Countercontrols for the American Educational Research Association

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Publications of the American Educational Research Association (AERA) maintain that years of research in education have failed to produce a useful technology for teachers. Little is said to be known about teaching children beyond the potential of new findings such as mastery learning, time on task, and features of an appropriate school climate. These latter conclusions are in stark contrast to the large body of useful findings in the behavior analysis literature. Several possible reasons are discussed for the discrepancy in views between behavior analysts and educational researchers. The lack of acknowledgement of behavior analysis is viewed as a serious problem because of the control that the educational research establishment exerts over federal funding of research and the training of teachers. There is a growing use of some of the aspects of behavior analysis by educational researchers; however, the derivation is not acknowledged and there is little enlightenment about radical behaviorism. It is suggested that ABA should countercontrol the influence of AERA by incorporating doctoral students in educational research as students of behavior analysis, teaching the complexity of behaviorism, teaching the positions of the opposing camp to behavior analysis students. ABA can take an aggressive role in countercontrolling AERA by forming committees to insure (a) quality of treatment, (b) funding representation in government, (c) protection and qualified review of untenured behavior analysts, (d) expansion of certification.

“Never before, in the history of mankind, have we known so much about the learning process or the conditions under which an individual human being can be effectively and happily trained for any occupation or profession” (Keller, 1978, p. 53). Keller’s statement is based on thousands of experiments in behavior analysis (Britt, 1975; Kazdin, 1980; Grossman, Note 1). The principles of behavior on which applied behavior analysis rests have been subjected to more investigations than new medicines, food additives, surgical procedures, airplanes, political candidates, or television shows. As a result, teachers have at their disposal a set of tools which, if used systematically, wisely, and broadly, do precisely what Keller says they can do.

There is a marked discrepancy between what behavior analysis offers the teacher and what the educational research establishment claims to be known about the teaching process. Articles in the journals of the American Educational Research Association (AERA) reiterate the theme that research has not provided useful instructional procedures for teachers. For example, one author

(Phillips, 1980) states that ‘the wise educational practitioner ought not to hold his or her breath waiting for new, reliable, far-reaching breakthroughs by researchers. A skeptical, if not cynical attitude towards research seems to be justified’ (p. 17).

The pessimism of AERA is widespread and has a long history, a history which has produced hundreds of experiments in teaching which in turn resulted in non-significant effects (Stephens, 1967). Massive factor analytic studies such as the Coleman report (1966) have reaffirmed the cosmetic nature of such variables as team teaching, teacher personality, amount of money spent per child, the number and type of support personnel (psychologists, counselors), authoritarian vs. open classrooms, and class size to name but a few sacred variables.

Given the dearth of significant findings in educational research, one would think that the abundance of educationally significant findings from behavior analysis would be eagerly embraced, or at least given careful attention. A perusal of the major journals of the AERA, such as *The Review of Educational Research*, *American Educational Research Journal*, and *Educational Researcher*, indicates that behavior analysis has received minimal regard. Books by influential

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members of AERA, such as those by Bloom (1976) or Gage (1978), make no mention of the substantial educational research done by behavior analysts. They show even less knowledge of the underpinnings of a philosophy of the science of behavior (Skinner, 1974).

In short, there is a shortage of substantial findings in educational research while there is a substantial body of findings in behavior analysis. In addition, behavior analysis has comprehensive extensions of the data and convincing philosophical positions (Skinner, 1974; Staats, 1975) which provide a repertoire of sophisticated arguments that deal with complex issues but are not couched in mentalistic terms. Yet, the tenor of the AERA is pessimistic about the role of research in education. Why do the findings of behavior analysis not offset the pessimism of AERA?

There are several possibilities. The educational research establishment is (a) naive about the evidence in behavior analysis, (b) controlled by setting events which lead them to distrust data, (c) controlled by anti-behavioristic biases, (d) naive about the refocus in educational questions provided by the philosophy of behaviorism. The task of the current paper is to examine each of these possibilities, suggest some possible answers, and propose what should be done to countercontrol AERA's influence on education.

