ABSTRACT
        This report stresses the need for behavioral analysts
to become more responsible in "setting" behavioral objectives in
educational and therapeutic settings. Traditionally, behavior
analysis concentrated on how behavior is learned and how it can be
taught, but not on which behaviors should be learned. Four steps are
outlined in the analysis process, the first having to do with
determining what behaviors are needed, and the other three having to
do with the planning, implementation, and evaluation of behavior
change procedures. Applied behavioral analysts, perhaps because of
the laboratory origins of their approach to problems, have often
ignored the processes and issues involved in "setting" behavioral
objectives. Suggestions are made regarding how behavioral analysts
can become knowledgeable, skilled, and responsible through
professional identification, training programs, and research and
professional literature. A preoccupation with diagnosis is not
generally recommended for analysts, although a greater concern for
this aspect of the field is indicated. (Author/PC)

WHO DECIDED THAT WAS THE PROBLEM?

TWO STAGES OF RESPONSIBILITY FOR APPLIED BEHAVIOR ANALYSTS

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Recently I was vividly reminded of a problem in applied behavior analysis
that I believe has plagued us for years, and one that we need to recognize if
we are to conduct ourselves responsibly in the various human services we are
trying to perform. A bright, conscientious, graduate student of mine was in-
terested in doing his thesis in a program for severely maladjusted children, and
he had an idea to propose to me. He wanted to teach cursive writing to a rather
bizarre and retarded child in the program. I knew something about the child and
was rather surprised that he selected cursive writing skills, since the child
could not read (except his name), print, or even reliably identify all the
letters of the alphabet. I asked "Who decided that was the problem to work on
next?"

That problem had been selected in a three-way conference between the
child's teacher, a behavior modifier with several years' experience in the
program; my graduate student, who certainly must be considered a behavior
analyst; and a psychologist in the program who was also trained as a behavior
analyst in our Department (and had been employed as a behavior analyst for two
or three years). I do not know what processes they went through to determine
what problem should be attacked next, but their rationale for choosing the
skill deficit of cursive writing was that they thought "It would be neat
if he could write." They felt it would be efficient to omit the step of
teaching him manuscript writing, though there was no mention of any research
showing that this omission is an efficiency.

In questioning their selection of cursive writing, I inquired about skills
the boy had in various areas of development. I found that he could not color
within boundaries proficiently, could not draw easily recognizable pictures,
could not tie his shoes, spoke in complete sentences only if prompted, could
not carry on even simple conversations, never initiated play with peers, never
engaged in cooperative play, did engage in parallel play sometimes if others
initiated it, and could imitate few gross motor acts accurately. I doubted
that the child had the prerequisite skills to learn cursive writing; and if he
learned to write, I doubted that it would be a functional skill for him (except
in a very restricted sense).

In addition, I felt uneasy about cursive writing as the next behavioral
objective because in general it seems wise to program the development of

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children's (or retarded people's) skills so that they keep approximately the
same profile, across the various social and physical skills, as is typical of
most children's development, unless one is systematically investigating
alternative sequences of development. To attempt to teach this particular
child cursive writing now appears to run two risks in this regard: (1) it
might make an already unusual child even more unusual (somewhat like the "idiot
savant" who has one remarkably well developed skill and is otherwise develop-
mentally retarded), so that he would likely be less socially acceptable to
others, and (2) it would likely result in other persons' expecting too much of
the child in some areas of his development, and thus in their failing to teach
him important skills.

I felt chagrined that we had not done a better job of training the two
behavior analysts involved. The student's thesis will involve gross motor
imitation, not cursive writing.

The problem I wish to illustrate is also evidenced clearly in another true
story.[1] A behavior analyst was given responsibility for the young man with a
Ph.D. in biology who had developed hysterical blindness and lost his university
teaching position. The behavior analyst was particularly interested in studying
the aversive control of behavior, so he constructed some laboratory apparatus
with which he could make electric shock contingent upon the young man's failure
to make an avoidance response that required a gross visual discrimination. Then
as the subject became proficient at avoiding the shock under one discrimination
problem, the problem was made more subtle and complex.

