APPLIED BEHAVIOR ANALYSIS AT WEST VIRGINIA UNIVERSITY: A BRIEF HISTORY

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The development of an emphasis on applied behavior analysis in the Department of Psychology at West Virginia University is traced. The emphasis began primarily in the early 1970s, under the leadership of Roger Maley and Jon Krapfl, and has continued to expand and evolve with the participation of numerous behavior analysts and behavior therapists, both inside and outside the department. The development has been facilitated by several factors: establishment of a strong behavioral emphasis in the three Clinical graduate programs; change of the graduate program in Experimental Psychology to a program in basic Behavior Analysis; development of nonclinical applied behavior analysis within the Behavior Analysis program; establishment of a joint graduate program with Educational Psychology; establishment of a Community/Systems graduate program; and organization of numerous conferences. Several factors are described that seem to assure a stable role for behavior analysis in the department: a stable and supportive "culture" within the department; American Psychological Association accreditation of the clinical training; a good reputation both within the university and in psychology; and a broader community of behavior analysts and behavior therapists.

DESCRIPTORS: applied behavior analysis, West Virginia University, graduate programs, history, behavior therapy

We will first sketch the sequence of developments involving applied behavior analysis in West Virginia University's (WVU) Department of Psychology. In the process, we will try to give a sense of the character of applied behavior analysis in that department. Then we will point out additional characteristics of the department that are relevant to applied behavior analysis. Finally, we will address why applied behavior analysis has flourished and should continue to flourish at WVU. Throughout, we will cite publications that illustrate the research of our faculty and a few of our students so that the character of our interests becomes clearer.

DEVELOPMENTS INVOLVING APPLIED BEHAVIOR ANALYSIS AT WVU

Early origins. When the department first received Board of Governors approval to offer the PhD in 1958, it already had some behavioral em-

phasis. Like most psychology departments, we have always had one or more "experimental" psychologists (a term unfortunately implying that applied psychologists are not experimenters; Hawkins, 1991) with an interest in basic "learning" (i.e., behavior) principles. But the department's emphasis on applied behavior analysis, specifically, had its beginnings around 1970, when Roger Maley and his students set up a token economy at Weston State Hospital (e.g., Bennett & Maley, 1973; Ruskin & Maley, 1972). Like many who entered behavior analysis in the 1960s and 1970s, Maley, a clinician, was not trained as a behavior analyst but learned enough of it to become enthusiastic about its promise and results.

Also in the early 1970s, James Shafer, a basic scientist who directed the graduate Experimental Psychology program for several years, had become fairly interested in behavior analysis, both basic and applied; Kent Parker, of that same program, developed similar interests. Those two did some applied behavior analysis consulting to a Pennsylvania institution for persons with mental retardation. In addition, Kennon A. (Andy) Lattal, who was hired for the Experimental program in 1972, had experience and training in both basic and applied

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behavior analysis (e.g., Lattal, 1969). These factors helped set the stage for a change in direction for the department.

Beginning to gather and develop the behavior-analytic faculty. While Maley was associate chair in 1972–1973, he arranged the hiring of two people with strong commitments to applied behavior analysis: Jon Krapfl and Sharon Hunt. Krapfl was to direct our Professional Master of Arts in Psychology (PMA) program (which emphasized work with children), and Hunt was to serve on the clinical faculty, specializing in children.

Maley and Krapfl turned out to be a strong team and did a number of things to promote behavior analysis, both basic and applied. With the encouragement of John Cone, himself becoming an applied behavior analyst (e.g., Cone, 1973; Hayes, Johnson, & Cone, 1975), and other faculty and graduate students, they recruited Barry Edelstein and Robert Hawkins in 1974 (e.g., Edelstein, 1989; Edelstein & Yoman, 1991; Schwarz & Hawkins, 1970). In graduate school, Edelstein had completed dual specializations—clinical psychology and experimental analysis of behavior—so he was formally prepared to contribute to a behavior-analytic emphasis. Hawkins' "training" had been more informal; he had gradually become a behavior analyst during appointments at University of Washington, University of Kansas (as postdoctoral fellow), and Western Michigan University.