NAIVETE ABOUT THE RESEARCH IN BEHAVIOR ANALYSIS

It is possible that many well-meaning educational researchers are naive about the findings in behavior analysis and the related principles and evaluation methods drawn from that research. Views about the more hopeful research findings inside the educational research establishment shed some light on the degree of naivete that exists. The hopeful findings are regarded as on-task time, mastery learning, and the identification of school climate variables which correlate with successful schools.

Several researchers working out of the Far West Laboratory have found that

students' on-task time is significantly related to student learning (Marliave, Fischer, Filby, & Dishaw, 1977). On-task time is defined as that portion of school time allotted to academic tasks in which the student is "engaged in the task." This is distinguished from transition time or periods of time in which the student is engaged in behavior other than that of the task assigned. According to Stallings (1980), "the body of knowledge emanating from research on teaching in the 1970's suggests that teachers should allocate more time to academic subjects keeping in mind ability levels and students should be kept engaged in the tasks" (p. 12). The author goes on to say however that much more needs to be known. She states that research has not determined how teachers are "to support students to keep them on task" (p. 12).

Numerous procedures for bringing about on-task time exist in the behavior analysis literature and existed prior to the work of Fredericksen (Note 2) and the work described by Stallings (1980). Furthermore, the behavior analysis research indicates that directly reinforcing productivity is more efficacious than reinforcing on-task time (Kazdin, 1980). Similarly, provision of opportunities to respond are prerequisites to keeping the student engaged in the task (Delquardi, Greenwood, & Hall, Note 3). None of the related behavior analysis research is cited in the Stallings (1980) article.

Another series of studies using massive factor analytic techniques suggest that there are certain characteristics of successful schools that overcome the socioeconomic background of pupils (Fredericksen, Note 2). Socioeconomic status (SES) and family background of school children have been consistently regarded as the best "predictors" of student achievement. The newly identified successful schools are said to have the following characteristics which overcome SES according to Edmonds (1979): (a) the principals of the school are strong leaders, (b) the teachers have high expectations for their students, (c) the school climate or atmosphere is one that is conducive to learning, (d) instruction emphasizes basic

skills, (e) pupil evaluation is frequent and linked to what children are to do.

The characteristics of good schools listed by Edmonds (1979) are probably by-products of effective instructional practice. The literature in behavior analysis pinpoints the teacher behaviors that are more likely to produce effective environments, specifies evaluation procedures that are linked to what the student does next, controls for high teacher expectation, and specifies what the teacher is to do when teaching basic skills. In short, the behavior analysis literature spells out what the teacher needs to do in order to bring about the characteristics of a successful school. Thus, even when the research of the educational establishment is closely related to behavior analysis literature there is no acknowledgement of that relationship.

A third hopeful trend has been the development of an approach described as mastery learning (Bloom, 1976). Mastery learning consists of repeatedly instructing the student until he or she masters the materials to be learned. In essence, mastery learning is one component of the Keller Plan (1968) or the Personalized System of Instruction (PSI).

Keller was doing mastery learning in the late forties (Keller, 1977). Mastery learning is the basis of programmed instruction (Skinner, 1968). Indeed, the notion of instruction *until* mastery must have been intimately associated with the survival of the species throughout history and continues to be tied with the survival of some individuals in terms of some occupations (e.g., pilots, surgeons, trapeze artists). Bloom's volume on mastery learning (1976) makes no reference to the work of Keller nor to the major research. The notion of mastery learning has been implicit in a large number of studies concerned with PSI (Hursh, 1976); yet, there is no citation by Bloom to the *Journal of Personalized Instruction*.