This may sound reasonable until we look at more facts of the case. The
biologist had great difficulty getting through graduate school, the teaching
job he had lost was his first position, he had held it only a few months when
he became "blind," he had demonstrated a high level of anxiety about his work,
and he had always shown an unusual amount of dependent behavior.

It would seem that the man's problem was much more than hysterical blind-
ness, and involved such things as his job competency, his own evaluation of his
job performance, the achievement goals he set for himself, and certain kinds of
dependent behavior under stress. Most clinical practitioners, upon finding
that such a case was dealt with by only addressing the blindness (particularly
with an aversive control procedure, in which the man could either avoid work
or avoid shock, but not both, except by termination of the treatment), would
probably ask, "Who decided that was the problem?" Unfortunately for the young
biologist, he became increasingly anxious as his visual discrimination improved,
and he rather suddenly terminated the treatment. That was the end of the be-
havior analyst's involvement, and I do not know the ultimate outcome of the case.

THE GENERAL PROBLEM

The problem has to do not only with what skills and knowledge the behavior
analyst brings to his applied work but also with his sense of responsibility for
the different steps of the process in which he is involved. All education and
therapy could be described by a four steps depicted in Table 1, which can be
summarized as (1) selection of behavioral objectives, (2) design of a program
for achieving the objectives, (3) implementation of the program, and (4) evaluation.

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[1] The specific facts have been changed to avoid embarrassment to friends whose
work I generally admire.

Table 1.   A Model of Education and Therapy

Step 1.   Determination of what behaviors
(and whose, which is not always as it
seems) need establishing, strengthening,
maintenance, weakening, or elimination.
This step might include, as sub-steps,
determination of what kind of information
is needed and how best to get it, arrang-
ing for opportunities to get the relevant
information (e.g., observing, interview-
ing, testing, referring to other experts),
getting the information (as described by
Kanfer and Saslow, 1969), watching for
unexpected or otherwise significant in
formation, and integrating the informa-
tion into a set of behavioral objectives.

Step 2.   Determination of how to achieve those
objectives effectively, economically and humanely.
This step might include, as sub-steps, selection
or designing of a setting for the learning, selec-
tion or designing of tasks and materials, sequenc-
ing of tasks and materials, determination of
consequence contingencies, determination of who
will implement aspects of this program, and
determination of how its effects will be evaluat-
ed.

Step 3.   Implementation of the program designed.

Step 4.   Evaluation of the program's effects, and
recycling to Steps 1 and 2, as needed. This eval-
uation is best done continuously during the program,
not as a distinct fourth step after the program is
over (or even at infrequent times).

of the program's effects.[2,3] The problem being highlighted in the present
analysis is that we behavior analysts, though generally outstanding at Steps
2 through 4, often seem not to appreciate the importance of Step 1.   It
appears that we frequently lack the skills to perform Step 1 ourselves and
yet sense too little responsibility to see that someone else does the job
competently.

A competent, responsible performance of Step 1 appears to require that a
professional have most or all of the following characteristics, as they apply
to the particular type of behavior he is dealing with:

1. A sense of responsibility for the learner's overall, long-term welfare,
    including his safety, comfort, happiness, freedom and self-satisfaction.

2. A similar sense of responsibility to protect and promote the welfare of
    society while dealing with the target individual(s).

3. Knowledge or hypotheses regarding what behaviors "should" be present
    (assumedly those, within his discipline's purview, that will promote
    #1 and #2 above). Different human service professions vary greatly
    in the objectivity of their bases for their respective bodies of lore
    regarding what behaviors are desirable and in what order they might
    best be taught. This will be discussed further below, under research
    implications.

4. Skill at sensitive, well-directed observation and at creating situations
    (including interviews, tests, etc.) in which potentially significant
    behavior will be emitted for observation.

