Behavioral Assessment of Human Preference¹

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Recent additions to the experimental literature (Ainslie, 1974; Catania, 1975; Tachlin & Green, 1972) reflect a growing interest among operant researchers in extending their findings to more global aspects of behavior. While in most cases the human analog has not been explicitly explored, Catania and others have made tentative attempts to outline the implications of their research with respect to complex forms of human behavior, specifically, choice and preference.

These terms are, unfortunately, in common usage and have, in addition to their denotations, many connotations that behaviorists somewhat justifiably find objectionable. Because these terms are often used in mentalistic ways, however, does not mean that they do not in fact refer to behavioral events, and that they are not subject to a precise functional analysis. It should be obvious that these terms are not applied randomly, and it should therefore be within our capabilities to discover the environmental conditions that control our application of them. Further, it appears that within our socio-cultural tradition these concepts are considered important—even critical. For example, they are intimately related to the issues of self-control and also to coercion in the legal sense. Arguing that the terms are meaningless and that from a behavioral perspective all choice is determined anyway does not aid in a behavioral analysis of the culture, nor does it prevent mentalistic analyses of human behavior. It is arguable, in fact, that behavior analysts have a major responsibility to examine the concepts of preference and choice in terms of the behaviors involved and their controlling variables, and that this is the *only* strategy that will avoid mentalism.

To define terms, then: “choice” in the context of behavior analysis refers to the provision of concurrent reinforcement schedules with incompatible operants. Behavior in relation to these schedules is determined by the environmental and genetic history of the organism. “Preference”

refers to the relative strengths (as measured by rate of responding in a free operant situation) of the available operants.

The concurrent nature of most behavior in the natural environment goes without saying. What is often overlooked, however, is that this fact may limit the external validity of considerable operant research. Generalizing from a single operant to a multi-operant situation is risky at best, when one considers such findings as Findley's (1962) that schedules that include options maintain response outputs far greater than those maintained by single reinforcement schedules. So, while a molecular analysis of behavior has proven undeniably fruitful in the past, if behavior analysts are to deal effectively with complex human problems in complex real-life situations, they must extend their analyses. Findley (1962, p. 114) states this view well: “. . . the way to increase our understanding of behavior is not to analyze a particular bit of behavior exhaustively, but rather to complicate the sample of behavior under question as rapidly as good experimental procedure and technology permit.”

Some 17 years after the publication of this statement, a reasonable technology of preference and choice is available. In fact, there are several experimental approaches to the topic that have yielded valuable information. Each has its advantages and disadvantages in terms of type of information gained, ease of data analysis, and convenience of administration.

The following discussion is not exhaustive of the approaches one can take, but it does include the most commonly used procedures. For the most part, the examples cited will be extra-laboratory experiments, in the sense that they were performed in relatively non-controlled, natural-environment settings. Obviously, although this type of research results in some loss of precision, and often precludes extremely fine-grain analysis, the technology of preference and choice is an *applied* technology, and its usefulness must be demonstrated in the applied situation.

The most obvious method of assessing preference, and the one most frequently used (even, sometimes, by behaviorists), is verbal report. While it seems reasonable to make use of

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our verbal community and simply ask people what they prefer, Morgan and Lindsley (1966) report data that illustrate the pitfalls of this approach. When they offered their subjects a choice of stereophonic or monolithic music, all subjects indicated a preference for stereo. When the two types of music were programmed as reinforcement for responses on either of two manipulanda, however, half of the subjects exhibited a preference for stereophonic music (higher frequency of responding on the manipulandum associated with that type of music), and half exhibited no preference. Data from two of the four subjects are reproduced in Figures 1 and 2. In both cases the response contingencies were

Figure 1. Response record from a subject showing preference for stereophonic music.

reversed on the two manipulanda within a single session to control for right or left bias. The data in Figure 1 demonstrate a clear preference for stereophonic music. The data in Figure 2 reveal no preference for either stereophonic or monophonic music, although it is clear that music of either kind is a sufficient reinforcer to maintain considerable amounts of responding. The authors report that this subject was left handed, and as is evident from the figure, demonstrated a left

Figure 2. Response record from a subject showing no clear preference for stereophonic or monophonic music.

manipulandum bias. Morgan and Lindsley report that the other two subjects in this study produced data very similar to these two.