It is not possible to rule out naivete as the basis for the discrepancy between behavior analysis findings and claims of educational researchers because of the conspicuous lack of references by educational researchers to behavior analysis. It

should be noted that even the more hopeful educational findings are presented in a tentative fashion. This is understandable given the history of non-significant effects in educational research. Such a history would teach researchers to be cautious about their data, even to the point of being unpersuaded by data.

THE SETTING EVENTS FOR DISTRUST OF DATA

Fraley (1981) noted that education has been a profession with little or no technology. Of course, without the technology of behavior analysis and the philosophical tenets of the basic science of behavior analysis, professions such as clinical psychology (Rachlin & Wilson, 1980) suffer from similar inadequacies. Education, however, has the greatest potential for behavior change of any agency in society short of the family. Education offers the potential for design and construction rather than repair and rehabilitation. The teacher has exponentially greater number of opportunities than any professional behavior change agent. Unfortunately, education has not had a great influence on changing society. One educational historian (Greer, 1972) points to fairly solid evidence that public schools have served to hold minority groups back rather than contribute to their upward mobility. To reiterate a point often made by Keller (1978), schools have selected rather than educated.

In the 60's, much hope was placed on the potential of research to improve the capabilities of education. The methodology used was that of the social scientist, the same methodology that produced I.Q. tests and other ways to select rather than teach. The result of the research was the conclusion that we know nothing about teaching. Thus, the historical inadequacy of education, the use of a weak methodology, and the reliance on mentalistic questions were all contributing factors to distrust of research. A brief overview of educational research, its methodology, and its questions follows.

Much of the pessimism regarding data is a result of this history of non-significant differences in educational

research (Coleman, 1966; Stephens, 1967). The lack of differences is, I believe, attributable to the type of measurement used, the lack of direct contact with the student, the degree of control exerted by educational researchers, and the persistent pursuit of mentalistic solutions.

Educational researchers derived their measurement from traditional mentalistic measures of psychology. The intent of such measures is to study capacities of intellect, emotion, and the cognitive processes. Achievement and aptitude measurements are considerably removed from classroom behavior and such measures remove the researcher from the stimulus control of effective or ineffective procedures. The controlling variables for educational research behavior have become intraverbal (Madsen, 1975). It is only through experience with the control exerted by direct measurement that behavior analysts came to be controlled by the behavior of their subjects (Sidman, 1960) rather than hunches, intuition, or mentalistic theory. To paraphrase a well known statement by Skinner (1961), the educational researchers are not likely to let the student's behaviors tell them what is to be done next.

There are other reasons why the educational researcher does not deal directly with students, but rather opts for in-file data. One of the reasons that is not noted often is the possibility that students are feared. It is because of the pioneer efforts of behavior analysts such as Sidney Bijou, Vance Hall, Fred Keller, Ogden Lindsly, Ivar Lovaas, Arthur Staats, Robert Wahler, Montrose Wolf, and Todd Risley, and a host of others that behavior analysts can work directly with the most recalcitrant student without fear or trepidation. Indeed, can you imagine trying to teach toileting by allotting more "on-task" time without knowing, as Stallings (1980) puts it, how to "support" on task time? However, some would point to the simplicity of toilet training compared with reading instruction. The fact that behavior analysts can treat toilet training as an educational issue commensurate with learning to read attests to the power of the science, not its naivete.

Behavior analysts are in a sense simultaneously researcher and teacher because the nature of repeated and direct measurement necessitates direct and reciprocal control. Reciprocal control is the heart of instructional interaction. Such a direct relationship is seldom the case in educational research.

Most educational researchers would be hard-pressed to survive in an urban classroom, much less dare to allocate more time to academic behavior. How would they bring about on-task time or gain the attention of the student or provide a climate for learning or bring about mastery without using the tools of behavior analysis, short of calling for a firing squad? Lack of direct pupil contact leads to reliance on in-file data. In-file data are the standardized tests collected once or twice a year, placed in students' files and ignored by teachers. Because in-file data are only remotely related to classroom behaviors, the educational researcher does not produce useful findings for the classroom. Is it any wonder that deserved skepticism for their own data generalizes to the data of others?