But development of these characteristics requires training, and character-
istics 2 and 3 are likely to be developed only through training in some specialty
other than applied behavior analysis, specialties such as speech pathology, orth-
opedic rehabilitation, marital therapy, school psychology, and those very general
specialties; clinical psychology, social work and psychiatry.[4] And when the

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[2] Any of these may overlap in time, and it is common for behavior analysts
to carry out Step 4 continuously during Step 3 and even 2.

[3] A step preliminary to Step I has been omitted, because it is usually a
diffuse, implicit process that would be difficult to describe as "a step" in
education or therapy though it governs all education and therapy. It is the
assuming of certain kinds of behavior to be culturally or personally desirable,
and others to be less desirable. Thus, before one elects to strengthen, say,
independent, rational thinking on the part of a child or adolescent, one must
assume that a society functions better, overall if its members are relatively
rational and independent in their thought. In some nations this assumption
would not be made. This example is extreme, but subtler assumptions about what
is "good mental health" and the like would not be so universally accepted among
professionals or in the society at large. One can readily think of examples in
the areas of sexual behavior, drug consumption, and reliance on scientific data.

[4] An exception may be the behavior analyst whose only applied work is train-
ing others in behavior analysis. His specialty might be considered to be be-
havior analysis alone. However, he may be likely to promote in his students
the attitude that behavior analysis is all they need to know, which would per-
petuate the problem presented in this paper.

characteristics have been developed, there must still be the necessary discrim-
inative stimuli and incentives for exhibiting the characteristics in one's
professional work. However, these cues and consequences tend to be minimal
among behavior analysts, probably as a natural outcome of the unique historical
development of applied behavior analysis.

HISTORICAL ROOTS OF THE PROBLEM

Applied behavior analysis had its origins in the laboratory. Many basic
principles describing how behavior is controlled, and numerous techniques for
controlling behavior were discovered and elaborated in laboratory research
with lower animals and humans. These principles and techniques were then
applied to the changing of more significant human behavior in non-laboratory
settings.

This laboratory background has been a source of considerable strength
to applied behavior analysis. First, it gives the behavior analyst a con-
ceptual scheme (called learning theory or behavioral principles) that allows
him to think of behavior and its causes in a much more valid way than his
predecessors,[5] thus making it more likely that he will succeed in his attempts
to engineer behavior (e.g., Allen, Hart, Buell, Harris, and Wolf, 1964;
Williams, 1965; Haughton and Ayllon, 1965; Madsen, Becker, Thomas, Koser, and
Plager, 1968; Hawkins and Hayes, in press). Second, the technology developed
in the laboratory for engineering behavior often has proved directly appli-
cable to significant human behavior, so the behavior analyst has readymade
tools for effecting behavior change. One of the more notable examples
might be shaping, a technique that has been used to re-establish speech in
psychotics who were mute for decades (Sherman,1965) to develop sociability
in a withdrawn nursery school child (Allen, Hart, Buell, Harris, and Wolf,
1964), to increase the loudness of a shy sixth grader's speech (Schwarz and
Hawkins, 1970), and to solve many other problems that had been resistant to
change. A third advantage of having roots in the laboratory is that the be-
havior analyst tends to be very optimistic about his ability to engineer
behavior, being accustomed to having relatively complete control over the
environment, and even the total experimental history, of his laboratory ani-
mal. Finally, the laboratory background results in the behavior analyst's
being very likely to objectively measure the dependent variables he is in-
terested in; and, further, he is likely to carry out his environmental mani-
pulations in a manner that permits him to verify whether these manipulations
are really the cause of whatever behavioral changes occur (Baer, Wolf and
Risley, 1968). This kind of expiricism and accountability promise to result
in continuously improving behavioral technology (Risley, 1969) and constitute
a monumental improvement over the practices of others in the helping professions.

