one another. They form a dialectic, with neither being more important than the other. Both are necessary.

Returning again to the extant literature, not only was behavior analysis difficult to define for our current purposes, but the criteria for what constitutes "historical" work were also not entirely unambiguous. The primary difficulty here was drawing distinctions between straightforward historical material (e.g.,

Boakes, 1984) and the following two cases. First, although not intended as historiography per se, conceptual-philosophical work often encompasses historical analysis, as in Smith's (1986) *Behaviorism and Logical Positivism: A Reassessment of the Alliance* and Zuriff's (1985) *Behaviorism: A Conceptual Reconstruction*. Such texts were included if they spoke substantively not only to behaviorism broadly defined, but also to the history of behavior analysis. Unfortunately, the historiography in other texts, for instance, Lee's (1988) *Beyond Behaviorism* (see Morris, 1989), was insufficient to warrant inclusion, albeit at the same time excluding valuable resources on the conceptual foundations of the discipline. These inclusions and exclusions led us to invoke a new, more general criterion: Whether precisely historical or not, such material was included when its exclusion was judged to hinder *historical* scholarship more than its inclusion (James A. Dinsmoor, personal communication, January 3, 1988). This "hindrance" criterion, while possibly somewhat idiosyncratic to our own views, was also applied in making decisions in other sections of the bibliography.

The second difficult case in defining "historical" material was that some behaviorists and behavior analysts have written books that are not histories of the discipline per se, but of psychology more generally, for instance, Keller's (1973) *The Definition of Psychology*. Although by our criteria these references should be excluded, they were retained because of the uniquely behavioral perspective they bring to the history of psychology—especially Kantor's (1963, 1969) *The Scientific Evolution of Psychology*—and hence to the history of behavior analysis.

One secondary source of textbooks not searched for this bibliography was dissertations, though they will often be pertinent. Indeed, many of the books in our bibliography were originally dissertation projects (e.g., Buckley, 1989; Joncich, 1984; Mackenzie, 1977; O'Donnell, 1985; Smith, 1986). But not all dissertations are published or published quickly, or are easily accessible. Thus, the *Dissertation Abstracts International* becomes a useful

resource. For instance, looking back far enough, we find Diehl's (1932) *An Historical and Critical Study of Radical Behaviorism as a Philosophical Doctrine*. More recently we find Dean's (1981) *The Evolution of Experimental Operant Behavior*, Gudmundsson's (1983) *The Emergence of B. F. Skinner's Theory of Operant Behavior: A Case Study in the History and Philosophy of Science*, and Wiklander's (1989) *From Laboratory to Utopia: An Inquiry into the Early Psychology and Social Philosophy of B. F. Skinner* (see also Woodward, 1980, pp. 41–43).

### Chapters

As for chapters on behaviorism and behavior analysis, these came from our own files, from material submitted by members of the APA Division 25 Ad Hoc Committee on the History of Behavior Analysis, and from other scholars contacted for this and additional purposes.<sup>8</sup> Although this pool of material was not based on an exhaustive search of the literature, and hence was not exactly "historicist," it was informed from the start by a broad base of material to which many people contributed.

Not all of the chapters, however, were appropriate for inclusion. Material on Watson and classical behaviorism was retained (e.g., Logue, 1985a), but that on other behaviorists and behaviorisms was included only if it addressed historical lineages, parallels, and antiparallels with respect to behavior analysis—not with behaviorism broadly defined. The Watson references were included largely because Skinner (1976, pp. 298–300) has written that Watson's work prefigured his own; Keller (1982, p. 7), too, has remarked on Watson's priority in shaping his own views. Thus, although Watson's behaviorism, like those of Tolman and

Hull, would not be behavior analysis today, it was the predecessor of the work of those who founded behavior analysis. This does not mean that behavior analysis draws only from Watson's behaviorism, but rather that Watson is its most obvious antecedent. Indeed, in many important ways, behavior-analytic epistemology and experimental practices are more broadly informed by traditions outside of classical behaviorism (see Day, 1980), for instance, in evolutionary biology (Catania, 1987), experimental medicine (Thompson, 1984), and philosophical positivism (Marr, 1985).