Thus verbal preference is not always a valid predictor of behavioral preference. This seems reasonable, inasmuch as the reinforcement for a verbal response is seldom the choice object itself. More often it is some unspecified aspect of the experimental situation such as experimenter approval. In a behavioral assessment of preference, however, the subject's choice response is consequted with presentation of the chosen condition; with such different contingencies operating, it is hardly surprising that the two methods often yield different results.

The simplest behavioral assessment of preference involves some arrangement of concurrent schedules. The two-key concurrent procedure (Figure 3) provides two response manipulanda, responding on each of which results in delivery of reinforcement according to independent (usually VI) schedules. Placement of the response keys or bars is such that simultaneous responding cannot occur, but it is still possible that some sort of superstitious response pattern will develop: response chaining (for example, right key responding is *always* preceded by a left key response) or alternation of responding (right key, left key, right key, etc.) is common, particularly with independent variable interval schedules, since responding on one key increases the likelihood that the first response on the alternate key will be

TWO-KEY CONCURRENT ARRANGEMENT

Figure 3. Arrangement of response manipulanda in a two-key concurrent situation.

reinforced. This is so because reinforcement on interval schedules is made available contingent on the passage of time. Reinforcement is delivered following the first response made after time has elapsed. In the present case time is elapsing on the unused key while the organism is responding on the alternate key, thus increasing the probability that a reinforcement will be set up on the unused key. This problem of superstitious responding may be prevented with the imposition of a change-over-delay, such that the first response on the alternate key is never reinforced.

The dependent variable here is generally relative rate of responding on each key. Relative time spent in each condition is another possibility, depending on the subject, the manipulanda used, and the spatial arrangement of the experimental chamber. If the manipulanda are sufficiently far apart, a photoelectric beam might allow measurement of time spent in front of each manipulandum, even when the organism is not responding. If this arrangement is not possible, then relative time is measured from first response to last response on a given manipulandum—and that is equivalent to a relative frequency measure.

King and Lockhart (Note 1) used a simple two-key concurrent procedure to assess preference for erotic visual stimuli (Figure 4). Subjects in this experiment initially viewed pairs of slides of sexual scenes. Within each pair, content of the slides was similar, but they varied on either of two dimensions: amount of clothing worn by models, and inclusion or exclusion of models' faces. This initial viewing is an example of forced exposure (common to many preference experiments), in which subjects initially are exposed to all options. Otherwise, subjects may never choose one option, and therefore the obtained preference might not

be reliable, given later forced exposure to the alternate condition.

SEXUAL PREFERENCE

Figure 4. Representation of the experimental space for sexual preference experiment (King & Lockhart, Note 1).

Following forced exposure, subjects then responded on either of two telegraph keys. Responses were reinforced with 5 second slide exposure according to conc VI VI 20 sec schedule. Finally, subjects, viewed all slides in random order and rated them on four semantic differential scales: pornographic—non-pornographic, attractive—unattractive, sexually stimulating—non-sexually stimulating, and pleasant—non-pleasant.

Results showed considerable variation across subjects in terms of which slides they chose to view (a common finding, particularly when subjects constitute a heterogeneous group with different reinforcement histories), and there was no correlation between the behavioral preference and the responses to the rating scales. The experimenters found the procedure to be convenient to administer and the data easy to interpret, much of it being in the form of cumulative records, which make between-subject and between-slide comparisons easy.

This experiment has some implications for the field of sex research, which has been plagued with

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a major problem of reactivity in its measurement devices. The principal assessment techniques used by sex researchers have been the traditional physiological measures and the rating scales (verbal report). Unfortunately, the former (heart rate, GSR, pupil dilation, penile circumference—measured by mercury strain gauge or plethysmograph) sometimes yield similar results regardless of type or arousal, sexual or otherwise. For example, the placement of the plethysmograph may cause and maintain an erection. Also the physiological responses to erotic stimuli are not always different from those made to non-erotic (for example, violent) stimuli. And as was stated earlier, verbal report is not always a good predictor of overt behavior. This behavioral preference procedure, then, offers sex researchers yet a third way to examine behavior via a vis sexual stimuli. No doubt there are clinical applications as well, since both of these groups (researchers and clinicians) want to know what people will *do* in addition to what they will say, when confronted with certain situations.