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[5] The relativity of this statement should be noted. I do not believe
we can say that the behavioral scheme is valid and others not valid. It is
more likely the case that the behavioral principles discovered to date from
experimental research in the laboratory constitute a very sizeable improvement
in validity over other theoretical frameworks, at least in conceptualizing
most behavior. This higher level of validity seems to be an outcome of a
"natural science," atheoretical approach to the study of behavior (Skinner,
1954; Bijou and Baer, 1961; Bijou, 1963).
    Such an approach also appears to promise a continuously increasing validity
of our understanding of "how behavior works," as opposed to a succession of
fads in theory, treatment methods, and other educational methods.

But the laboratory origins of applied behavior analysis may also have certain disadvantages. In most laboratory research the experimenter is interested in investigating the effects of certain environmental factors on behavior; not on a <u>certain</u> behavior, but just on "behavior." The particular response measured is selected not for its high social value, its facilitating of further learning, or its maladaptive character. The response is selected on the basis of its being easy to measure, being easy to condition (in that particular species), and perhaps having the potential of occuring at a high rate. Thus the experimenter in the laboratory has a strong interest in particular independent variables but is less likely to have an interest in particular dependent variables. For example, Thorndike and others have studied the learning of nonsense syllables in humans, Hull and others have studied maze-running in rats, and Skinner and others have studied bar-pressing in rats and key-pecking in pigeons. Even when human subjects are used, the response is likely to be something like marble-dropping or lever-pressing. Those responses are all selected largely for reasons of expediency rather than because of their significance to the species in its natural environment. This is as it should be, for only through such an approach has it been possible for us to learn so much about"how behavior, in general, works."

As behavior analysts left the laboratory to deal with significant human behavior, they brought their expertise with them. Their outstanding ability to manipulate environmental variables has resulted already in remarkable achievements in a wide variety of endeavors involving human behavior. They might be characterized as experts on the independent variables involved in human behavior (or at least on a number of powerful ones). But it may be time for behavior analysts to consider their expertise on the dependent variables, their ability to determine what behavior is needed by various learners in various settings.

When anyone in a human service profession decides to change a particular behavior it is, of course, because some person or some process has led him to that particular behavior as the target. But when that professional is a behavior analyst it is very likely that he had little involvement in the process that determined what behavior was desirable and adaptive. For example, in offering training in behavior modification to groups of parents a behavior analyst may take the attitude that it is solely the parents' responsibility to determine the behavioral goals for their child (Walder, Cohen and Daston, 1967). Such an attitude certainly makes the job of group training easier, for one can concentrate on behavioral theory and/ or technology alone.

But it is important that behavior analysts at least appreciate the significance of Step 1 in the behavior change process, and realize the skill and humane considerations that are frequently involved. Would it be appropriate, for example, to offer training in behavior modification to an unselected group of prison guards who are then never monitored by the behavior analyst, or would the behavior analyst sense a certain lack of sophistication on the part of the guards in selecting appropriate behavioral objectives? Should the same question be raised regarding training mental hospital attendants who then go unmonitored? Even in the case of parents, who certainly have no systematic training for this very important job (Hawkins, 1971 and 1972; McIntyre, 1973), behavior modification training might be questioned.

Certainly behavior analysts must at least recognize the limitations inherent in such programs as the group training of parents. Parents have little or no systematic training regarding either desirable behavioral objectives for their offspring or methods for achieving these objectives. When given training

only in how to modify behavior, with no guidance whatever regarding selection
of behavioral objectives (an infrequent approach, I suspect, because behavior
analysts tend to very humanitarian, unlike the illusion conjured up by their
detractors), it is likely that parents will select only obvious target
behaviors that they find annoying or embarrassing. There is some support for
this prediction in Berkowitz and Graziano's (1972) observation that results
from most parent training programs in behavior modification emphasize the
reduction of excessive behaviors (especially aggression, hyperactivity and
disobedience) rather than the remediation of behavioral deficits.

