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Announcements

THE EXPERIMENTAL ANALYSIS OF HUMAN BEHAVIOR BULLETIN

The EAHB Bulletin is published twice yearly, in the Spring and Fall, by the Experimental Analysis of Human Behavior Special Interest Group (EAHB SIG), a group organized under the auspices of the Association for Behavior Analysis (ABA). The inside back cover has information about joining the SIG and contributing to the Bulletin. Publication costs are paid by the dues of the SIG members and by the Department of Psychology of West Virginia University.

Editors: Philip N. Chase & Michael Perone, West Virginia University

Editorial Assistants: Theodore A. Hoch, James H. Joyce, & Barbara J. Kaminski, West Virginia University

CALL FOR STUDENT PAPERS

The EAHB SIG is sponsoring its fifth annual awards contest for student authors. The purpose of the contest is to foster student thinking and scholarly writing in the area of the experimental analysis of human behavior. Both undergraduate and graduate students are eligible.

Papers may be either an integrative review of some area of operant research involving the use of human subjects (although it is acceptable to include discussions of other kinds of organisms), or data-based presentations of the same. They may be written from historical, conceptual, theoretical, or empirical perspectives.

Entries will be judged according to their clarity, scholarship, conceptual rigor, and thoroughness by a panel of judges who are active in the experimental analysis of human behavior. Names and affiliations of authors will not be revealed to the judges (i.e., reviews will be "blind.")

There is no set number of awards. Authors of outstanding papers will be given a handsome plaque certifying their accomplishment and invited to present their papers at the 1989 ABA convention in Milwaukee. All authors, whether or not they are selected for an award, will receive at least two written reviews of their papers.

Submissions (or inquiries) should be sent to Barbara Wanchisen, Baldwin-Wallace College, Berea, Ohio 44017. The submission deadline is October 31, 1988.

Papers should (a) be less than 35 double-spaced pages of text (not counting references, tables, or figures; (b) include a 100-200 word abstract suitable for publication in the Bulletin, and (c) be submitted in triplicate.

In addition, submissions must include a letter from the student's major advisor stating: (a) that the paper has been written primarily by the student (although the major professor may have helped the student organize the paper or have made some conceptual or literary contributions); (b) whether the author is a graduate or undergraduate student; and (c) in the case of graduate students, that the student has not completed the requirements for the doctoral degree.

DEBRIEFING HUMAN SUBJECTS: HOW MUCH SHOULD THEY BE TOLD?

Richard J. DeGrandpre and William Buskist
Auburn University

Debriefing subjects in human operant research, like any other research involving humans, serves two functions: (a) to inform subjects about the purpose and findings of the experiment, and (b) to gather information that might be useful in interpreting the findings. Questions such as "What, in your opinion, was the purpose of the research?" and "Why did you respond in the way you did?" are intended to solicit subjects' rationale for their performance on experimental tasks. The pitfalls of using subjects' answers to such queries as a means for analyzing experimental results have been addressed in a recent paper by Perone (in press). This article examines the first function. Specifically, two questions are addressed: How much information about the nature of the experiment should be given during debriefing to the subjects? And, how might subsequent research be affected by those subjects who discuss experimental protocols and results with future subjects?

Extensively disclosing the true nature of the study during debriefing has important implications for most lines of research, particularly those in which subjects are selected from circumscribed populations such as introductory psychology pools. This is especially true for human operant research because most subjects are college students (Buskist, 1987) and because all subjects may not be research participants at the same time. As a result, opportunities may exist for former subjects to discuss details of the experiment with potential subjects. In fact, several studies show that former subjects in psychological research frequently discuss their experiences as research subjects with friends or classmates (e.g., Horka & Farrow, 1970; Lichtenstein, 1970). In one study (Wuebben, 1967) over 60 percent of subjects sworn to secrecy regarding their experiences as subjects nevertheless discussed the study with at least one person outside the experiment. Unfortunately, similar data documenting the extent of this problem among subjects in human operant research have not been collected and published.

Of course, subjects do not have to wait until they are debriefed to discuss experimental protocols with potential subjects; merely participating in a single session provides a suitable, and sometimes interesting, topic for discussion with classmates. The same problem exists for subjects who choose not to be debriefed: They, too, may share their interpretation of the experiment with potential subjects.