Hawkins initially came to WVU as Director of Clinical Training, in charge of the APA-accredited PhD program in clinical psychology. In about 1976, we divided that program into two, with Edelstein serving as Coordinator of Adult Clinical, Hawkins as Coordinator of Child Clinical, and Krapfl as overall Director of Clinical Training and Director of Graduate Training. Hunt took Krapfl's place as Coordinator of PMA.¹ From that point, behavior analysis has developed in every graduate program in our department.

Figure 1 shows those regular faculty (excluding adjunct, but including "visiting") who, over the years, have had substantial involvement in either basic behavior analysis (with no identifying mark beside their name), applied behavior analysis (identified with an asterisk), or behavior therapy (identified with a caret).

Development of a Behavior Analysis graduate program. In 1976 the department reorganized its graduate program into six: Behavior Analysis, Life-Span Developmental, Adult Clinical, Child Clinical, Professional Master of Arts (PMA, which is clinical), and Educational Psychology. Each program is directed by its own training committee, which is chaired by an "Area Coordinator." Although the training committees are rather independent, there is considerable cross membership, thus facilitating communication and cooperation. In addition to those six graduate programs, for a period of time we had a Community/Systems program. We will organize our history largely around these seven programs.

In 1976, the Experimental Psychology program was renamed the Behavior Analysis (BA) program, thus committing this basic science branch of the department to behavior analysis. Don Hake was hired as BA Coordinator. He was interested in "bridging" basic and applied behavior analysis (Hake, 1982), which helped to further applied behavior analysis in the program. Hake's influence regarding bridging is reflected in the work of several BA faculty, including Philip Chase (e.g., Danforth, Chase, Dolan, & Joyce, 1990; Joyce & Chase, 1990; Smith & Chase, 1990), who is now the chair of the department, and Andy Lattal (e.g., Mathews & Lattal, in press), who has also served as chair.

When Hake died unexpectedly in 1982, he was at the height of his career, had numerous graduate students working with him, was president-elect of the Association for Behavior Analysis, and was editor-elect of *The Behavior Analyst*. Lattal became Coordinator of the BA program (and, interestingly, became an associate editor of the *Journal of the Experimental Analysis of Behavior* and is now president-elect of both the Association for Behavior Analysis and Division 25 of the American Psycho-

¹ In 1992, we merged the PMA program into the Adult Clinical and Child Clinical programs, so each of these now has a PhD track and a PMA track. Robert Hawkins and Georg Eifert-McLarnon are Codirectors of Clinical Training, each coordinating one of the two programs.

Figure 1. Changes in the makeup of behavior analysis and behavior therapy faculty in the Department of Psychology, West Virginia University, during almost 25 years of its development as a center for applied behavior analysis. Horizontal bars represent the years in which each person served on the faculty. Bars reaching the right extreme of the figure show the current faculty. Only faculty with significant involvement in basic or applied behavior analysis, or in behavior therapy, are included. Although full-time "visiting" faculty are included, adjunct faculty are not.

logical Association). At that same time, William Redmon, an applied behavior analyst, came as Coordinator of PMA, but with substantial involvement in the BA program. When Redmon left, the department reassigned the position to the BA program, which committed it to hiring applied behavior analysts: Mark Alavosius and, currently, John Crosbie (1993, in press).

Three other behavior analysts who were here on visiting appointments were Terry Knapp, Roger Lubeck, and Linda Hayes (nee Parrott). Hayes was here for more years than Figure 1 shows, because for her initial 2 years she was a visiting graduate student (from Western Michigan University).

Other applied work in the BA program. The BA program has done even more than dedicate

faculty positions to applied behavior analysis. BA faculty provide most of the basic course work that serves as a foundation for applied behavior analysis conducted by graduate students in any of the department's programs, such as Experimental Analysis of Behavior, Single-Subject Design, Behavior Theory and Philosophy, and Stimulus Control and Memory. BA faculty also teach some applied courses, such as Applications of Behavioral Research, Drugs and Behavior, and Organizational Behavior Management.

