Book Review

Echoes from the Past: A Review of John M. O'Donnell's *The Origins of Behaviorism*

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The field of animal learning is in crisis. Some say that it should be absorbed into biology. Others, who admit that animal learning belongs in psychology, say that it is a narrow area with little relevance to the real world. Many psychologists, as well as the people who provide research funding, see increased applied research with humans as the way of the future. They believe that psychology should be more practical. Therefore there is little funding available for basic research. The prevalence and visibility of antivivisectionists make research with nonhuman subjects even more difficult to perform and unpopular with university administrators. The inevitable result is that the number of young researchers in animal learning is few, and the influence of animal learning on the American Psychological Association (APA) minimal. New animal learning Ph.D.s must take applied research jobs because there are no jobs in basic research. The tension between basic and applied researchers mounts.

This is a reasonably accurate description of animal learning today, but it is also an accurate description of animal learning (the main research area from which behaviorism arose) just prior to John Broadus Watson's announcement of behaviorism in 1913. John M. O'Donnell's book, *The Origins of Behav-*

iorism, depicts the development of these earlier characteristics in great detail, covering the period from 1870 to 1920. Its scope is broad in the sense that it includes all types of historical material, not just the progression of published psychological theories. For example, in telling us about how animal learning began in the United States, the book gives a great deal of information about the general history of experimental psychology, such as the beginnings of the Harvard and Johns Hopkins psychology departments, and the lives of individual psychologists. It also characterizes movements in experimental psychology that contrasted with behaviorism.

The point of the book is not to describe behaviorism itself or any behaviorist's theories in fine detail, but to describe the social, political, financial, theoretical, and technical trends that were responsible for behaviorism becoming a significant psychological force by 1920. The resulting portrait of the early history of animal learning and the context in which animal learning operated indicates that the pressures on animal learning then were surprisingly similar to the pressures on animal learning today.

The basis of operant conditioning, a major component of animal learning, is that past events are used to describe and predict future behavior. This is also, of course, the principal reason for studying history. Given the parallels between animal learning in the early twentieth century and animal learning today, perhaps we, as students of operant conditioning, can learn something from O'Donnell's book that will be relevant to the future of animal learning.

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In drawing such parallels one must realize that a history of any area is difficult to undertake. It is impossible to present a totally unbiased view of any past era. In the present case, so much material is available from the time period O'Donnell covers, that it would be possible to select evidence for a variety of points of views regarding the origins of behaviorism. Nevertheless, O'Donnell makes a fairly good case for his view, which is that, ultimately, behaviorism arose and quickly became a major force in psychology because of the strong influences at the time toward practical, applied psychology. Much of the book is organized around the development of this theme.

O'Donnell first describes the origins of experimental psychology, and the influence that Wundt and the European training of most early American psychologists had on these early events. Gradually, psychology developed its own set of experimental techniques with its own faculty and departments; psychology distinguished itself from philosophy under whose auspices it began. Thus, psychology became a profession, but it was an isolated profession. Research involving introspection of sensory characteristics had little obvious relevance to real life psychological problems. At the same time, however, in addition to introspection, there was another influence in psychology—an objective, comparative, functional, and practical influence arising out of Gall's phrenology and bolstered by the development of evolutionary theory. This latter work established a tradition of practical research that was geared toward results and toward the solution of problems.

As O'Donnell's book goes on to describe, it was in the context of these varied theoretical orientations that experimental laboratory research began to grow. At first it grew relatively rapidly because practically any subject of inquiry was new. To substantiate this point, O'Donnell gives the following 1894 quote from Baldwin: "The actual state of the subject is such that research is a matter of comparatively less difficulty than in the older scientific branches" (p. 151). However,

although experimental research was growing, there was no unifying theoretical paradigm to hold it all together.

By the early twentieth century, there were, in general, strong pressures on all research psychologists to do studies with practical applications. Universities had limited funds, and so frequently decided to give their financial support to the research that appeared most likely to have immediate benefits. Universities also felt the need to stay on good terms with their communities. This frequently resulted in the university administrators arranging for psychologists to speak to local groups, and of course these talks would have to cover topics that the local population found interesting and worthwhile. During World War I, many psychologists were called upon to contribute their expertise to the war effort, apparently with many benefits for the war and for applied psychology as a whole.