Both camps look at behavior and attest to the importance of scientific analysis. The differences must reside with some aspect of each camp's practice of science and concern with what is being investigated.

DIFFERENCES IN RESEARCH METHODOLOGY

There is less of a chasm between behavior analysts and educational researchers in terms of some components of research methodology. For example, there is evidence of growing acceptance of single case experimental designs on the part of educational researchers. Similarly, more group designs are being published in the *Journal of Applied Behavior Analysis*. One would almost think that some behavior analysts believed that group designs were somehow more valid and that some educational researchers believed that single case designs were a panacea. The controversy, humorously described by Madsen (1975) as N-1 vs. N = 1, seems to have abated somewhat and individuals in both camps (Algozzine,

1980; Mountjoy, Note 6) recognize that both group and single case designs are equally valid attempts to implement Mill's Canons of Science (methods of agreement, difference, concomitant and joint methods).

It is possible that the day may come when the nature of the research question and the constraints of the setting might determine selection of the research design. As Sidman (1960) noted, the stylization of research designs is not the *raison d'être* for engaging in research. Group designs can incorporate rigorous control, direct and absolute unit measurement, and utilize a small N. Such designs can be combined with single case designs (Gordon, 1979; Miller, 1977) and yield valid results for both individuals and groups. Similarly the group design, no less than the single case design, is not dependent on statistics. The results of group designs obviate the use of statistics when effects are clear and control rigorous (Greer, Dorow, & Wolpert, Note 7).

Despite the seeming rapprochement with regard to design, there remain wide differences in other and more crucial components of research methodology. These differences may be characterized as (a) interventionist vs. noninterventionist, (b) fine grained analysis vs. global *ex post facto* analysis, (c) absolute unit vs. projective or indirect measurement.

Educational researchers share their faith in growth and nonintervention with developmental psychologists. The influence of the belief in the teacher as gardener (kindergarten translates as a "garden for children") rather than architect has meant that most of the prestigious educational research has been descriptive in nature (Coleman, 1966; Fredericksen, Note 2). Intervention studies, when they do occur, are seldom linked to direct fine-grained interactions between teacher and student. As a result, the data are in-file, standardized measures, and the variables are sociological or fixed (income, sex, age, grade level). Laboratory studies or the development of laboratory control of classrooms are discounted in favor of more global non-

intervention approaches. Unlike the fields of aviation and medicine where practice is more often made to conform to research, education is likely to discount research which changes the setting. I cannot resist the analogy to medicine wherein antiseptic surgical procedures would be discounted on the basis that the procedure is impractical because that is not the way it has been done.

Educational research gives greater credence to *ex post facto* approaches rather than experimental research. This results in the use of the Mill's Canon which is weakest: the method of agreement. nonintervention approaches are by nature removed from the actual setting where the instruction occurs. For example, studying student achievement by giving the administrative office a questionnaire is analogous to trying to fix an automobile engine by doing bodywork.

The measurement employed in educational research is projective rather than absolute unit. Behaviors are seen as *manifestations* of abilities. On the one hand, they are manifestations of something more important than behavior; on the other hand, they are only surface or shallow phenomena depending on the whims of the critic. Thus, behaviors mean more and yet mean less. In behavior analysis the dependent variables are the actual behaviors taught, while in educational research they are more likely to be an attempt to measure a cognitive process, a manifestation of an emotional state, or intelligence.

The increased popularity of criterion-referenced tests in education would seem to indicate greater acceptance of the "truth" of behavior. Recent summaries of the effects of teaching children perceptual tasks (indirect instruction) show that they do not affect academic achievement (Arter & Jenkins, 1979). One would presume that such findings would promote a careful look at environmental factors. In fact, what is recommended by many educational researchers is that investigators should measure deeper abilities such as cognition or, better yet, metacognition. This seems a strange conclusion when the inability of cognitive

psychologists to locate a "structure of the whole" or Woosle is becoming more apparent even to them (Bingham-Neuman & Hooper, 1975).