Another major application of the two-key concurrent procedure is suggested by Lindsley's work (1962) with consumer ratings of advertisements. Traditionally, ratings of this nature are obtained through responses to a questionnaire or through a telephone interview following a video presentation. There are two questions of immediate interest: Will the verbal report accurately predict whether the rater will watch the advertisement when it appears on television? Secondly, what effect will the commercial have on his purchasing behavior? It is doubtful that questionnaires and interviews administered post hoc address either of these two questions. Lindsley, however, programmed advertisements to be presented on a conjugate reinforcement schedule such that viewers were required to press a button at a specified rate in order to view a commercial. If the rate fell below a certain level, the brightness of the picture decreased gradually. The procedure allows for moment-to-moment tracking of viewer attention and yields feedback to producers concerning their advertisement's ability to control the consumer's viewing. Minor modifications of Lindsley's procedure such that viewers were presented with two advertisements, each programmed conjugately on its own response manipulandum and presented to the viewer concurrently, would allow for comparisons of viewer's preferences for various commercials. Although neither this nor Lindsley's procedure

allows for the measurement of viewer purchasing behavior, it does provide the advertiser with information as to how reinforcing his message presentation is. In this way he at least might be assured that the consumer would stay to watch his commercial rather than take that opportunity to prepare a snack.

Another, similar, procedure for assessing preference is a single key concurrent situation with a switching key (see Figure 5). In the laboratory two schedules are arranged concurrently on one key. Each is correlated with a colored light and the

SIMPLE CONCURRENT ARRANGEMENT WITH SWITCHING KEY

Figure 5. Arrangement of response manipulanda for a single key concurrent situation with the switching response made explicit.

subject gains access to each schedule via the switching key. This method is functionally equivalent to the simple two-key procedure, but has a major advantage in that the switching response is explicit. Not only does this make possible easy measurement of time spent in each condition (without a photoelectric beam) in addition to relative response rate, but also potentially permits manipulation of the response requirement for entry into each condition.

Moving from the molecular world of the laboratory to the molar world of applied research with the concurrent schedule sometimes taxes one's ingenuity. How, for example, does one study preference for different instructional procedures in a college setting? The time period is expanded, and there are no response manipulanda as such. And of course there are no switching keys. The first of several experiments involving academic preferences used the following set-up (concurrent schedule with switching key) to determine whether students preferred multiple choice or fill-in-the-blank test items in a

psychology course (Figure 6) (Lockhart, Sexton, & Lea, 1975). The course was self-paced and quizzing was individually scheduled by each student following completion of a unit of material. Forty-item tests were divided into four 10-item sub-tests, and students were permitted to choose the question format of each sub-unit. To insure adequate exposure of all students to both test item types, they were permitted to choose the same condition a maximum of two times consecutively before they were forced into the alternate condition for one sub-unit. (This is known as a minimum-maximum completion

Figure 6. Application of a single key concurrent arrangement with switching key to a college testing situation (Lockhart, Sexton, & Lea, 1975).

requirement). The dependent variables were (1) rate of correct responding by question type, (2) the relative rate of responding for one condition *versus* the other. (In other words, how many times did the student choose multiple choice as opposed to fill-in-the-blank test items in a 10-minute session?), and (3) the rate of correct responding in the preferred *versus* the non-preferred condition. The results indicated there were no significant differences in performances under the fill-in *versus* the multiple choice condition, nor did the preferred condition generate better performance than did the non-preferred condition. Subjects did show an overwhelming preference for multiple choice question type, however.

Similar studies have examined student preference for the forced-excellence requirement of individualized instruction systems (Lea and Lockhart, 1976) as well as preference for various

delays of feedback (Lockhart and Lea, unpublished data) and for self versus instructor pacing (Atkins and Lockhart, 1976). These other projects have varied the minimum-maximum requirement to allow freer range of student choice while preserving forced exposure. In these studies one can examine not only preference for condition, but also quality of performance under each condition and in choice and no-choice situations.

A related procedure that has received widespread use by basic researchers is the concurrent chains approach, which involves the concurrent presentation of two chained schedules (Figure 7). There are two response manipulanda, each associated with the stimulus of the initial link of one chain. Responding on each key is reinforced on an intermittent schedule (usually VI) with the presentation of the stimulus correlated with the terminal link of the chain associated with that key. Once this stimulus has been presented,

CONCURRENT CHAINS PROCEDURE

Figure 7. Sequence of events in a concurrent chains arrangement.

the stimuli correlated with the initial link of the chosen option disappear. During presentation of the initial links stimuli, switching may occur freely, although here again a change-over-delay is typically in effect. Responding in either of the terminal links results in reinforcement. Preference is measured in terms of relative frequency of responding in the initial link of each chain.