As O'Donnell points out, in this atmosphere it was difficult to maintain a research effort consisting entirely of basic research, no matter what the actual desires of the researcher. This was perhaps especially true for those working in the area of animal learning, because of the obvious problems in convincing anyone of the relevance for humans of research with nonhuman subjects. Research with nonhuman species was also more expensive than many other types of research, and subject to criticism by antivivisectionists. Therefore, administrative support was very difficult to garner for investigations into animal learning; indeed, there were very few active animal learning laboratories. Many administrators would devote resources to the teaching of psychology, but not to psychology laboratories.

Consequently, more Ph.D.s were graduating from animal learning laboratories than there were job openings, as is true today. O'Donnell relates several sad stories, that sound all too current, regarding the fate of new animal learning Ph.D.s. A good example is Lawrence Wooster Cole who was a student of Yerkes and who obtained his M.A. degree from Harvard in 1904. He was first hired as a

full professor at the University of Oklahoma where he had previously taught. His research there was conducted with raccoons. After four years he was fired because of retrenchment. Cole was apparently unable to find another job in animal learning, and so he returned to Harvard to obtain his Ph.D. He graduated in 1910 and was now able to find a job as an experimental psychologist, this time at the University of Colorado, but his title had regressed to that of instructor. Almost immediately he began to switch to educational psychology, and in 1912 he became a full professor as well as head of the psychology department at Colorado.

O'Donnell also notes that every one of Yerkes's students that Yerkes considered significant enough to mention in his 1943 memoir of the origins of comparative psychology had left animal psychology for various forms of applied human psychology within just a few years of the student's graduation from Harvard. Finally, O'Donnell gives a poignant quote from H. L. Hollingworth, a faculty member at Columbia University and one of the pioneers of applied psychology. According to Hollingworth, he never had "any genuine interest in applied psychology [He] became an applied psychologist in order to earn a living" (pp. 224-225).

Therefore, while many applied researchers clearly felt that those engaged in animal learning were wasting their time, others, having migrated from animal learning themselves, were quite sympathetic. Whether psychology should devote itself to basic research or to the solution of real problems was a significant issue.

O'Donnell further points out that because many basic researchers in animal learning were forced to turn to applied psychology, animal learning researchers had little influence in APA, founded in 1892. A similar situation is occurring now. Beginning in 1987, Division 25 of APA, the Division for the Experimental Analysis of Behavior, will have only one representative to the APA Council, instead of its traditional two, because of

the Division's inability to garner the votes necessary for two representatives. At the same time, APA is putting increasing effort into meeting the needs of clinical psychologists, something on which many of the basic researchers resent spending their membership fees. Consequently, APA has recently raised its annual membership fees \$50 for health service providers, but not for basic researchers.

The situation faced by a new Ph.D. in animal learning in the early twentieth century was not precisely identical to the one a similar student faces now. In the early 1900s, there were no jobs because there were simply very few laboratories. Today, of course, administrators realize the necessity of having psychology laboratories in addition to psychology lecture courses, so that there are a fair number of laboratories. Most researchers in animal learning, however, seem to agree that the number of these laboratories is not growing and is perhaps decreasing, at least in part due to lack of sufficient funding and pressure from animal rights activists. In addition, a great many Ph.D.s were hired in animal learning around 1960, none of them having yet reached retirement, and hence few jobs are available. A recent informal survey of animal learning researchers in 18 major East Coast universities (Logue, 1986) identified 15 tenured faculty who work in this area and whose ages could be obtained. Of these, 33% were between 51 and 55 years of age; however only 27% were between the ages of 56 and 70. In other words, very few of these researchers will retire within the next 10 years, but then there will suddenly be a great many retirements with many possible job openings (if the retirees are replaced).