These criteria thereby excluded just *any* material on social learning theory, both dynamic (e.g., Dollard, Miller, Sears, Spence, & Kendler) and cognitive (e.g., Bandura), learning theories other than Skinner's (e.g., Guthrie, Hull, & Tolman), analytic philosophy (e.g., Russell, Ryle, & Wittgenstein), early behaviorism (e.g., Hunter, Lashley, Meyer, Thorndike, & Weiss), functionalism (e.g., Angell, Carr, & Dewey), Russian reflexology (e.g., Bechterev & Pavlov), early physiology and comparative psychology (e.g., Bernard, Kuo, Loeb, Morgan, Romanes, & Crozier), and evolutionary theory (e.g., Darwin). Indeed, we can go back even further, for, as Kantor (1968) once pointed out, the first behaviorist was probably Aristotle (see Kantor, 1963, pp. 116–151). In other words, and to paraphrase Ebbinghaus (1910, p. 9), behavior analysis has a short history, but a long past. The present bibliography focuses more on the former than on the latter.

*Presentist versus historicist history.* Our nonexhaustive search of the literature and our strictures about what to include, and what not, may have yielded a bibliography that is not only more internalist than externalist, but also more "presentist" than "historicist," the distinction between which is the fourth and last methodological consideration we address (see Fischer, 1935; Samelson, 1974; Stocking, 1965).

Presentist history selects, interprets, and evaluates past discoveries, conceptual advances, and historical figures as prescient of science as it has come to be, that is, of the "winning" tradition. Here,

<sup>8</sup> We thank Kerry W. Buckley, A. Charles Catania, S. R. Coleman, Deborah J. Coon, Alan Costall, Ernest R. Hilgard, Fred S. Keller, Terry Knapp, Victor G. Laties, Marion White McPherson, and B. F. Skinner. Not only did they provide references, but they also offered thoughtful advice and commentary, and took the time to lead us gently through historiography of which we were unaware. We thank the journal's reviewers for the same.

the history of science is important for what it means at present, largely for justifying the present, as though the march through time were simply an ever-increasing, almost teleological foretelling of today's "correct" view. It also serves the pedagogical functions of establishing traditions and attracting students (Kuhn, 1968; see Samelson, 1974). Presentist history is comforting and feels right, for it is written largely in the context of currently accepted and fashionable views. It is also generally great person-ist.

Not only do presentist histories justify and celebrate winning traditions, but also what they take to be losing traditions. That is, histories that selectively interpret the past as a justification for the inevitable fall from favor of a particular perspective are presentist as well, and not uncommon in material on behaviorism (see, e.g., Mahoney, 1989; contra Morris, in press). For instance, behaviorism is often faulted for having allied itself with the logical positivist philosophy of science, such that the demise of logical positivism brought an end to behaviorism (Koch, 1964) or such that the demise of behaviorism was evidence of the flawed methods of logical positivism (Mackenzie, 1977). Smith's (1986) *Behaviorism and Logical Positivism: A Reassessment of the Alliance*, however, shows that behavior analysis did not adhere to logical positivism, but rather to something more like philosophical pragmatism (see Zuriff, 1979, 1985).

Presentist history, then, often yields "origin myths" about the history and current instantiation of a discipline. For example, see Samelson (1974) on Comte as the supposed first positivist, operationist, and behaviorist, Harris (1979) on Watson and Rayner's (1920) poorly conducted and reported "Little Albert" study, Buck (1990) on Benjamin (1988) on teaching machines, and Verhave (1990) on Watson's actual views regarding thinking—it was not merely subvocal speech.