This seems to be a rather indirect method of

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assessing preference, in that the typical schedule used in the initial links (a VI) doesn't allow for differential reinforcement of higher rates of responding. Since the organism's behavior is not controlling the presentation of the terminal link in any moment-to-moment fashion, it seems that one must infer preference, rather than measure it directly. It does, however, control for reinforcement density, a problem that exists when access to each condition is allowed to vary directly with subjects' rate of responding. In any event, it is certainly a more cumbersome procedure than one employing a simple concurrent schedule, and perhaps because of this there are few human studies employing concurrent chains. One study (Waddell, 1972) used equal independent VI schedules in the initial links and unequal VI's in the terminal links to expose two subjects (normal children) to different schedules of point delivery. The points were exchanged after the experiment for money. The dependent variables were relative response rate in each condition and relative amount of time spent in each condition. The results indicated that the relative rate of responding and the relative time spent in each condition matched the relative rate of point delivery in the terminal link.

A final major method for assessing degree of preference is a titration procedure in which the parameters of a concurrent schedule are varied systematically until the point of indifference (lack of differential responding) is reached. It is a familiar procedure to those working in psychophysics, but has been only infrequently used to study choice behavior, particularly in the natural environment. One such study (Fuqua, Heckler, Brett, & Saunders, Note 2) examined degree of preference for multiple choice and fill-in test items using the design shown in Figure 8. Students were permitted to choose test item type for each unit of material. With each successive unit that the student chose the same test item type, the criterion for passing that unit was increased, such that the tests became progressively more difficult. Switching to the alternative test item type resulted in a decrease in the discrepancy between the criteria for the two test item types. This reduction continued until the student again switched. This approach yields a finer grain analysis of the strength of the preference for a given condition than do the other methods. The dependent variables in this experiment were accuracy ratios ($\text{rate of correct responding} \div \text{rate of incorrect responding}$), but depending on the

Figure 8. Titration of behavioral preference for multiple choice and fill-in items in a college course (Fuqua, Heckler, Brett & Saunders, Note 2).

situation under investigation, could be rates of responding under each condition. In addition, a comparison is available of the relative reinforcement value of each condition: How much more difficult did one test format have to be before the student would switch preference? The main disadvantage of this procedure is that it is somewhat more complex to administer. It is interesting to note that the results of this study strongly support and extend the results obtained in the previous experiment concerning test item type: Students overwhelmingly prefer multiple choice tests. This titration procedure allows the moment-to-moment tracking of changes in preference as a function of changes in two powerful variables: reinforcement history with respect to the two test items types and criterion level, and it allows for quantification of preference. Titration might also be accomplished by the use of a switching key: The response requirement for switching to the alternative schedule or situation might be reduced as a function of the number of successive reinforcements obtained in one condition. Through the use of either of these two methods one might easily compare reinforcers such that A is offered in conjunction with B, and B is offered in conjunction with C. It might then be possible to predict the results of a comparison of reinforcer A with reinforcer C, since the results of the previous two experiments express the degree of preference in quantified form.

The implications and potential impact of preference research in education stretch far beyond the immediate problem of what type of mid-term exam to administer, for as Keller (1968, p. 86) has said, the goal of instructional researchers should be to provide conditions which produce maximum performance *and* maximum enjoyment for students. The reasons for this are both compelling and obvious, particularly for the educational administrator who is in touch with the realities of declining enrollments. Brutally spoken, a student who enjoys his educational environment will be more likely to return to take further courses than the student for whom the environment is aversive. In addition it seems reasonable (although admittedly speculative) that students who enjoy their studies will be more likely to apply what they have learned to other settings. And although this latter reason is subject to challenge and empirical validation, the former is not: While it might seem that public opinion is running against student control of academic environments, simple survival will dictate that

administrators will be responsive to student demands when the body count drops. And this is as it should be. Students are, after all, the ones who are most affected by what happens and they are paying for the services a university provides. But the most common sources of data about student preferences for courses and curricula are student complaints and course evaluations. Both involve verbal assessment of preference and neither may in fact provide much information about future student behavior (cf. Azrin, Holz, Goldiamond, 1961; Morgan and Lindsley, 1966). Rather than giving students a voice, educators should perhaps arrange the environment so as to assess their behavior. The idea is so foreign to academic environments that no catch-phrase exists to describe it, yet the technology exists, as demonstrated in the previously described research.