Another factor that integrates basic and applied work is illustrated by the work of Michael Perone, who is now associate chair of the department. Perone conducts basic research with humans as well as nonhumans, providing another bridge between

basic and applied interests (cf. Baron, Perone, & Galizio, 1991; Critchfield & Perone, 1990; Perone, Galizio, & Baron, 1988). The broad range of expertise and interests among BA faculty has made it easy for students in the Clinical and Developmental programs to work with these faculty on both applied and basic behavior-analytic research. For example, BA faculty have many times directly supervised these students' basic research theses, dissertations, or other projects (e.g., Allen & Lattal, 1989; Danforth *et al.*, 1990; Freeman & Lattal, 1992).

Three additional developments within BA have involved applied behavior analysis. First, in the past few years, Lattal has developed a behavioral treatment service for people's pets, called Goodpets. Second, David Schaal, a behavioral pharmacologist, recently joined our faculty, and his combined interests in basic and applied behavior analysis (e.g., Thompson, Axtell, & Schaal, 1993) again enhance the basic-applied bridge. The third development was not initially associated with the BA program, although it has become so—the behavioral systems emphasis in the department, to be described shortly.

Joint program with Educational Psychology. Some of the developments already described were intertwined with our having a joint PhD program with the Department of Educational Psychology. By 1968, that department already had four behavior analysts: Ernest Vargas, Julie Vargas, Lawrence Fraley, and Richard Walls. About 1971, Rogers McAvoy, the chair of Educational Psychology, arranged for that department and the Psychology Department to collaborate on a joint graduate program in which students would take course work in both departments, conduct research with faculty in either department, and earn a PhD. This allowed some interesting collaboration across departments—between faculty, between students, and between faculty and students. The joint program had its own training committee, which selected applicants to admit, determined the curriculum, and so on. The committee had faculty from both departments, including, among others, McAvoy, Daniel Hursh (hired in 1975), and Walls from

Educational Psychology, and Shafer, Edward Caldwell, and Parker from Psychology.

The joint program brought in several productive, nonclinical applied behavior analysts as students, many of them from the undergraduate or masters program at Western Michigan University. The program had linkages with Gil Sherman and Robert Ruskin at the Center for Personalized System of Instruction (Sherman, Ruskin, & Semb, 1982) at Georgetown University, so there was considerable interest in research and development in behavioral instruction. Many of the students were interested in the design and modification of "behavioral systems," such as training programs for persons with handicaps, staff training and supervision, Maley's token economy work in a mental hospital, or monitoring and evaluation of intervention programs.

Approximately 25 graduate students went through the joint program during its existence. It was terminated about 1977, a development that may have fueled the desire of Psychology graduate students and faculty to augment the applied behavior analysis opportunities available in our own department in addition to those that were very clinically oriented.

Development of a behavioral systems emphasis. By the mid-1970s, quite a bit of the applied behavior analysis in the department had addressed behavioral systems. Beginning about 1976, we attempted to formalize that emphasis by forming a graduate program called Community/Systems. It involved such faculty as Maley, Krapfl, Dwight Harshbarger (Harshbarger & Maley, 1974), Stanley Cohen (DeProspero & Cohen, 1979), James Noah, William Hutchinson (1982), and John McSweeney (1978). In about 1980, it had to be terminated as a designated program, because it proved to be too amorphous, and we did not have enough departmental faculty (21 to 25, depending on the year) to serve all of the graduate programs well. However, there was still great interest among faculty and students in behavioral systems.

The department has been able to continue the systems emphasis because of an alliance between BA and the Center for Entrepreneurial Studies and

Development (CESD), a university-affiliated consulting firm that markets the skills of faculty and students to business and industry regarding various training, management, and other organizational issues. When Chase joined our department, he already had experience in behavioral systems analysis and found that not only did his colleague Redmon have similar interests, but so did several graduate students. Chase made contact with Jack Byrd, the chair of Industrial Engineering, who had founded CESD about 1980. This led to a practicum for Julie Smith, then a BA student. Smith continued work at CESD while she finished her PhD, was hired full time, and eventually became deputy director. She, in turn, influenced the hiring of Leslie Wilk, a behavior analyst trained at Western Michigan University. Smith and Wilk went on to establish their own consulting firm in Morgantown, the Continuous Learning Group, in which they employ several full-time PhD behavior analysts and provide training for both graduate and undergraduate students. Chase and, until he left WVU in 1986, Redmon had many consulting experiences through CESD and supervised several graduate and undergraduate students on practica there and, now, in the Continuous Learning Group.