The issue raised recently by Winett and Winkler (1972) is relevant here.
Although teachers and school administrators have extensive training for their
work---training that particularly emphasizes the philosophy and purposes of
education---when given training in applied behavior analysis they often apply
their new technology only to the achievement of relatively trivial and perhaps
even counterproductive objectives, such as sitting still, being quiet and
being obedient to the teacher's every whim. As Winett and Winkler suggest,
behavior analysts have a genuine responsibility in the process of selecting
objectives, even in the context of a system that would be expected to be
competent to select its own objectives wisely, with appropriate priorities.

PROBABLE IMPLICATIONS OF THE PRESENT ANALYSIS

So what am I advocating? A return to "the good old days" of psychological
and psychiatric diagnoses? Of course not. We don't need the Rorschach, the
TAT and the Bender-Gestalt. We don't need the assessments all conducted in
offices instead of the real world. We don't need the long descriptions of
irrelevant personality traits, impulses, wishes, conflicts, anxieties, latent
tendencies, hostile feelings, guilt feelings and the like, that somehow
said nearly the same thing about everyone and never said what John Doe's
problem was or what might be done about it. What I believe we do need is
to first recognize our limitations and then work to see that we and those
we train do become more competent and responsible regarding Step 1 in the
educational or therapeutic process. The means for achieving this can
be found in our professional conduct as applied behavior analysts, in our
training programs, in our research efforts, and in the content and format of
our professional literature. These implications will be discussed in that
order.

Professional Conduct

The first implication I see for our professional conduct is that it
probably is advisable for each applied behavior analyst to ally himself
with one or more professional groups besides his fellow behavior analysts.
That is, I suspect each of us should consider himself a school psychologist,
clinical psychologist, special educator, speech pathologist, retardation
expert, or the like. Like Horowitz (1973), I believe we should read other
literature besides behavior analysis literature and listen to other people
besides behavior analysts.

Behavior does not occur in the abstract, it comes from a particular individual in a particular setting. If we isolate ourselves from consideration of the issues, awareness of the technology and knowledge of the values extant among the non-behavior analysts in the fields where we are doing our work, I think we limit our own individual development and limit the speed with which an empirical approach to planning and problem-solving will be accepted and adopted.

The second professional implication is more complex. It has to do with two different levels of responsibility in our professional work, cne of which we often ignore.

It is possible for a behavior analyst to be a kind of free-lance generalist, on occasion, applying his conceptual skills and technological knowledge to a wide variety of setting-learner-behavior combinations. Many of us have had experience at serving as a consultant (or researcher) in some area that we know very little about, and some of us even get full time jobs in such areas. Perhaps because we bring with us an empirically-based conception of human behavior that is so much more valid than other conceptions, and because we also have the empirical attitude and experimental skills to continue discovering further information about behavior, we have often managed to be of considerable value in these "foreign lands." But   in these "foreign lands" we are typically valuable in only a reactive way. If someone else tells us what they see as the problem, we can sometimes react with ingenious solutions. But they must identify the problem; they know much better than we what behavior "should be" exibited by the learner.[6]

It is important that we recognize the two stages of responsibility involved here, and recognize further that we are accepting only one of them. There is the responsibility for Step 1, which is being carried by the on-site expert; and there is responsibility for Step 2, which is being carried by the behavior analyst. Once we have recognized the two responsibilities, we can attempt to realistically assess the following three factors:

1. The on-site expert's competence for Step 1, including his ethical values regarding what behavioral objectives are desirable.