The Broader Perspective: Choosing To Choose And The Consequences Of Choice

Underlying much of the preference research with humans have been two major questions: Do people prefer option situations? and do people perform better (particularly in academic settings) when they are allowed to choose their conditions of work? The first of these is especially interesting in its implications for the issue of freedom. The culture espouses freedom as a positive value: In fact, it is one of the founding principles of this country. Certainly the concept of freedom is meaningless unless it includes reference to a multiplicity of options. It is reasonable to expect, therefore, that people raised in this culture would choose option situations insofar as it is possible. Although the question remains as to the universality of this preference across cultures, it is likely that most people would predict that, all things being equal, they would "choose to choose," as it were. Catania (1975) has published data that bear on this issue: He offered pigeons a choice between a multiple option reinforcement situation and a single option situation, keeping reinforcement constant across options, and his subjects preferred the multiple option situation, even when the two options available offered equal reinforcement. So these data do support the notion that organisms prefer freedom; at least, this is true of the pigeons with the particular reinforcement histories arranged by this particular experiment. And herein lies the rub. Despite the early verbal conditioning concerning freedom that we are all subject to, humans have a very complex history with respect to option situations. And

sometimes they will choose to choose, and sometimes they won't. The situation is reminiscent of the open classroom, clearly a multiple option environment. This was not perhaps the most successful innovation in modern educational history for a number of reasons which are not relevant here. But one very relevant aspect of the open classroom is the consequences of choice. In most human option situations it is quite possible to choose wrong; to limit, rather than to maximize one's reinforcement, or worse yet, to expose oneself to punishment contingencies. Catania's pigeons were never placed in this dilemma but rather chose between two positive reinforcement schedules. Two studies with human subjects in academic situations illustrate the point. In one, (Lea & Lockhart, 1976) students were offered a choice between a forced-excellence criterion for passing a test and a criterion offering a full range of grades. Thus they could either opt for condition A, in which they had to achieve 90% accuracy to pass the test, or condition B, in which they could pass with a score of 70%, 80% or 90%, with a resulting grade of C, B, or A. Students could re-take quizzes indefinitely until they reached a level of performance that either met their chosen criterion for passing or surpassed it. In this study the vast majority of students chose to work in the option condition rather than in forced-excellence, yet they nearly all consistently achieved accuracies of 90%. Here, then, was a preference for freedom.

In another study, (Atkins & Lockhart, 1976) students were offered a choice between a self-paced (option) condition or an instructor-paced sequence of quizzes. In this study students overwhelmingly chose the instructor-paced condition. In contrasting the two experiments it is important to know that the first involved students with advanced standing (fairly extensive academic histories at the college level) and the second involved primarily freshmen and sophomores. Further, the consequences of "choosing wrong" in the first situation was at worst a grade of "C" for the course. In the second (pacing) experiment, the consequence of "choosing wrong" was putting oneself in an academic situation that called for a fairly high level of study and scheduling skills—and if one didn't have these skills, one might never schedule a test at all. The result necessarily was failure. Similarly in the open classroom, students with varied academic skills and greater or lesser ability to pace themselves are asked to choose between working and not

working. Or working on an easy versus a difficult subject. It is no wonder that at some schools students petitioned the school boards to return to structure. In both these latter situations there appears to be no preference for freedom. It seems reasonable, then, to hypothesize that people prefer option situations (freedom, if you will) to the extent that those options involve at the very worst some minimal risk of negative consequences, or to the extent that they have the necessary behavioral repertoires to maximize the reinforcement opportunities available.

The second question, "Do people perform better when permitted to choose?" is equally troublesome. It seems logical that people would perform better in a chosen than in a non-chosen situation, since one would suppose that the former condition, all other things being equal, would be more reinforcing. And, in fact, one study (Lovitt & Curtiss, 1969) reported that a student who set his own criteria levels worked more accurately than he did when his teacher set them for him, even when the levels were identical. These results seemed to offer support for the notion that people want to control their own lives—that the control itself is reinforcing, and that lack of control may be detrimental in some respects. Would that it were so simple! . . . Reanalysis of these data (Glass, Willson, & Gottman, 1975) indicate that there was no significant difference in performance and these results have been supported by a number of preference experiments in academic settings. These findings don't resolve the question, of course, since there are no doubt many other factors which contribute to differential performance, not the least of which might be the degree of difference between the preferred and non-preferred conditions. But the research available does refute the categorical statement that freedom of choice in working conditions is essential for optimal performance.