Because of the combination of basic and applied work within BA, it seems fair to say that BA is currently doing the most to actualize the "bridging" between applied and basic science that many of us throughout the department value highly.

Development of applied behavior analysis in Child Clinical and Adult Clinical programs. The hiring of Krapfl was probably the most critical event installing applied behavior analysis in the clinical programs, because when he and Maley—with the support of Cone, Hunt, and several graduate students—brought Edelstein and Hawkins to lead the clinical programs, there were enough behavior analysts to set those programs consistently in the direction of behavior analysis and behavior therapy.

Over the years, clinical faculty and graduate students have developed several important community programs where they could conduct applied be-

havior analysis. For example, while Trevor Stokes (who coordinated the PMA program) and Pam Osnes were here, they developed a preschool that served as a training ground and research center for graduate and undergraduate students (e.g., Guevremont, Osnes, & Stokes, 1988; Stark, Collins, Osnes, & Stokes, 1986). Cone and Hawkins established the state's first classroom for students with severe and profound developmental disabilities, which provided learning experiences for several graduate and undergraduate students. This project included the development of a major curriculum for training students with severe disabilities (Cone, 1984) and a curriculum for informal skill-maintenance activities to be used by family members (Hawkins et al., 1983). Hawkins and a graduate student, along with colleagues at a child-care and treatment agency in Pittsburgh, established a type of program Hawkins calls "foster-family-based treatment," and several graduate and undergraduate students got applied behavior analysis experience there (e.g., Goss, Hawkins, Fabry, Meadowcroft, & Trout, 1990; Hawkins, Meadowcroft, Trout, & Luster, 1985). David Hansen established a state-supported, home-based treatment program within the department for families reported for child abuse, and a number of studies have come from that project (e.g., Hansen & MacMillan, 1990). Hansen also played a major role in developing our own in-house clinic, the Quin Curtis Center (e.g., Hansen, MacMillan, & Shawchuck, 1990; Scotti, Nangle, Mathews, & Hawkins, 1992). It is now directed by Judith Mathews (e.g., Mathews, Friman, Barone, Ross, & Christophersen, 1987; Mathews, Hodson, Crist, & LaRoche, 1992), who is currently establishing a special service within the Curtis Center for working with infants and very young children and their families. Joseph Scotti has recently established a program of consultation and assistance to special education that is providing both clinical behavior analysis experience and research opportunities in developmental disabilities for graduate and undergraduate students (e.g., Scotti et al., 1993, in press). Edelstein has worked with some of our state hospitals where persons with chronic,

severe mental illness are served (e.g., Wong *et al.*, 1993). His graduate course in interviewing has also been the impetus for a number of studies (e.g., Edelstein & Yoman, 1991).

Support from the Developmental program. Most faculty serve on two training committees: the one representing their primary interests and a second one of interest to them. Thus, faculty who are not primarily behavior analysts are very much involved in the development of applied behavior analysis within the BA and Clinical programs. Faculty whose primary commitment is in Life-Span Developmental are particularly relevant here. Especially notable for his support is Hayne Reese, who has not only served on the BA training committee for several years but also publishes in the behavior-analytic literature as well as in the developmental literature (e.g., Reese, 1982, 1986, 1993). Other examples are Cohen, who has published in the applied behavior analysis literature (e.g., DeProspero & Cohen, 1979) and served as a resource for both students and faculty doing applied behavior analysis; Mark Cummings, who not only serves on the Child Clinical training committee but also has chaired behavioral theses; and Raymond Shaw, who serves on the BA training committee and is very knowledgeable about and supportive of behavior analysis.