When a former subject divulges the details of their research participation to a potential subject who is later selected to participate in the study, the possibility arises that the latter's behavior may be prejudiced by the former's verbal description of the experiment. On this view, students may enter the experiment under strong rule-governed control, masking the effects of the experimenter's instructions or experimental contingencies.

What steps can human operant researchers take to prevent their subjects from coming under control of verbal descriptions provided by former subjects? According to the American Psychological Association's (APA) Ethical Principles in the Conduct of Research with Human Participants (1982), the experimenter is obligated to "provide a full account of the facets of the study not revealed during participation" (p. 63). More specifically, Principle H states:

"After the data are collected, the investigator provides the participant with information about the nature of the study and attempts to remove any misconceptions that may have arisen. Where scientific or humane values justify delaying or withholding this information, the investigator incurs a special responsibility to monitor the research and to insure that there are no damaging consequences for the participant." (p. 63)

Most human operant research does not involve explicit deception or expose subjects to psychological or physical harm. Hence, in most cases a general description of the experimental protocol and results may satisfy APA guidelines (assuming that withholding information is a legitimate procedure to ensure the scientific integrity of the research). For example, if one was conducting research into cooperative behavior using dyads, debriefing might simply involve informing the subjects that they had participated in a social psychological experiment studying behavioral interactions between two individuals. Understating the reasons for the dependent measures and the effects of the independent variables minimizes the instructional-type information former subjects could divulge to a potential subject. This would increase the likelihood of bringing the latter's behavior under stronger control of experimental variables if he or she is selected to participate in the study.

A second strategy is to delay more thorough debriefing until the entire experiment or series of experiments is completed. Delayed debriefing, however, does pose obvious logistical and practical problems, especially for extended programs of research. One solution is to mail subjects a complete written description of the experiment to their permanent home address once the experiment is over. Alternatively, the experimenter may choose to arrange an appointment to fully discuss the research at some mutually agreeable future date.

For those few cases where the experiment entails deception or aversive contingencies, a combination of the aforementioned strategies may be a viable tactic. The experimenter could defer complete debriefing until the experiment's end but give a general description of the experiment and exculpate subjects upon completion of their participation.

Several years ago a cartoon depicting two rats, one exiting an operant chamber and the other entering it, appeared in several popular psychology textbooks. While passing, the first rat whispers to the second, "pst...pst...FR 50--pass it on!" The cartoon is funny because rats cannot talk, let alone possess knowledge of experimental protocols and results. But humans can do both, and that suggests the need for research that identifies the extent of post-experimental "gossiping" in human operant research and yields methods for controlling this problem.

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A PROBLEM OF HISTORY: ASSESSING AND CONTROLLING THE LEARNING HISTORY OF SOPHISTICATED SUBJECTS

Philip N. Chase
West Virginia University

Operant studies usually involve intrasubject analyses in order to control for differences between subjects and to decrease the experimental variability due to these differences (Johnston & Pennypacker, 1980; Sidman, 1960). One of the hallmarks of intrasubject methodologies has been to start experiments with precise control of the history of the subjects. The extent to which the experimenter cannot describe the history of the individual is a limiting factor in the level of prediction and control that can be obtained.

Control over history has typically been achieved in studies of animal behavior through the use of naive subjects who are assumed to be similar to each other. In human behavior studies, it is often difficult to describe the subjects' learning histories because we use such sophisticated subjects. This is especially true with studies of verbal behavior and verbal control, and as a result we often find that subjects perform differently from each other. We are never sure whether these differences are due to independence of the experimental variables and performance or whether the experimental variables are only relevant for subjects with particular histories (see, for example, recent studies on the control of human behavior by instructional stimuli). One way that we can learn more about the subjects' learning histories is to assess the subjects' entering repertoires.

