History of Psychology From a Behavioral Standpoint

Mark A. Swain, Dennis J. Delprato, & Peter A. Holmes

Eastern Michigan University

[In B. D. Midgley (Chair), The teaching of the history of psychology: A naturalistic perspective on the study of behavior. Symposium conducted at the meeting of the Association for Behavior Analysis, Atlanta, GA, 1991.]

Others frequently revere and respect prolific scholars and scientists for their intellectual activities and contributions. Some are followed by "schools" of thought which encourage emulations of their manner of approaching their discipline. Their written material is intimately studied, and they serve as authoritative sources of information. However, for many votaries, the controlling variables associated with the superior accomplishments of outstanding figures remains enigmatic. All too often, these prominent personages are viewed as unique or "gifted."

Careful investigation of the careers of eminent scholars usually reveals that they, too, were largely influenced by the philosophy and investigative approaches of others. For instance, according to Smith (1986), B. F. Skinner admired Francis Bacon's writings that exposed him to five classes of behavior which Bacon believed to be important in the practice of science: (a) observation; (b) classification; (c) inductive establishment of laws; (d) avoidance of overgeneralization; and (e) avoidance of meta-physical dogma. These five general rules or assumptions for competent science, perhaps first met by Skinner in his reading of Bacon, seem to have played a prominent role throughout Skinner's career.

If one wishes to effectively understand a prominent figure such as Skinner, it may be necessary to identify the influences that impacted his views on science. Because Skinner recognized the naturalistic development of scientific behavior (such as the scientific verbal community), he often supplied historic information that helped his readers to understand his influences and reasoning associated with his philosophical positions and assumptions. Experimental, applied, and conceptual analysis are three generally accepted areas within behavioral analysis. However, in each of the three areas, relevant historical knowledge typically is taken for granted.

This paper proposes that a fourth component of behavioral analysis be considered--historico-critical analysis. This area would (a) provide a behaviorally-based methodology for investigation of all historical records and disseminate historical information necessary to effectively understand and promote a natural science of behavior. An historico-critical approach is far different from a chronology. It involves the critical investigation and evaluation of historical records.

Routes To Scientific Knowledge

There are basically two ways to gain information pertaining to events of interest: by directly experiencing the event, or indirectly, by way of a scientific verbal community. Behavior analysts take this as fundamental and often refer to the two classes of behavioral control as contingency-based and rule-governed, respectively. [It may not be necessary or appropriate to tie direct and indirect observation to the distinction just made.] Out of necessity, we rely heavily on information about events that we have not personally witnessed but nevertheless believe we are knowledgeable about because these events have been described or explained to us by individuals or groups of individuals who are, in our judgment, authoritative.

As students of behavior, we acquire the majority of our information about events from the behavior analytic verbal community. Nobody is expected to replicate for themselves all previous experimental and applied findings to be considered an expert. Therefore, if one is considered an expert in behavior analysis, the source of expertise lies in information acquired indirectly, in that the majority of the knowledge has been acquired through the reading of behavior analytic literature and the verbal influence of mentors, rather than derived through direct contingency control.

Critical Evaluation of Indirect Information

Given that our knowledge about behavior is largely based on the information we receive from authoritative influences, we may be well advised to critically examine it before it is accepted. Historico-critical analysis provides the behavior analyst with a strategy for dealing with the enormous amount of information which is continually circulating within the scientific verbal community. In choosing to be "behavioral" scientists we (like it or not) not only associate ourselves with certain assumptions but most likely adhere to them (although these assumption are not the same for all behavior analysts and personal assumptions do undergo change). Because much of the behavior analyst's behavior may be directed by rule-governed contingencies it is suggested that serious investigation be considered into the historical development of behavior analytic assumptions (or basic rules). We are not suggesting that all behavior analysts develop a perfect set of assumptions that somehow account for the "ultimate" truth in the events they study. However, it is not too idealistic to expect that we make at least an informed decision about the assumptions that we hold. This is where historico-critical analysis is helpful.