2. Our own competence for Step 1.

3. The amount of responsibility we are willing to accept for Step 1.

After deciding what responsibilities one has the competence for and which ones one is willing to accept, there is the obligation to assure that all other parties have approximately the same view of each person's responsibilities. Typically this can be done by simply making it clear to what aspects of which steps we are addressi g ourselves and reminding others what aspects are still their responsibilities. For example, in a parent training group one might point out to parents that neither the child no his natural environment will be observed, and thus that sensitive observation and priority-setting by the parents (and perhaps the child) will be the primary means of accomplishing Step 1. Then the behavior analyst points out that he

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[6] Actually, this varies greatly from one field to another. Some have much more highly specialized knowledge than others and a much more objective basis for it.

will make some general suggestions to guide the parents--such as the
suggestion that they consider whether their expectations are reasonable or
the suggestion that they look for skill deficits as well as behavioral
excesses--and will try to raise pertinent questions about their goals
occasionally (or, better, encourage other parents to raise them), bu'.
that most of the responsibility for setting goals will continue to be theirs,

Training

Admissions. It is my subjective impression that many of the best
behavior analysts (most responsible, most effective in the applied setting,
and possibly most likely to do significant applied research) coming out of
our program at Western Michigan University are people who had previous
training in some area other than applied behavior analysis, be it speech
pathology, clinical psychology, early education, social work, or one of the
many other human service disciplines. These people have often already
acquired the four characteristics indicated above as important in assess-
men of behavior, though much of their knowledge about what behavior is
desirable can be improved in objectivity and precision; and those with
clinical psychology, counseling, and social work backgrounds usually have a
great quantity of vague, misleading and erroneous concepts about behavior
that they have to sort through and largely discard (but they still tend to
have characteristics 1,2, and 4). We should probably continue to encourage
people with strong backgrounds in these other disciplines to bring their
expertise with them, evaluate it in the light of the natural science concepts
they learn with us, and add our behavioral engineering technology to their
expertise.

Program content. An alternate way of phrasing the main thrust of the
argument in this paper is that training in behavior analysis is not enough.
One does not analyze or engineer behavior in the abstract, there is always
a setting, a learner, and certain behavior. Various combinations of setting,
learner and behavior constitute the basis for the various human service
professions and certain academic disciplines, such as physical therapy,
counseling, elementary education, human development, speech pathology and
therapy, community psychiatry, family therapy, school psychology, psychiatric
social work, or blind rehabilitation. Each discipline implies certain
settings, learners with certain characteristics, and a focusing on certain
kinds of behavior (though some discipline's names are much more definitive
than others).

It is questionable whether there ever should be a program that claims
to train people in applied behavior analysis alone; because either that leaves
the trainee with no expertise for work in a particular setting with a
particular type of subject or particular kinds of behavior, or else it
attempts to train him as a behavior analysis generalist, who knows something
about several (certainly not nearly all) settings, types of subjects, and
kinds of behavior, but does not know much about any of them. In addition,
he seems not to acquire the needed sense of responsibility (characteristics
1 and 2, above) or the sensitive observing skills(characteristic 4)
necessary for identifying behavioral objectives. As a final product, he is
likely to be deficient in all four of the above characteristics. [7]

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[7] To a large extent, this is probably what Horowitz (1973) was saying in
her plea for less isolation of behavior analysis from other disciplines. Krantz'
(1971) article on the isolation of operant conditioners is also relevant, but
was not as oriented toward issues of an applied nature.

What are the alternatives? A few are obvious. First, the training
in applied behavior analysis can take place wholly within a department
organized around a particular discipline. Of course many training programs
believe they are accomplishing this when they have their token behavior
modifier who teaches one or two courses in behavior modification and then
sends the student on to others who teach him an eclectic pot pourri of
sense and nonsense. But there are programs seriously working at adopting a
behavior analysis view throughout, yet without discarding the valid (or at
least reasonable) knowledge and skills already available in their discipline.[8]

Second, a department as a whole can have a behavior analysis orientation
and have within it two or more programs of training oriented toward particular
types of setting-learner-behavior combinations. For example, a behavior
analysis psychology department might have within it a school psychology
program, a retardation program, and a community psychology program. Of course
the four characteristics of a professional competent in assessment, listed
earlier, will be developed in the trainees only if such training is taken
seriously, and in so inclusive a field as community psychology, particularly,
this would be a substantial task.