The basic tactic that I will describe is that of pre-experimental assessment. This is not a novel tactic. Both Sidman (1960) and Johnston and Pennypacker (1980) argued for the use of subject selection procedures to precisely describe the subject population. However, very few articles on human behavior report the use of premeasures or how premeasures can be used to assist intrasubject analyses. In fact, of the 48 experimental articles on verbal relations published in the Journal of the Experimental Analysis of Behavior between 1958 and March, 1988, only 14 described pretesting or specific subject selection criteria based on the behavior of the subjects. Likewise, Homer, Peterson, and Wonderlich (1983) found that most applied studies did not use subject selection criteria. Therefore, I would like to describe the kinds of experimental premeasures that we have obtained in our verbal behavior laboratory. We have used these measures for two purposes: (a) to eliminate subjects from our studies when their relevant skills were clearly discrepant from other subjects, and (b) to collect baseline data on relevant skills so that the relations among premeasures, experimental conditions, and subsequent tests of performance could be analyzed.

General Measures of Verbal Repertoires

We have used a number of premeasures to obtain information about the subjects' general verbal abilities. We have asked subjects to report their Scholastic Aptitude Test (SAT) or American College Testing Program (ACT) scores, overall grade point averages (GPA), psychology GPAs, and the kinds of courses they have taken. These measures were fairly easy to obtain and not very time consuming. We thought they might

Portions of this paper were presented at the American Psychological Association Convention, Toronto, Canada, 1984.

be useful for decreasing the variability of experimental results by restricting the subject population in standard ways.

We have found, however, certain limitations of these measures. The most glaring limitation was the lack of predictive or discriminative value of these measures for subject selection. When we have collected information on GPAs and SATs and tried to determine whether subjects' performances during experiments were related to these scores, we found only the most gross relations. For example, in a recent experiment two subjects had particularly high GPAs (3.9 on a 4 point scale) and their performances on verbal learning tests were not sensitive to two experimental manipulations. Subjects with lower GPAs were more sensitive to the manipulations. However, there were many intersubject differences among the lower GPA subjects that could not be related to their relative GPAs.

The second limitation of these general measures was that they were not manipulable. Thus, they were used only as descriptors or as selection criteria and their role in a particular subject's verbal repertoire was difficult to determine.

Both of these limitations point to a basic weakness of these premeasures: They were too general and not sensitive enough for the fine grained analyses that we would like to conduct. Other premeasures have been more useful.

Pretests of General Skills

A second type of premeasure that we have collected involves tests of general skills that were related to the verbal behavior under investigation. We have collected data on oral and silent reading rates, timed vocabulary test performance, rate of accurate typing, and general study behaviors or study strategies.

These pretests have been put to a number of uses. For example, the reading rate tests have been used to select subjects with average to above average reading rates for studies that required a great deal of reading. We found that subjects with low reading rates performed poorly regardless of the experimental manipulations. We believed that it would be too time consuming to bring their rates up to a standard that might make the task less tedious. As another example, a typing test was used to select subjects with fluent typing skills. In this study, the subjects had to type a great deal on a computer keyboard, and if they did not type with similar fluency unnecessary variability would be introduced.

These kinds of tests were more time consuming than the general measures discussed earlier. For example, we developed a study behavior questionnaire that we used in studies related to learning from prose or textual stimuli. It is a shortened version of a study skills inventory created by Johnston, O'Neill, Walters, and Rasheed (1975). Table 1 presents part of this questionnaire. Development of this questionnaire took many hours. We had to design the original set of questions, develop a context for which it could provide information about the subjects' behavior, and conduct pilot tests. Administration also took time. First, a 900-word prose passage was studied by the subjects. Then, the subjects were given a short quiz on the passage. Finally, the study behavior questions were asked. In all, this took about 45 minutes for each subject.

Though more time consuming, these tests generally provided useful information on the subjects' repertoires. We found that performance on the study behavior questionnaire was positively correlated with performance on verbal learning tests. Those subjects who typically engage in a variety of study techniques (e.g., repeat key phrases and definitions, paraphrase definitions, generate examples, etc.) score higher on our learning tests regardless of experimental manipulations. Thus, if testing two types of instructional

Table 1

Study Behavior Questionnaire
[Adapted from Johnston, O'Neill, Walters, & Rasheed (1975)]

1. How many times did you read the material?

Did you do any of the following:

2. Outlining?
3. Underlining?
4. Brackets?
5. Marking any other part of the material?
6. Did you write down key terms, names, definitions, important points?
7. Did you write examples of key terms?
8. Did you paraphrase any of the key terms?
9. Did you use any other study procedures?
   If so, explain.
10. Did you quiz yourself without referring to your notes, study aides, or the text?