Implications for Behavioral Analysis

Finally, one might ask, what's a behavior analyst doing worrying about preference and provision of options anyway? There are two very good answers to this question, one practical and one not so practical. The first concerns the increasing pressure exerted on purveyors of social programs, particularly in institutional settings, to provide non-coercive rehabilitative services. While it is easier to set up unitary programs that detail one path for reaching the goal (generally discharge from the institution), these programs have been

criticized on grounds of coercion, even when they involve positive reinforcement rather than aversive control. Settings in which there is an extreme lack of positive reinforcement opportunities are particularly vulnerable to this attack, and most penal institutions and residential facilities for involuntarily committed individuals of whatever kind fall into this category. In these settings even positive contingencies are considered coercive because there is no meaningful choice between participating in the program and partaking of the proffered reinforcers on the one hand, and not participating in the program and living in a bare custodial environment. But with a little ingenuity and foresight the creators of rehabilitative services could design programs that offer a variety of ways to reach several specified goals, allow their clients to make choices, and thereby possibly avoid community and legal outcry concerning the issues of control and coercion. Further, this type of rehabilitation environment more closely approximates the natural environment to which these clients will eventually return and might therefore result in lower recidivism rates.

Viewing behavior from a concurrent perspective makes the issue of choice highly salient, especially with respect to people who are institutionalized largely because they exhibit maladaptive social behavior. Adaptive social behavior can be at least partially analyzed in terms of the ability to make choices that are culturally acceptable, i.e., that are reinforced by reasonably large segments of the non-institutionalized population. Unfortunately, many of these behaviors have no other immediate pay-off. For example, remaining sober for one day is not likely to have many reinforcing consequences for an alcoholic, and may in fact result in considerable punishment. Many unacceptable, non-societally-reinforced, choices on the other hand, are those behaviors for which there are long term or delayed negative consequences but immediate positive ones. While the problem is in no way restricted to institutionalized populations (cigarette smoking is an example of "normal" behavior under this type of contingency control), it seems to be more of a problem for institutionalized populations than for others, and it is clearly an issue that must be dealt with satisfactorily before rehabilitation can be termed successful. Therapy programs that teach clients verbal repertoires that allow for comparison of projected consequences and for the generation of sufficient discriminative stimuli for

appropriate choice behavior, and then provide opportunities within the institutional setting for practice of these skills, might prepare their clients more adequately for re-entry into the non-institutional world.

The second answer to the question of why behavior analysts should deal with preference and choice concerns the development of a "cognitive behavioral" movement within the field in the past few years. The movement is evidence of the currency of the topics of freedom and preference, and choice and self-control (for only with choice can there be self-control), and appeals are being made to man's cognitive capabilities in an effort to explain these phenomena. This is an old problem: Whenever the controlling variables of an event are not immediately obvious, it is seductively easy to fall back on mystical explanations. And the solution to the problem is not to claim that there is no problem or that there is no phenomenon; that tactic will lead only to more of the same mystical explanations. These are real phenomena, in the sense that certain stimuli differentially control the response of applying the verbal label. For example, behavior that appears to be under the control of long-term contingencies rather than short-term is often labelled self-control. Frequently referred to as "delay of gratification," this might be further analyzed as a concurrent situation, in which the organism is presented with a choice between immediate small reinforcement and delayed large reinforcement. The question to be asked is, what environmental variables control each choice response? The alternative then, to leaving such issues as choice to cognitive behaviorism or simply ignoring them, is to define precisely and functionally analyze the situations and behaviors to which we apply cognitive labels and explanations: The experimental technology exists and the field is rife with research possibilities.

Reference Notes

¹King, R. P., & Lockhart, K. A. A behavioral assessment of preference for erotic visual stimuli. Paper presented at Third Annual Meeting of Midwestern Association of Behavior Analysis, Chicago, Ill., May, 1977.

²Fuqua, R. W., Heckler, J. B., Brett, B. E., & Saunders, K. A. A titration procedure for assessing student preference. Paper presented at the Fourth National Conference on Behavior Research and Technology in Higher Education, Pittsburgh, PA, September, 1977.