Finally, a department offering excellent training in behavior analysis
but having too few resources to also offer good training in certain discip-
lines where the behavior analysis knowledge might be applied, could arrange
a joint training program with another department. For example, a joint program
of parenthood education might be arranged between a psychology department
and a department of child development, or a joint program in aging might be
arranged between two or three departments.

Research

It is often asserted that behavior modification or behavior analysis
does not tell us what behavior to modify, but only how to modify it.
Unfortunately, this may imply to many people that behavior analysis cannot
tell us what behaviors are desirable. This appears questionable. For
example, take Ayllon and Azrin's (1968) "relevance of behavior rule,"
which states that one should teach behavior that will be functional for the
individual after he leaves the institution, school, clinic, or other formal
training situation. While this is simply a logical assertion on the part of
these two behavior analysts, and perhaps not an empirically verified fact,
experimental analyses could readily be conducted to verify that assertion.
One could experimentally determine what specific behaviors were highly
relevant in the natural environment and what their function was, with the
result that the setting of behavioral objectives in educational and thera-
peutic programs would be based on an experimental analysis rather than on
educational, mental health, and management theory or guesswork. At that
point behavior analysis would certainly be telling us what behavior should
be learned, not just how it can be learned.

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[8] The Special Education Department at California State College, California,
Pennsylvania, is a department using this approach.

This may seem like a monumental task, but if we look carefully we find
that many of our studies already have told us much about what behaviors
parents, teachers and therapists should not emit (e.g., Harris, Jonston,
Kelly and Wolf, 1964; Williams, 1965; Allen and Harris, 1966; Madsen, Becker,
Thomas, Koser and Plager, 1968; Hawkins and Hayes, in press) and even more about
behavior that they can emit that increases their effectiveness. What we are
almost totally lacking is empirical data on what these parents, teachers
and therapists should be teaching their children, students and clients. But
such data can and should be obtained.

Several other kinds of research related to setting behavioral objectives
are probably needed. One kind has to do with the interrelationship between
various responses. An example of this type is a study by Sajwaj, Twardosz,
and Burke (1972), in which they monitored several different behaviors while
modifying one. They discovered that responses one would expect to be unrelated
actually were functionally related, which might suggest that we should not
be as confident as we typically are about the likely or unlikely side
effects of our interventions. A second example is a study by Nordquist (1971),
in which he showed that eliminating the oppositional behavior of a child
during the day resulted also in elimination of bedwetting at night. It is
possible that with many children who are enuretic, the bedwetting is simply
one form of oppositional behavior (a result that, if true, would surprise
few non-operant clinicians). But much more research would be required before
any such conclusion could be drawn, and even then it would be helpful to
obtain the actuarial data that would permit prediction of the success of a
treatment based on that hypothesis.

This suggests a second type of research on the dependent variables of
applied behavior analysis. Some behavior-change efforts are very expensive,
and as cost-effectiveness analyses become more common over the next few
decades, it will become more important for us to be able to predict the
effectiveness of proposed programs. But reasonably accurate prediction is
only possible if one has discovered predictor variables that correlate
highly with outcomes from the type of behavior-change program proposed.
Thus, in order to set behavioral objectives and priorities realistically,
it will be helpful to state the probability of our success, given a particular
budget and time frame. This requires extensive correlational research.

As a third type of research, we need normative studies that will allow
us to objectively answer such seemingly simple questions as "How many eight
year-old boys still wet their beds two or more times per month (and thus,
should a boy's parents be upset that he wets his bed twice a month)?" "What
conversational behaviors tend to keep people interested in talking with
someone (and thus, perhaps, what might I teach a withdrawn, depressed person;
or what behavior might I assess for and teach school children)?" or "How
frequently do adults use algebraic concepts or procedures in their daily
lives (and thus, how important is it to teach algebra to all school children)?"
In the absence of data, such questions continue to be answered by hypothesis
and simple assertion, sometimes at considerable financial or human expense.