History and Science

Important and influential writers within science have noted the importance of the historical perspective in understanding both the development and current status of the sciences (Einstein & Infeld, 1938; Mach, 1883/1942; Kantor, 1969; Skinner, 1931). Several have also recognized that science is a product of human activity (Kantor, 1969; Naess, 1965; Skinner, 1931; Smith, 1986). Put simply, science is the behavior of scientists as they engage in activities to study and describe events. Within this framework past activities of scientists become extremely important in that these activities have resulted in the current scientific environment. It is for this reason that Skinner (1931) and Kantor (1963, 1969) emphasized that study of the historical development of science is necessary for effective understanding of scientific issues.

Traditional History vs. Historico-Critical Analysis

Before going any further, it is necessary to distinguish between traditional history and that of an historico-critical analysis. It is a common complaint that historical approaches are minimally informative in that they present mere chronology associated with who did what, and when they did it (Zuriff, 1985). Because the traditional approach to history focuses on chronology, it often misses important issues which are necessary for a more in-depth probe of historical events. By contrast historico-critical analysis includes important considerations that are critical in understanding historical events such as the sociological conditions, cultural conditions, meta-physical beliefs, and the ideological views of the of the scientists studied (Smith, 1986). This is done on the assumption that a behaving scientists cannot be separated from the culture from which they are behaving. Many of psychology's basic assumptions and concepts are steeped in cultural tradition (Kantor, 1963, 1969; Naess, 1965; Skinner, 1931; Smith, 1986). Dualism is an important example of a cultural assumption that has been especially influential and problematic in the development of psychology and is represented in the mind/body dichotomy that most behaviorists have abandoned.

Functions of Historico-Critical Analysis

Some may feel scholarly activities which spell out our basic tenets and ground them to specific historical assumptions should not be a part of our behavioral activities because they lead to complicated linguistic battles in which there is little pragmatic return. However, we believe this is a misunderstanding. We are not suggesting that we partake in aimless "ivy tower" linguistic games which focus on unanswerable questions or tangential conceptual issues. We simply note that there is a rich history associated with the development of the sciences and that our assumptions and practices are a product of this history. If our assumptions influence our scientific activities, and these assumptions are a product of history, then we might conclude that our scientific behavior is in large part functionally related to the developmental history associated with our assumptions. Because so much of our behavior is under the control of indirectly acquired information (whether we actively pursue it or not), we might be prudent and exercise cautious deliberation when formulating our interpretations of behavioral events. If one accepts an assumption (behaves in accordance with a particular rule) concerning the nature of behavior without taking into account the historical formation of the assumption, they run the risk that their behavior is controlled by someone's interpretation of events that could be at variance with the facts.

Skinner and History

Skinner was profoundly influenced by the Machian historical perspective (Smith, 1986), and he performed an historico-critical analysis of the reflex in the first part of his dissertation which he published in 1931 as The Concept of the Reflex in the Description of Behavior. According to Skinner (1931), he did the analysis in order to (a) "discover the nature of the observations upon which the concept has been based," and (b) "indicate the source of ... incidental [superfluous] interpretations" workers placed on the outcomes of observational activities (p. 427). Skinner was mainly interested in scientists' reported observations and their subsequent interpretations. Through this research Skinner addressed how the historical definition of the reflex originated and how it subsequently developed and changed. In doing this, Skinner clearly illustrated the effect of cultural assumptions (e.g., soul doctrine) on the interpretation of "reflexive" events. As such, Skinner's dissertation not only recognized the gradual secularization of society but also the influence of this complex movement on interpretations of data deriving from investigations of the reflex. It gives the reader valuable insight into the origins of the dichotomy between voluntary and involuntary behavior. As a result, Skinner presents his interpretation of reflexive events which is only fully appreciated and understood in the historical perspective. Skinner (year) noted that the chief advantage of his dissertation was that it was written from an informed historical perspective. This appreciation of historical antecedents continued throughout his distinguished career and is represented by his research into the derivations of words which he often used to bring about effective understanding of subject matter.