One wonders, however, who will take the retirees' places, if anyone. The perception of many animal learning researchers is that relatively few new, very intelligent and motivated, animal learning Ph.D.s are currently being produced. That number is likely to decrease as the current tenured faculty ages. In 15 years, only 4 of the 15 faculty in the survey will be less than 60 years of age, and only 1 of these will be less than 50. One might

predict drastic changes in the field at that time.

Many of the points made in O'Donnell's book concerning the character of early animal learning in the United States are nicely illustrated by Watson's career. Watson, like many of the other animal learning researchers of his time, struggled at first to rise on the academic ladder. He was initially hired at the University of Chicago where he obtained his Ph.D., but only as J. R. Angell's assistant. It took him two years before he was promoted to instructor, a rank at which he remained until he was approached several years later for a position at Johns Hopkins University. Hopkins was a relative newcomer to the university scene without the track record of Chicago, and offered Watson a full professorship. Despite this offer, and the fact that Watson's publications were being received well, Chicago refused to offer him even an associate professorship. Watson had no choice but to go to Hopkins (Watson, 1936).

At Hopkins he was subject to many of the same pressures to do applied work that were being put upon his colleagues. In fact, contrary to what O'Donnell states, Watson was interested in applied research prior to his being forced to leave Hopkins and choosing advertising as his new career in 1920. Prior to 1920, he and Lashley published their first paper on the research that they had been doing on sex education (Lashley & Watson, 1920). He also published several popular articles which, although not based on actual applied research, were definite attempts to apply what was known from the laboratory to real world situations (see, e.g., Watson, 1907, 1912; see also Logue, 1978, 1985). It is not surprising, then, that Watson's announcement of behaviorism in 1913 stated that the goal of behaviorism was to predict and *control* behavior.

Thus, although Watson's behaviorism arose out of basic research with nonhuman species, his behaviorism made it very clear that this was a basic research approach likely to generate big practical payoffs. O'Donnell states that in 1919

APA defined applied psychology as the attempt to control behavior, a definition that was virtually equivalent to Watson's definition of behaviorism. Behaviorism provided both the practical emphasis that research psychologists needed, particularly those psychologists in animal learning, as well as a unifying theoretical theme, something that had also been lacking up to this point. Therefore it simultaneously became both very popular and very controversial.

While O'Donnell's book contains many valuable insights into behaviorism, it does include an occasional inaccuracy. For example, page 218 describes an APA committee as recommending that psychology be taught as the science of behavior in 1910, making it appear that Watson's 1913 announcement of behaviorism was more of a representation of current trends than a revolutionary announcement, and that APA possessed a unified behavioral view. In reality, however, this APA report consisted of a number of individual committee members' reports. Thus, while Sanford's portion of the report does indeed state that "psychology is not best taught to beginners as the study of human *consciousness* but as the study of human *nature and behavior*" (Sanford, 1910, p. 64), Calkins' portion states that the purpose of a course in psychology is to help a student "explain his own perceiving, remembering, thinking, feeling, and willing. In the effort to classify and to explain, the student will of course attack the relevant facts of sense physiology and of bodily behavior[.] He will study these however as conditions and accompaniments of consciousness" (Calkins, 1919, p. 45).

As another example, page 239 of O'Donnell's book makes the point that experimental psychologists greatly valued their experiences and contributions in World War I. Watson's impressions on this matter are not mentioned, probably because they do not agree with this point: "The whole army experience is a nightmare to me. Never have I seen such incompetence, such extravagance, such a group of overbearing, inferior men" (Watson, 1936, p. 278).

There are also occasional points in the book for which no citations are provided. Traditional footnotes are used, hence it can be quite time consuming to find the full citation including the date for a particular citation. All of this can be frustrating.

In general, however, this book is well written and entertaining, and its points are well supported. It paints a rich, detailed picture of life as experienced by an experimental psychologist during the late nineteenth and early twentieth centuries. This was not an easy time to be an experimental psychologist, particularly if you were interested in animal learning. Perhaps we can take courage from these early researchers who persisted despite much adversity, and hope that if animal learning grew and gained in popularity following a period of disfavor prior to 1920, then it may do so again. If the book's thesis is correct, however, animal learning researchers may have to point out clearly the practical implications of their work if their research is to survive.

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