The final type of needed research on the dependent variables that occurs
to me is the experimental study of prerequisite skills. This would be an
experimental analysis of the efficiency of a person's learning skill H when
skills E, F, and G, which logically appear to be prerequisites to H have not
been learned. Through this and related types of studies, we can not only
discover much about what sequence of learning will be most efficient but
also about the nature and function of some skills that we do not understand
very well.

Professional Literature

Comparison of the contents of the <u>Journal</u> <u>of</u> <u>Applied</u> <u>Behavior</u> <u>Analysis</u>
(JABA) with the contents of other behavioral journals dealing with applied
work suggests that the other journals devote more space to problems involved
in Step 1 of the educational model presented earlier. In particular, the
other journals contain a modest number of articles presenting possible con-
ceptual analyses and assessment tools that have been found useful in
determining the nature of a particular type of problem. For example,
Hersen (1973) presents a critical review of several measures of fearfulness
and the research relating to them, Carter and Thomas ( ) present an
interesting system for determining the specific deficits and excesses in
the interaction between a husband and wife, and Holland ( ) presents an
outline useful in interviewing parents of children with adjustment problems.
It might be argued that any one of these articles would be of interest to
only a small fraction of the readers of JABA. This may be true, but it
may be as much a limitation in the nature of JABA as it is in the nature of
the articles.

JABA is a general journal presenting developments in work with the
retarded in institutions, work with parents of essentially normal children,
work with speech problems of cleft palate children, work with adults who are
out of jobs, work with institutionalized psychotics, work with teachers in
general education and an unlimited number of other possibilities. This kind
of journal is needed because methods developed in one field of application
are often at least partially generalizable to other fields; but it appears
that such a journal inevitably encourages primary interest in independent
variables, as though behavior occurred in the abstract. In addition to
developing greater expertise with independent variables, behavior analysts
need to be encouraged to conduct research oriented toward better understanding
of dependent variables (as suggested above), to develop tools for assessing
behavioral needs (including tests, which are simply planned, standard,
stimulus situations), and to raise ethical, professional and programmatic
issues regarding work in a particular type of setting or with a particular
type of population. This calls for special interest journals, and I propose
that any further journals established by behavior analysts be of this type.[9]

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[9] There is considerable validity in arguing instead for behavior analysts
publishing in existing special interest journals. This could help to interest
others in a more emperical approach to their area of interest, and it would
certainly increase the behavior analyst's exposure to the research, thought,
and other activities of non-operant professionals--an outcome which many of
us, in our less arrogant moments, admit would improve our own competence.

SUMMARY

It has often been asserted that behavior analysis is a conceptual framework and a technology that tells us much about how behavior is learned and how it can be taught, but little about what behavior should be learned. While it may be true that behavior analysis tells us little about what should be taught, this does not mean that the behavior analyst has no responsibility regarding the issue of what should be taught.

Four steps involved in all education and therapy were outlined, the first having to do with determining what behaviors are needed, and the other three having to do with the planning, implementation and evaluation of behavior change procedures. It was suggested that applied behavior analysts, perhaps because of the laboratory origins of their approach to problems, have often ignored the processes and issues involved in setting behavioral objectives and accepted no responsibility for them. While this is an appropriate mode of professional conduct in some contexts, it was suggested that the behavior analyst at least has the obligation to recognize the limits he is setting on his responsibilities and be sure that others recognize and accept them.

Suggestions were also made regarding how behavior analysts, as a group, can come to be more knowledgeable, skilled, and responsible in Step 1 of the educational or therapeutic process. These suggestions dealt with our professional identification, our training programs, our research, and our professional literature.

To the extent that behavior analysts limit their responsibility and interest to independent variables, they open themselves to criticism of irresponsibility and superficiality. While the kind of preoccupation with "diagnosis" that has characterized much educational and therapeutic endeavor would not be a healthy change (and is unlikely in any group that has a powerful technology for changing behavior and the methodology for continuously improving that technology), a greater interest in this aspect of our work appears to be needed.

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