Answer the following questions about studying in general:

11. Do you have a suitable place to study that is quiet, well-lighted, and comfortably heated?
12. Do you pick out the main ideas in each paragraph and organize the details around it?
13. Do you look up the meaning of words you do not understand?
14. Do you stop at natural breaks in your reading and try to repeat the main thought in your own words?
15. Do you do well on your essay tests?
16. Do you do well on multiple choice, true-false, and matching tests?

systems to determine which will assist students to master a variety of behaviors, we might select students who do not typically engage in a variety of study techniques. This selection made the tests more sensitive to the kinds of information we were trying to obtain and, when reported, would help others to interpret the results.

Although it was possible to use some of these pretests as dependent variables, their primary use was as subject selection criteria. As stated for the general premeasures discussed previously, this was a limitation because we cannot assess the functional relations among these skills and the environment unless we manipulate them. However, these measures have served a discriminative function for us as experimenters and, therefore, they have utility as a means of decreasing variability within experiments.

Specific Pretests for Conceptual Learning Studies

Probably the most important information about a subject's learning history can be gained from directly testing the kinds of verbal behavior being investigated. This information can serve both as selection criteria and as dependent measures. We have developed a specific pretest for our conceptual learning experiments for these purposes. In these experiments, we have analyzed the kinds of questions students answer with respect to psychological content that facilitate a broad range of conceptual skills. Skills such as paraphrasing abstract descriptions of concepts, problem-solving, writing technical definitions, identifying examples of concepts, and exemplifying the concepts have been tested.

Table 2 presents sample questions

Table 2

Pretest

Read each question carefully. Answer each question as completely as you can. If you don't know the answer to a question, write DK (for Don't Know).

1. Define environment in your own words.

2. In each of the examples below, there is a frequency of an event mentioned. If you think the event is occurring at a high frequency, write <u>high</u>. If you think the event is occurring at a low frequency, write <u>low</u>. If there is not enough information, write <u>neither</u>. Please rely solely on the information provided in the examples. Say why you labeled each the way you did.

   A. Joan plays rugby 6 days a week.
   B. Tod took piano lessons 2 days a week for 5 years. Now he takes piano lessons once a week (once a week is the frequency of interest).
   C. Beth can type 120 words a minute.
   D. Susan reads 20 pages an hour.
   E. Mark use to cook dinner 6 nights a month. Now he cooks 12 nights a month (12 nights a month is the frequency of interest).

3. Give an original example of a consequence.

4. What information would you need to know in order to say whether some events occur at a high or a low frequency?

5. Define abulia in your own words.

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from a pretest on the concept of abulia which was taught to the subjects during the experiment. The pretest involves three types of questions on abulia and three types of questions on concepts derived from the defining features of abulia. Abulia was defined by five critical features. Thus, we asked the subjects questions about abulia and its related features. They were asked to define, exemplify, and identify examples of abulia and the five features: environment, frequency, consequences, reinforcement, and abruptness.

In most of our studies, the information gained from this pretest has been used as a subject-selection criterion in two ways. First, subjects who answered either definition, exemplification, or identification questions correctly for abulia were eliminated from the study. We were not interested in assessing the conceptual performance of subjects who had already learned the specific conceptual behaviors under investigation. Second, subjects who did <u>not</u> answer the definition, exemplification, <u>or</u> identification items for the features of abulia and tau effect were eliminated from these studies. We found that subjects who did not answer these questions had substantially different learning histories from the other subjects and that it took too long to teach all of these subordinate conceptual behaviors. Interestingly, we also found that subjects who did answer the definition, exemplification, <u>and</u> identification items for the features of abulia and tau effect also responded differently during the experiment than subjects who engaged in some -- but not all -- of these behaviors on the pretest. This finding has led to questions that specifically address whether a history of defining, exemplifying, and/or identifying psychological concepts affects similar behavior on new concepts. Therefore, in these future studies we want to be sure that we select subjects who engage only in some of these kinds of conceptual behavior and not others.