The role of conferences. One thing that has helped shape the department and promote discussion, enthusiasm, and a good reputation was our organizing specialized conferences almost yearly, sometimes twice in a year. These usually led to a book based on the proceedings. The most frequent ones have been conducted by the Developmental program, and those have sometimes included behavior-analytic papers (e.g., Perone, *in press*). A 1973 conference on community-clinical psychology, coordinated by Harshbarger and Maley (1974), was an attempt to integrate systems analysis and behavior analysis. A 1975 conference that was all applied and all behavioral, although not all behavior-analytic, was coordinated by Cone and Hawkins (1977) and dealt with behavioral assessment at a time when that was first being identified as a field of theory and research. Soon after that, Krapfl and Ernest Vargas (1977) coordinated a thoroughly

behavior-analytic conference on behaviorism and ethics. In 1979, McSweeney, William Fremouw, and Hawkins coordinated a conference of primarily applied behavior analysts on evaluating treatment programs for youth (McSweeney, Fremouw, & Hawkins, 1982). In about 1981, Frank Collins, Sharon Foster, and Ellen Berler assembled a conference on behavioral training in clinical psychology that stimulated several articles by various authors. Chase and Linda Hayes coordinated a conference in 1982 on verbal behavior that contributed to a book (Chase & Parrott, 1986). In 1983, Lattal and Peter Harzem, of Auburn University, coordinated a conference on future directions of behavior analysis, the proceedings of which were presented in the first special issue of *Journal of the Experimental Analysis of Behavior* (Lattal & Harzem, 1984).

ADDITIONAL CHARACTERISTICS OF APPLIED BEHAVIOR ANALYSIS AT WVU

We have already said much about the kinds of applied behavior analysis done here, but we should point out a few further characteristics. First, much of the applied behavior analysis that relates to clinical issues might escape the notice of most readers of the *Journal of Applied Behavior Analysis*. For example, several faculty have had a substantial interest in clinical or educational assessment from a behavior analyst's perspective (e.g., Cone, 1981; Foster & Ritchey, 1979; Hansen & MacMillan, 1990; Hawkins, 1979, 1986; Martinez-Diaz & Edelstein, 1979; Scotti, Evans, Meyer, & DiBenedetto, 1991). In fact, Cone helped found and served as editor of *Behavioral Assessment*, Foster served as an associate editor, and others in the department served on the editorial board.

In addition, we should point out that not all applied behavior analysis conducted by our clinical faculty and students has been of a clinical nature. For example, Hayes *et al.* (1975) studied a method of controlling litter in a federal prison, Wyatt and Hawkins (1987) studied the rates of teacher approval and disapproval in public school classrooms,

and Hayes and Hawkins (1975) studied the effects of some administrative procedures in graduate training.

It is evident in Figure 1 that not all behavioral clinical faculty at WVU are behavior analysts. Many are behavior therapists, in that they are following a generally behavioral paradigm, but not one that directly represents behavior analysis. Those of us who do consider ourselves behavior analysts respect their work highly, even though we would often use different terms to describe it and would sometimes use different assessment or intervention strategies.

Undergraduates, too, can become involved in applied behavior analysis at WVU, although perhaps not as easily as at Western Michigan University, where many behavioral undergraduate courses are available. Our Professional Field Experience course is one key factor that prepares students for work as applied behavior analysts. It involves the student's working, usually full time, in a clinical or other applied setting under the supervision of a behavior analyst.

STABILITY OF APPLIED BEHAVIOR ANALYSIS AT WVU

Behavior analysis and, specifically, applied behavior analysis seem destined to have a very lasting role in this department, due to at least four factors: the "culture" that has evolved within the department, APA accreditation, the department's reputation, and a supportive outside environment.

The department's "culture." When Hawkins and Edelstein came to WVU, it was obvious that there had been heated disagreements and displacements regarding organizational, theoretical, and specific hiring issues related to a behavior-analytic perspective. That has changed in the past 20 years. What seems to have happened is that we have had a number of reasonable faculty who respect others' viewpoints, we have had several behavior analysts who recognize some current limitations in behavior analysis (still a young discipline), and we usually make decisions by arriving at a consensus, giving every person ample, repeated, and respectful opportunity to have his or her opinion heard. In

addition, probably due largely to Krapff's influence, we have arrived at a tradition of valuing the long-term quality of the training program over individual faculty's personal benefits, and we involve graduate students extensively in decision making. These practices are often time consuming, but they tend to minimize conflict, over the long run, and maximize various reinforcers on the job, thus promoting stability in the department's policies, procedures, and personnel.