The difference in epistemology remains extensive and there is little evidence that the complexities of behaviorism are being discriminated. Educational researchers believe they know about behavior analysis, unfortunately, since we taught them some rudimentary procedures in one or two workshops. These workshops have not presented the implications of the experimental analysis of behavior and philosophies of behaviorism to the development of non-mentalistic approaches to educational research.

Another factor contributing to distrust of data, particularly the data from behavior analysis, concerns the questions asked by educational researchers. The questions may hold the key to why there is an anti-behavioristic stance held by leaders in the educational research field.

ANTI-BEHAVORISTIC BIAS

One leading educational researcher and psychologist (McKeachie, 1974) wrote an article in the *Educational Researcher* describing the demise of behavioral principles. In the article, the author stated that research on programmed instruction definitively demonstrated that learning principles were outdated. This author is at a leading institution. Coulburn (1978) in her summary of the diffusion of behavior modification noted that behavior analysis arose in less well known institutions and has had difficulty establishing itself among the older institutions such as the Ivy League universities. She attributed this problem to the entrenchment of traditional psychologists with strong anti-behavioristic biases.

The *American Educational Research Journal* published a rebuttal to one of their rare reports on behavioristically-based research. The research dealt with the use of PSI in a high school program for students who spend part of their school day in apprenticeship programs in the community at large. The published study (Breuning, 1978) included reports of two experiments using group designs.

The second experiment was a replication and extension of the findings of the first. The studies were well controlled, had a large N, used reliable absolute unit measures *and indirect measures*, and demonstrated a powerful effect on both. The rebuttal (Brophy, 1978) was a statement of opinion, did not offer new data, nor did it reanalyze the data from the Breuning studies.

The findings of the Follow-through education program were decidedly in favor of behavior analytical technologies (Becker, 1977), yet these findings were subjected to misrepresentation and repeated analysis (Bijou, Note 4). The summaries, which finally did acknowledge direct instructional effects, were quick to point out that the important measures of school achievement, such as creativity and problem solving were not included. The tacit assumption was that somehow the other approaches would change those more important behaviors, while instruction based on behavior analytic technology would not.

The above examples do not represent the views of all members of AERA. After all, the AERA did give Skinner an award for his contributions to education. James Popham was president of AERA, and criterion-referenced measurement has assumed a greater role in education. Behavioral objectives and task analyses are central parts of teacher training even if the objectives often include projective inferences such as "the student will show the ability to . . ." On occasion, reviews of behavior analysis research have been published (Robin, 1976). One educational writer has gone so far as to note the naivete of relying on statistical significance and a large N as a measure of the generality of findings (Hsu, 1980).

Even with the above exceptions, educational researchers are more skeptical of behavioristic research than they are of research derived from mentalistic paradigms. They are less critical of the findings of cognitive psychology, for example. This bias is perhaps understandable, given that the methodology and epistemology of cognitive psychology is more similar to that of educational

research. However, cognitive psychologists who have confronted the problem of training the mentally retarded (Brown, 1974) point to the importance of using procedures that are derived from behavior analysis. Other cognitive psychologists, however, are contemptuous of having any relationship with educational practice (Greer, 1981). Yet even with the contempt and lack of relevance, the 1980 guidelines for solicited research grants from the National Institute of Education blatantly favored the study of cognitive processes (NIE Solicited Grant Applications, Note 5). This was the case even though the targeted goal (equality of education) has the greatest feasibility through behavior analysis. Thus, the bias and/or naivete is not just a matter for chauvinistic debate but is an issue directly related to the best interests of educational practices and the national goals set for educational researchers. The antibehavioristic bias is, I believe, a result of a total misunderstanding of the revolution that the philosophy of the science of behaviorism represents.