In contrast, historicism views scientific discoveries, conceptual changes, and historical figures as events to be understood in the context of their own times and places, not in the context of the present

(see Furumoto, 1989). On this view, historiography is concerned with the meaning of past events in their own time and place, not with their function in elucidating or justifying a discipline at present. Historicist methodology is more exhaustive and less selective in its inclusion of historical material. It makes fewer distinctions about what is and is not relevant for present purposes. And it does not dismiss previous work for not conforming to current fashion.

Historicist history can undermine normative views (and origin myths) by illustrating that science does not always progress in ways suggested by accepted presentist standards (Brush, 1974). The "new" history of psychology (Furumoto, 1989), for instance, points out the social and scientific inequities and the difficult decisions faced by the first generation of American women psychologists—material not covered in the usual textbook treatments (Scarborough & Furumoto, 1987). With respect to behavior analysis, recent historicist history has shown that the term "radical behaviorism" does not have the roots in Skinner (1945) and its meaning in "thoroughgoing" as so often presumed (see Schneider & Morris, 1987). Historicist histories of behavior analysis, then, will often require the revision of current, normative views.

The criticisms of presentism aside, historiography need not be conducted solely for historicist interests. Historiography of a presentist sort may be conducted in order to correct misunderstandings about the present (Hull, 1979), which is a fourth purpose for behavior-analytic historiography: Contemporary behavior analysis is misunderstood in ways that historiography can correct by describing actual lineages, not those passed down by tradition.<sup>9</sup> Behavior analysis, for instance,

<sup>9</sup> Another, more obviously utilitarian, purpose of historiography is employment. University and college courses on the history and systems of psychology are disproportionately taught by senior faculty, many of whom will be retiring within five to ten years. Academic position openings may thus increasingly specify the teaching of the history of psychology as a job requirement or preference. This trend will probably continue as long as APA requires that graduates of its approved programs take these courses.

is commonly depicted as adhering to certain philosophical "isms," such as associationism, objectivism, logical positivism, and mechanism, and as overlooking certain phenomena, such as biological and covert events, in ways that belie its actual views and scope. Historiography can correct this. Smith's (1986) "demythification" of the behaviorists' alliance with logical positivism, for instance, has already altered one historical account (see Leahey, 1988). Presentist histories, then, can serve quite proper scholarly interests in correcting misrepresentations about a discipline.

As for the bibliography, one source of material we did not include was signed entries on behaviorism and its history found in reference works. These entries provide general, though not necessarily infallible, capsule summaries of the discipline at the time and in the intellectual context they were written. Among the reference works that might be consulted for material on the history of behavior analysis are the *Encyclopedia Britannica*, *Funk and Wagnall's New Encyclopedia*, the *Encyclopedia of Philosophy*, the *Dictionary of the History of Ideas*, the *International Encyclopedia of the Social Sciences*, *The Social Science Encyclopaedia*, the *Encyclopedia of Neurosciences*, and the *International Encyclopaedia of Education* (see, e.g., Bijou, 1985, 1986; Buckley, 1985; Vaughan, 1987). Some of these reference works, such as the *Encyclopedia of the Social Sciences* (see Kalten, 1930), have undergone revision through their various editions such that a study of the changes in their coverage and evaluation of behaviorism might prove a valuable exercise (Kerry W. Buckley, personal communication, December 8, 1988).

Reference works that focus more specifically on psychology are likewise an important source of material. Corsini's (1987) *Concise Encyclopedia of Psychology*, for example, contains well-informed entries on behaviorism (Leahey, 1978b) and its history (Krasner, 1987). Gregory's (1987) *Oxford Companion to the Mind* covers similar material, and includes as well an entry by Skinner (1987)—"Behaviorism, Skinner on." Also, Popplestone and McPherson's

(1988) *Dictionary of Concepts in General Psychology*, although more selective, offers accurate and still deeper coverage.