American Psychological Association accreditation. The Clinical training program at WVU was provisionally accredited by the APA in 1966 and fully accredited in 1968. Because APA's criteria are relatively stable, this alone probably influences a department's stability. In addition, most academic clinicians would prefer to teach in an APA-accredited program (because it is more prestigious than nonaccredited programs, attracts more qualified graduate students, etc.) so it is easier to keep good faculty, again promoting stability.

Reputation. The department is highly respected on WVU's campus. We are among the most productive of research, we attract and retain many of the best graduate students, and our faculty have won numerous university and state awards in each of the three areas on which university faculty are typically evaluated: teaching, scholarship, and service. Over the past two decades of behavior-analytic emphasis, we have acquired a reputation for excellent training and research in the Association for Behavior Analysis and in the Association for Advancement of Behavior Therapy. Even APA seems to recognize us as a good department, given the fact that our clinical program continues to receive full APA accreditation every 5 years.

Supportive outside environment. Besides having a "critical mass" of behavior analysts inside the department, an important factor that supports applied behavior analysis in Psychology at WVU is the presence of several behavior-analytic faculty outside the department. As mentioned earlier, in Educational Psychology alone there currently are Fraley, Hursh (also an adjunct professor in our department), E. Vargas, J. Vargas, and Walls. Anne Nardi and McAvoy in that department are also

knowledgeable about behavior analysis and quite supportive. In Counseling Psychology, both William and Sherilyn Cormier are behavioral, have been quite involved on thesis and dissertation committees, and have been supportive in other ways. Roy Moxley, a behavior analyst in Curriculum and Instruction, has served on several research committees and participates in other ways.

There are also two service and research centers on this campus with applied behavior analysts who hold adjunct appointments in the department and have been quite involved in training our students: the University Affiliated Center, with Donald Kincaid and Sherry Wood-Shuman; and Chestnut Ridge Psychiatric Hospital, which has Andrew Bradlyn, Michael Franzen, Virginia Goetsch, Richard Gross, Carole Harris, Jennifer Haut, Marc Haut, Richard Seime, and other behavior therapists.

We should also mention that many of our graduates are in influential positions in the state behavioral health system. For example, the state Secretary of Health and Human Services earned her PhD with us. Her husband did also and is the executive director of the nearest community mental health center. The person currently in charge of children's mental health services in the state earned his degree in our PMA program, as did the associate directors of two community mental health centers. Numerous staff of mental health centers throughout the state earned graduate degrees in our PMA program or undergraduate degrees with us. In addition, the West Virginia Autism Training Center, at Marshall University in Huntington, is directed by Barbara Becker, a behavior analyst. Also at Marshall University is Joseph Wyatt, editor of *Behavior Analysis Digest*, who earned his PhD with us.

In neighboring Pennsylvania, there are several behavior analysts. The one who has been most important to applied behavior analysis in our department, however, is Pamela Meadowcroft, deputy executive director of The Pressley Ridge Schools. She, executive director W. Clark Luster, Bernard Fabry, Hawkins, and several graduate students collaborated for several years developing the foster-family-based treatment program mentioned earlier

(Goss *et al.*, 1990; Hawkins *et al.*, 1985). In the process of this work, several graduate students receive financial support. In fact, this is our primary method of supporting graduate students after their first year of graduate school. Our favorable relations with several behavioral health agencies and the Continuous Learning Group make possible the support of all Clinical students and many BA students through working on assigned practica in the community 2 days a week, under faculty supervision.

Thus, the department has a pleasant internal environment and a supportive external one, making it possible to attract and retain excellent faculty and graduate students. Both basic and applied behavior analysis play respected roles in the department, the university, and the community of the state. It seems that behavior analysis has a good future here.

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