NAIVETE ABOUT THE PHILOSOPHY OF BEHAVIORISM

One of the most important contributions of radical behaviorism has been to change the questions that the social sciences including education should be addressing. Radical behaviorism proposes that the most practical and relevant approach to instruction is one that concentrates on the relationship between behaviors and the environment, not on how the student's mind works. This brings us to the major difference between the educational research establishment and behavior analysis. Educational issues such as creativity, problem solving, memory, and the generative use of language will not be resolved through a study of perception, cognition, metacognition, executive functions, or the arrangement of neurophysiological furniture. The question is not how does a given child think or mentally organize the world, or how does language develop from a grammarian's *ex post facto* analysis of sentence structure, but rather

what are the behaviors and the controlling stimuli. This is a new and revolutionary question which has reoriented the study of behavior but has yet to be recognized by educational researchers. It is not a simplistic question appropriate only to lower levels of learning as some educators would have us believe (Gagne, 1970) but is an exceedingly complex question which can be used to reanalyze the most complex levels of human learning. Most importantly, the questions have changed. Educational research must learn what the questions are or relinquish the role as the research authorities if solutions to crucial educational problems are to be broached.

SOME SOLUTIONS

Behavior analysts in education and psychology need to make a concerted effort to countercontrol the domination of educational research by AERA. The first set of solutions identifies new curricular objectives and students for courses and programs devoted to behavior analysis. These include (a) incorporating teachers of teachers and educational researchers as students, (b) teaching the complexities of behaviorism by, (c) contrasting behavior analysis with traditional and prevailing practices. The second set of solutions involve the development of a more active role by the Association for Behavior Analysis (ABA). ABA should expand and quicken its certification role. In addition, ABA should establish committees to (a) monitor education's responsibility to intervene, (b) counteract the cult image of behavior analysis, (c) protect untenured faculty and new programs in behavior analysis, (d) monitor federal research funding priorities, and (e) promote programmatic research efforts.

New Students for Behavior Analysis

The eventual leadership of education resides in the hands of the doctoral students in education. Few of the major institutions producing these students have requirements which incorporate competencies in behavior analysis technology or research methodology. It is apparent that behavior analysis offers the first substantive technology related to instruction. To date, the only aspect of that technology which has received general

and reluctant acceptance is that part concerned with "classroom management." The view that academic behavior is an arbitrary category just as is classroom deportment is usually disallowed by educational researchers and teachers. It is an alien notion for educators to presume that a procedure which works with hand raising also works with academic tasks. Thus, although a technology related to instructing students in practically any curriculum is in existence and flourishing, graduate students in education often remain uninitiated. The contingencies of graduate study in education are such that the one substantive area of study is the study of research methodology. This methodology produces the greatest awe, fear, and prestige.

The methodology studied is that of Fischerian social science (Johnston & Pennypacker, 1980) and related specializations in "measurement." Behavior analysts should insist that the methodology of the science of behavior be taught also. Such a course must be part of the graduate research core. The course would provide graduate students an introduction to behavior analysis and a critical if not skeptical view of Fischerian methodology.

There are indications that now is the time for this thrust. In the past, texts devoted to behavior analysis have targeted more specialized professionals (Hersen & Barlow, 1976; Sidman, 1960). However now that we have general texts that contrast and trace the prevailing methodologies (Johnston & Pennypacker, 1980), the pitch can be made for a methodology course for most if not all graduate students. After all, the intraverbal control for "eclecticism" in education and psychology is strong!

The Complexity of Behaviorism

As graduate students are taught the basic science of the experimental analysis of behavior, the revolution in scientific paradigm can be broached. Journals such as *The Behavior Analyst* and *Behaviorism* expand the sources that consider issues related to the philosophy of the science of behavior. These materials allow behaviorism to be contrasted with tradi-

tional social science in a manner that the mystique held by traditional social science can be effectively countercontrolled. In addition to showing the practicality of behavior analytic data, we must also demonstrate that the new questions from which the data originate are more important than traditional questions. Such a task is a difficult one. Three thousand years of mentalism requires concerted efforts in presenting contrasting intellectual arguments.