#### Journal Articles

The bibliographic listing of substantive journal articles could not be as inclusive as the book section, for that would have entailed something close to reprinting the reference sections of all the books and chapters listed thus far. This is the point at which we invoked a stricter definition of behavior analysis. For our purposes, we confined our systematic (but not entire) search for material on the history of behavior analysis to articles published in the primary United States journals having "behavior-analytic" titles—*JEAB*, *JABA*, and *The Behavior Analyst*. From these, we drew any original or reprinted materials pertinent to the history of the discipline.

Restricting our systematic search to these journals was overly narrow, of course, and so we expanded our literature base in two ways. First, *Behaviorism* (est. 1972, and now *Behavior and Philosophy*) was searched, and any article of historical interest was included. Second, we searched the *Journal of the History of the Behavioral Sciences (JHBS)* (est. 1965), but restricted our inclusions to those on Watson and on topics specific to the lineages, parallels, and anti-parallels with behavior analysis.<sup>10,11</sup>

<sup>10</sup> Each of the five journals was searched by one of the authors. The first four journals were checked against the criterion of "any articles of historical interest"; the *JHBS* was checked against the criteria regarding Watson and the "lineages, parallels, and antiparallels" with respect to behavior analysis. All the journals were then checked in entirety by another author for accuracy in inclusion and in transcribing the references. A coder agreement check of the 138 references initially drawn from the five journals turned up 21 errors (which were corrected) across six categories: author(s), publication date, title, journal, volume (and number), and pages. Coder agreement percentage across the six categories was calculated as agreements ( $6 \times 138 - 21$ ) divided by agreements ( $6 \times 138 - 21$ ) plus disagreements (21) =  $807/828 = 97.5\%$ .

<sup>11</sup> The current references are inclusive of material published as of July 31, 1990. We apologize to authors whose publications should have been included, but that were not, and would appreciate being sent reprints or references for any subsequent updating of the bibliography.

Although these criteria focused our systematic search on but a few, largely internalist publications, the journals are arguably at the forefront of basic and applied research, and conceptual analysis (Day, 1980). The material encompassed by the present bibliography, however, goes beyond these sources. Also included here is pertinent material drawn from the reference sections of the articles included from the five journals, as well as articles from our own files and from those of the Ad Hoc Committee and of our consultants. These inclusions, though, were constrained by the prior criteria regarding Watson, as well as the lineages, parallels, and anti-parallels with respect to behavior analysis—criteria that were applied throughout the remaining sections of the bibliography.

Omitted from our systematic search were the behavior modification and behavior therapy journals (e.g., *Behavior Modification* and *Behavior Therapy*) and the sometimes difficult to obtain or no longer published foreign journals (e.g., *Behaviour Analysis Letters*, *Behaviour Change*, *Behavioural Processes*, the *Japanese Journal of Behavior Therapy*, and the *Mexican Journal of Behavior Analysis*). Perhaps most notable for its absence from our search is *The Psychological Record*, founded in 1937 by J. R. Kantor, and publication outlet for many behavioral articles, both at present (e.g., Coleman, 1985) and in the past (e.g., Skinner, 1937). The eclectic nature of *The Record*, however, precluded its systematic search, even though articles from it were included as culled from other sources.

Also omitted from the systematic search were the newsletters of behavioral organizations and their special interest groups (SIGs) and of behavioral divisions of nonbehavioral organizations. Among these were the Association for Behavior Analysis's *ABA Newsletter*, the Association for the Advancement of Behavior Therapy's *the Behavior Therapist*, and APA Division 25's newsletter, *The Recorder* (which for a short time was a journal, *Behavior Analysis*). Overall, these criteria are strict, and for some purposes perhaps too strict, but they allowed us to build an initial core bibliography. Even

with these restrictions, though, the criteria permitted the inclusion of material that might not be deemed pristinely behavior-analytic (e.g., Parrott & Hake, 1983).