Kantor and History

J. R. Kantor's work, The Scientific Evolution of Psychology (1963, 1969), represents a critical macro-history of the development of psychology. It is a unique history in that Kantor provides an astonishingly complete critical macro-historical overview of the development of psychology ranging from the sixth century B.C.E. into the twentieth century. In this work, Kantor does much more than put forth a chronology of events. According to Kantor, the historical events under investigation cannot be separated from what he refers to as the cultural matrix from which the sciences were shaped (Kantor, 1963). In order to satisfactorily address the development of psychology, Kantor describes psychology's historical development in relation to other sciences and in relation to cultural, including philosophical and theological influences. Kantor describes in detail the ubiquity of transcendental soul doctrine and its influence on scientific world views and its resulting impediments towards a natural science of behavior. In doing so, Kantor focuses on the development of observations, the investigative methods, and the theories developed to explain the interactions between organisms and stimulating objects (Kantor, 1963). Kantor parallels for psychology as a whole Skinner's historico-critical analysis of the reflex. That is, Kantor stresses (a) the observations upon which psychological explanatory constructions have been based and (b) the source of incidental (superfluous) interpretations that thinkers and scientists have placed on the events deriving from investigative operations.

Toward a Historical Perspective

Like the historian, the scientist often relies on abstracted information concerning events (Parrott & Hake, 1983). Both the historian and the scientists collect data. While the historian collects various written, vocal, and other data, the scientists also collects data reflecting the nature of events. While the historian investigates "reported" events, the scientists also studies "reported" events (or collected data). Because the data are actually abstracted from events and do not constitute the original events, the information will be, (necessarily) subjective.

Largely, it is the scientists themselves who are personally responsible for the recording of their interpretations. Event selection, investigating operations, and (ultimately) theory construction is believed to be influenced by the personal history of the behaving scientists. The scholarly training of the scientists is the most obvious influence while the general cultural conditions, ideological beliefs, and theological and political variables are often lost in the highly specialized writings found in scientific journals. None the less, the enormous amount of adjunct influences on the scientist's behavior continue to participate whether they are addressed or not. It is for this reason that the historico-critical analysis of scientific activity has come to be of value.

A major aspect of historico-critical analyses is the study of the behavior of scientists by critically investigating their selection of problems, procedures, reported observations, and interpretations. An historical approach allows the critical examiner to contemplate the particular historical idiosyncrasies and the general cultural and scientific views which were endogenous to the reported observations and interpretations. Kantor, (1981) discussed the importance of critical evaluation of reported events and constructs which involves distinguishing between event-based science and non-event based activities, "A critical observer can readily differentiate between (1) philosophical systems which depict things and events as they are observed to happen, or inferred from relevant events and (2) verbal systems autistically invented by analogy and legend" (p. 344). Psychology especially, has a long history of supporting cultural beliefs over that of supporting the study of psychological events. In fact, the term psychological events when referring to the soul, psyche, or mind, etc. might be viewed as an embarrassing oxymoron in that these are not events.

Invariably, it was this type of critical historical investigation that led behavior analysts to abandon mentalistic interpretations of psychological events in favor of more naturalistic descriptions of behavior. Behavior analysis is unique in that workers have not been satisfied with many generally accepted assumptions about the development, maintenance, and patterning of behavior. In fact, behaviorism is often represented as an alternative philosophy for addressing "psychological" events. Although the philosophy of behaviorism is fairly new it addresses difficult and long standing issues which are not. We are convinced that study of the historical development of behaviorism is necessary in order to effectively understand a naturalistic science of behavior. As Zuriff (1985) stated "...by ignoring the past, de novo philosophizing adopts the term 'behaviorism' only by expropriation while losing the conceptual substance of the term" (p. 3).