Contrasting Philosophies and Methodologies

It is not enough to teach the dedicated student of behavior analysis our methodology alone. The student who completes a degree at an institution in which behavior analysis is the only substance is open to persuasion from the other camp whenever that approach is found to be "new" or the central thrust at the new job. It doesn't take long before such a student sees that one can embrace both approaches and reach an eclectic one (social learning theory) which encompasses the best of both. Of course to do so denies the essential core with which behavior analysis is concerned.

The antidote to such a conversion is to insist that the behavior analyst specialist knows the other camp. Party-line education, methodology, and psychology need to be contrasted to behavior analysis. Behavior analysts need never stand in awe of multivariate regression or greco-latin square designs. They need to know them, and they need to countercontrol such influences with the methodology of behavior analysis and the basic philosophy of behaviorism. Many of the founders of behavior analysis were converted from traditional programs in psychology and education. Rebellion from the party-line was and is a strong controlling variable for many of the most creative contributions. Students of behavior analysis need to have a similar rebellious experience even if done vicariously.

The Association for Behavior Analysis (ABA) can make a strong contribution to development of procedures for expanding

the target students, producing concerted efforts at teaching the complexity of behavior analysis, and contrasting methodologies and sciences. Perhaps ABA committees or task forces devoted to accomplishing these goals need to be developed. ABA can also take a more aggressive role on several other fronts.

Aggressive Roles for ABA

There are several initiatives that ABA can make in countercontrolling the influence of AERA. Each of these initiatives can be assigned to new standing committees. Such committees should be concerned with (a) serving as a watchdog for seeing to it that change agencies are using the existing technologies, (b) developing strong control of certification, (c) countercontrolling the "cultism" image, (d) monitoring the representativeness of research funding, (e) monitoring promotion and tenure procedures at universities in which there are few behaviorists, and (f) promoting programmatic research efforts.

Responsibility to Intervene. Society has increasingly been concerned with developing restrictions for interventions with human beings in educational, therapeutic, and medical settings. This is an important and useful activity. For example, members of ABA and AABT are in the process of developing guidelines for the use of aversive and restrictive procedures (Model Guidelines Symposium, Note 7). This effort combined with efforts to identify competencies in the application of behavior analytic technology can protect our students and our science from being associated with procedures that are antithetical to its practice. However, we always seem to be reacting to criticism from others, or misapplications, or to efforts concerned with eliminating behavior. Perhaps, this is due to having often been the "approach" of last resort. It is my contention that we should *design* our public relations in a manner that we become the "committee" of first resort. Rather than only monitoring interventions of last resort, we need to develop activities which monitor the quality of programs. Why are clients not being reinforced positively? Where are the direct

measurements? Why are the clients not engaged in the task? What beyond selection is being done? In short, are the change agents meeting their responsibility to intervene?

An additional effort would concentrate on identifying programs and individuals who are intervening appropriately in contrast to programs that are essentially functioning as nursing agencies. Nursery school, kindergarten, and headstart programs that are utilizing behavioral technology should receive certification or awards for their programs. Similarly, model educational programs at all levels could receive similar endorsements. In addition to pinpointing programs and individuals exhibiting minimum competencies, we should be recognizing programs that are producing maximum changes. Such programs could be identified, reviewed, and awarded recognition by ABA with concomittant local, regional, and national publicity. Such procedures would place ABA in operations concerned with designing programs rather than reacting to inappropriate professional practice. This could be one step towards developing the notion that professionals have a responsibility to intervene which is commensurate with their responsibility to be accountable for intervention.