The *JHBS*, of course, should be perused for additional material, as should many other journals pertinent to the history of science, such as *Isis* (est. 1913), especially its annual *Critical Bibliography*, published by the History of Science Society. Among the others are the *History of Science* (est. 1962), the *Journal of the History of Ideas* (est. 1948), the *Journal of the History of Philosophy* (est. 1963), and *Studies in the History and Philosophy of Science* (est. 1970). Also, Cheiron, the International Society for the History of the Behavioral and Social Sciences (est. 1968), publishes a newsletter and holds annual meetings, as does APA Division 26 for the History of Psychology (est. 1965), whose newsletter (est. 1969) publishes occasional "bibliography updates."<sup>12</sup> Various bibliographic guides to primary and secondary sources in the history of psychology are also available (e.g., Viney, Wertheimer, & Wertheimer, 1979; see Woodward, 1980, pp. 46–48).

Readers interested in teaching the history of psychology might consult the special 1979 issue of the journal, *Teaching of Psychology* (Vol. 6, Issue 1), published by APA's Division 2 for the Teaching of Psychology. Thoughtful articles were included on the content of such courses (e.g., Raphelson, 1979; Robinson, 1979; see also Brozek, 1966; Woodward, 1980, pp. 46–51), as well as on specific instructional strategies (e.g., Benjamin, 1979; Caudle, 1979; see also Berrenberg, 1990; Coffield, 1973). For how to involve students in preparing a departmental history, see Benjamin (1990; see also Hilliz & Broyles, 1980; Weigel & Gottfurcht, 1972).

<sup>12</sup> For information about the Cheiron Society, write Professor Alvin H. Smith, Treasurer of the Cheiron Society, Department of Psychology, St. Andrews College, Laurinburg, NC 28352-5593. For information on APA Division 26, write Professor Ronald Mayer, Department of Psychology, San Francisco State University, San Francisco, CA 94132.

### *Autobiographical Material*

The inclusion of autobiographical material was uncontroversial. It was restricted to Skinner (e.g., Skinner, 1983), to Keller (e.g., Keller, 1982), and to Watson's (1936) chapter in the series, *A History of Psychology in Autobiography* (see Lindzey, 1989).

### *Book Reviews*

Book reviews not only describe a book's content, but often contribute to historiography through the scholarly interpretation and evaluation of texts. A reading of them also allows us to approach the history of behavior analysis in a more informed fashion through reviews of books whose historical analyses are not accurate on all accounts; see, for instance, Zuriff (1979) on Mackenzie (1977).

For present purposes, all historically pertinent book reviews appearing in the four behavioral journals were included (e.g., Wood, 1981), while those in the *JHBS* and from our other sources were selected according to our criteria. Retrospective reviews of classic works are listed as well, for they usually offer important historical analyses of their own. Among these are Marr (1985) on Ernst Mach (1883/1960) and Thompson (1984) on Claude Bernard (1865/1957), as well as those in honor of the 50th anniversary of the publication of Skinner's (1938) *The Behavior of Organisms* (see, e.g., Galbicka, 1988).

### *Commentaries*

Commentaries consist largely of journal and newsletter publications that are briefer and more informal than the substantive articles included above. These are sometimes commissioned in celebration of historically significant occasions, for instance, the 30th anniversary of the founding of *JEAB* (e.g., Dinsmoor, 1987), but are more often submitted as comments on previously published articles (e.g., Mountjoy & Ruben, 1984) and book reviews (e.g., Samelson, 1981). The latter are especially valuable where they correct historiography that is poor or technically

unsound; see, for instance, Harris (1981) on Begelman (1980) on Cohen (1979).

### *Memoria*

Memoria written in honor of behaviorists and behavior analysts were also included (see, e.g., Skinner, 1981, on Pavlov), for they offer useful insights into the history of the discipline and serve as an important adjunct to biographical and autobiographical material.