Conclusions

As part of the concluding remarks of this paper it might be helpful to begin with the following four questions that deal with the function of historico-critical analyses. These are difficult questions; however, we suggest they are important questions for any behavior analyst to answer in that the answers have implications for the future of behavioral investigations.

1. What basic assumptions do you hold about the nature of behavior, why do you hold them, and which if any are incompatible with other assumptions or with fundamental rules for scientific behavior?

2.Could someone who understands the historical development of behavioral investigations point out inconsistencies or deficiencies in your own assumptions?

3. If you were to realize there were inconsistencies or deficiencies in your basic views would this have any value to you?

4. If you were (or are) familiar with your own basic assumptions and are informed as to why you chose these assumptions would this (or does this) help you better understand your own positions on issues pertaining to the scientific study of behavior and the positions of others?

As behaviorists we follow certain rules. In the following, Kantor (1969) describes the relatedness of postulation and procedures and the importance of both in scientific investigation:

All experimental work in the sciences consists of at least two outstanding phases: one covers the hypotheses and interpretations that guide the initiation of the project; the other consists of the manipulative procedures performed by an observer upon the particular things and events studied. The former we can generalize as postulation and the latter as procedures. In the most effective work the two phases are harmonious and support each other, but when it is postulated that the subject under investigation is unamenable to observation a break is made between postulation and procedures. In psychology the break is most pronounced when the postulates concern extraspatial processes. (p. 281)

Because a behavioral [world] view is in direct conflict with many generally accepted cultural beliefs it can be difficult for the acting behavioral person to maintain (in a consistent manner) the behavioral philosophy. In the educating of behaviorists it seems that cultural rules may be more powerful than the philosophy associated with behaviorism if behaviorism is taught in the absence of its contextual historical development. We might appreciate that a behavioral view is extremely difficult for individuals understand (or behave in accordance with) when it cannot be discriminated from other more generally accepted views. We suggest that the systematic incorporation of historico-critical analysis into behavior analysis stands a chance of contributing at least somewhat to what Michael (1980) described as an increasing problem in the performance of behavioral students in maintaining an authentic behavioral perspective: "Our graduates are increasingly insensitive to mentalistic encroachments into the field and do not constitute a verbal community functioning to provide mutual support and criticism. Their behavioral approach can become so diluted that it is really a form of eclecticism, and while they may be better liked by their nonbehavioral colleagues their effectiveness in dealing with behavior is severely limited" (p. 16).

Admittedly, some time must be devoted to the further development of historico-critical analyses. Because behavioral science (like all sciences) is cumulative, we are forced to interact with historical events. If we misunderstand the history we misunderstand our science.

References

Einstein, A., & Infeld, L. (1938). The evolution of physics. New York: Simon & Schuster.

Kantor, J. R. (1963). The scientific evolution of psychology (Vol. 1). Chicago: Principia Press.

Kantor, J. R. (1969). The scientific evolution of psychology (Vol. 2). Chicago: Principia Press.

Kantor, J. R. (1981). Interbehavioral philosophy. Chicago: Principia Press.

Mach, E. (1942). The science of mechanics: A critical and historical account of its development (T. J. McCormack, Trans.). LaSalle, IL: Open Court Publishing. (Original work published 1883)

Michael, J. (1980). Flight from behavior analysis. The Behavior Analyst, 3, 1-22.

Naess, A. (1965). Science as behavior: Prospects and limitations of a behavioral metascience. In B. B. Wolman (Ed.), Scientific psychology: Principles and approaches (pp. 50-67). New York: Basic Books.

Parrott, L. J., & Hake, D. F. (1983). Toward a science of history. The Behavior Analyst, 6, 121-132.

Skinner, B. F. (1931). The concept of the reflex in the description of behavior. Journal of General Psychology, 5, 427-458.

Smith, L. D. (1986). Behaviorism and logical positivism: A reassessment of the alliance. Stanford, CA: Stanford University Press.

Zuriff, G. E. (1985). Behaviorism: A conceptual reconstruction. New York: Columbia University Press.