At present, interventions are punished. Legal structures are provided to protect clients and students from certain types of intervention. Should we not also insure that students receive the appropriate technology? Rather than following the local legislators who have mandated punitive measures for certain interventions, why not award recognition and lobby for legal contingencies which insist on appropriate interventions?

Certification. The movement to provide certification for behavior analysts is an important one. Although the power that comes from such procedures creates problems, the use of behavioral technology to control traditional bureaucratic difficulties is a challenge. State and professional agencies continue to certify individuals in education, school psychology, therapy, and administration, to name but a few roles. Until we do so,

we are not programming generalization of behavior analysis.

Cultism. The history of education is such that the greatest anathema of the leaders of the profession is reserved for cultism and the effects of cultism. Perhaps the one commitment that graduate programs in education produce is anticultism. Indeed the major outcome for most programs seems to be eclecticism. We need to teach that behavior analysis is committed to a science and technology not to passing fads. This means incorporating behavior analysis into all aspects of education from kindergarten to special education to graduate education. Providing appropriate certifying agencies and other aggressive roles for ABA can incorporate commitment to technology and science as a control for fads.

Protecting junior members. Behavior analysts who are untenured and junior members of university/college faculties, have difficulty achieving tenure and promotion. It is possible that their competence as a behavior analyst is directly proportional to their difficulties surviving at institutions with decidedly mentalistic bends. Thus, established traditional educational and psychology programs are the most difficult in which to place behavioristic faculty (Coulburn, 1978), yet these institutions train large numbers of influential educators.

Most behaviorists located in eclectic programs find considerable opposition. The situation is analogous to the one in which this author found himself at a national symposia of psychologists. The description of my efforts was summarized in a news release in the following manner. "Seemingly undismayed by his role as a solitary behaviorist lamb among cognitive wolves, Greer gave an energetic precis of his long paper . . ." [p. 5-14]. Of course, the reason I was undismayed was that I know "cognitive wolves" have no teeth. Humor aside, ABA can take an active and protective role for junior faculty members. Behaviorists need not be without company, even if the company must come from ABA. ABA could establish groups to review the work of

behaviorists at institutions that have little expertise. ABA could also actively lobby for that role. Why should behavior analysts be reviewed by individuals in search of mental furniture, plastic brains, or other descendents of homunculus?

Funding. An RFP from a governmental agency for cognitive research in education should be met with concerted lobbying by ABA. Surely ABA could persuade research agencies to be more representative in their policies. The heyday of much of governmental support for education may be over, but should we not insist that more promising avenues be funded with the remaining monies?

Certainly there are other roles that ABA might take in countercontrolling what may be described as the controlling class of educational research. "We happy few" can be a strong group contingency. There are many additional positive aspects of such a predicament, not the least which is the immediate possibility of the formation of unified research thrusts in education.

Programmatic Research. Research programs based on grant applications which have originated with a national professional organization could increase the probability of funding while serving to focus the research efforts of behavior analysts on major problems in education. For example, ABA might embark on a concerted research program designed to attack the major difficulties associated with teaching children to read. It is even feasible to do such a program without funding. Cooperative research could serve to direct efforts and provide reinforcing contingencies for replication by other laboratories. Such an intensive and directed effort might prove feasible at the current point in the development of ABA.

CONCLUSION

The state of public education and the multiplicity of societal difficulties that are related to education (Help, 1980) show the need for AERA to either change their science or to relinquish their domination of education. At the very least we should receive equal opportunity. It is unlikely that AERA will relinquish their domination unless behaviorists take a more asser-

tive role. An organization such as ABA could furnish the impetus and appropriate control of such a thrust. If the establishment cannot come under the control of the data, political pressure coupled with demonstrated utility of behavior analysis is a necessary step. It is increasingly apparent that Skinner (1971) was correct when he said that we have yet to discover what people can do for people. As a first step, can we not insist that teachers be allowed to be taught what behavior analysis shows they can do for children?

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