### *Professional Trends and Brief Histories*

Materials on professional trends and brief histories describe a discipline's development, often quantitatively conveyed through tables and figures. These are the "institutional" components of the history of a discipline—typically overlooked in favor of the history of ideas. Included in the present bibliography, for instance, are articles on the founding of the Association for Behavior Analysis (e.g., Peterson, 1978), surveys of publication trends and demographics (e.g., Williams & Buskist, 1983), and citation analyses of behavior-analytic texts (e.g., Skinner, 1957; see McPherson, Bonem, Green, & Osborne, 1984).

A distinction to be made here is that between quantitative and qualitative historiography. Qualitative historiography is the more common form. It involves the analysis and integration of texts on a discipline's history—on materials that range, for instance, from a discipline's conceptual basis (e.g., Zuriff, 1985), to its theories (e.g., Skinner, 1950), its unit of analysis (e.g., Skinner, 1935), and its scientific methods (e.g., Skinner, 1956). Quantitative historiography, in contrast, is as it suggests: It describes and analyzes history via tables and graphs in ways that words alone sometimes cannot. The viability of a discipline, for instance, can be conveyed by data on organizational growth (e.g., Morris, 1985), the impact of a book can be described in terms of its sales (e.g., Knapp, 1986), the importance of a research topic can be presented via citations (e.g., Buskist & Miller, 1982), and the influence of behavior analysis on



other disciplines can be assessed by cross-referencing practices (see Morris, Hursh, Winston, Gelfand, Hartmann, Reese, & Baer, 1982).

The standards for scholarship and logic are no less rigorous or refined for quantitative than for qualitative historiography, the "softness" or the "hardness" of the data notwithstanding (Young, 1966). Each approach informs the other.

### *Bibliographies, Indexes, and Reference Lists*

The bibliographies of important figures in behavior analysis are included because they document those contributions and otherwise inform historiography (see, e.g., Knapp, 1975). R. I. Watson's (1976a, 1976b) *Eminent Contributors to Psychology*, for instance, contains extensive primary and secondary source references to J. B. Watson (see R. I. Watson, 1976a, pp. 438–439; 1976b, pp. 1060–1066). Prepared subject indexes to texts containing important historical content were also included in our bibliography (e.g., Epstein & Olson, 1983), as well as indexes to texts that are not historical in content, but which might enlighten analyses of how they came to be written (see, e.g., Knapp, 1974). The last point holds as well for prepared reference lists for such books (e.g., Morris & Schneider, 1986). These materials do not elucidate the history of behavior analysis so much as they are the tools for historiographic research, which is exactly the purpose of the present bibliography—it, too, is a tool.

### CONCLUSION

We have introduced the field of historiography, largely as it pertains to behavior analysis. We have described four methodological considerations involved in historiographic inquiry. And, we have presented four substantive reasons for conducting behavior-analytic historiography and engaging its products.

The methodological considerations, in particular, are not trivial, for not only do their consequences bear on the conduct of historiography, but they are also the

basis for judging its products. Historiography can never be bias-free, of course, because historiographers can never step out of their own historical and cultural contexts. Making these methodological considerations explicit, however, provides at least some basis for evaluating, controlling, and correcting these possible sources of error.

Historiography, just as other conceptual analyses, allows us, as Skinner (1979, p. 282), might have put it, to discover uniformities, order confusion, and resolve puzzlement about the diverse heritage and present practices of behavior analysis. In other words, just as the proper organization of our empirical data enhances our effectiveness in describing, predicting, and analyzing behavior, so too does proper historiography assist in establishing and clarifying the behavior-analytic world view, in enhancing our understanding of the discipline as it is currently instantiated, in bringing unity to a discipline of sometimes independent branches, and in correcting misunderstandings about it. We hope that the uses to which the accompanying bibliography is put will further these ends, for the bibliography is only the beginning of more serious historiography.

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