The information from the pretest also was used as a baseline measure for the subjects who were retained for the experiment. Pretest performance was compared to tests of the same conceptual behavior after experimental manipulations. When experimental manipulations affected performance on subsequent questions on abulia, then we were fairly well assured that the changes were due to the experimental variables.

One conclusion that might be derived from this discussion is that the only useful pretests are those directly related to the behaviors being assessed during the experiment. I would caution against this conclusion, however. It is likely that a pretest that parallels the experimental tests or probes will not assess some relevant general skills, such as studying techniques or vocabulary, that may affect the outcome of the experiment. For example, the student who uses a variety of study techniques and has learned to define, exemplify, or identify features of abulia has a different history than a subject who has learned only to define, exemplify, and identify examples of these features. The specific pretest outlined in Table 2 would not differentiate between these subjects. However, the study behavior questionnaire in Table 1 might. Therefore, assessing aspects of the subject's repertoire other than the specific skills of the experiment still might be useful.

A second consideration when using pretests is the possibility that the pretests themselves will affect subject performance during the experiment. Therefore, it is probably beneficial to evaluate the possible effects of pretesting with each new pretest that one develops. For example, one could provide exposure to the pretests as an independent variable for a number of subjects. Repeated exposure to the pretests, similar to a repeated acquisition design (see Harlow, 1948; Boren & Devine, 1968, for examples), would evaluate whether the pretests by themselves affect subject performance. If subject performance does not change, then it would be safe to assume that the pretest will not affect subsequent subject performance.

Conclusion

Although precise knowledge of subjects' repertoires is an important feature of intrasubject analyses, analyses of verbal behavior rarely report methods for determining the subjects' repertoires prior to the experiment. Without this information, it is difficult to interpret results, especially when they are dissimilar across subjects. One simple solution to this problem is to begin to collect and report more information on subjects' behavior prior to experimental manipulations. Three levels of information might be useful. General information, like standardized test scores, GPAs, and types of courses taken, may provide experimenters with some subject selection criteria. Also, more specific information might be gained about the subjects' general verbal skills. Reading tests, vocabulary tests, typing tests, and study skills inventories are all examples of tests of general skills that might interact with the subjects' performance during the experiment. In addition, experimenters could use pretests to evaluate the specific entering skills of subjects. These pretests should assess skills the subject needs in order to complete the experiment as well as assess the verbal skills taught or evaluated during the experiment. These pretests can be used both as subject selection criteria and baseline data.

In general, all three kinds of premeasures may be useful, and, in fact, have helped us in our laboratory. Of course, one should be careful when interpreting results that are not due to direct manipulations. Subject performance that is not analyzed through functional, experimental manipulations should be treated as correlational data. In addition, one should also avoid pretests that interact with the effects of the experimental manipulations. These problems, however, should be compared to the benefits that are accrued by more precise descriptions of subjects' histories.

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WINNERS OF THE FOURTH ANNUAL STUDENT PAPER CONTEST

Barbara Wanchisen (Baldwin-Wallace College) has announced the results of the SIG's fourth annual contest for student papers. The winners are Dennis Mac Greene (Rutgers, The State University of New Jersey) and John D. Lewallen (West Virginia University). The titles and abstracts of their papers are presented below.

Each paper was examined by two members of the judging panel, and detailed written reviews were sent to the authors. Besides Barbara, the judging panel consisted of Alan Baron (University of Wisconsin-Milwaukee), Mark Galizio (University of North Carolina at Wilmington), Ed Morris (University of Kansas), and Eliot Shimoff (University of Maryland, Baltimore County).

The winners will present their papers at the ABA Convention in Philadelphia on Friday, May 27, from 2:00 to 3:20 p.m. in Salon 6.

THE THEORETICAL AND EMPIRICAL BASES FOR STUDYING VERBAL AND RULE BEHAVIORS

Dennis Mac Greene
Rutgers, The State University of New Jersey

Three general theories of verbal behavior--generative, mediational, and functional--may seem quite different, but this may be a situation like the proverbial blind men examining the elephant. Each theory may be examining a different area of a large domain, rather than being inherently incompatible interpretations of the entire domain. Ultimately, generative linguistic research may confirm genetic contributions to language behavior, and cognitive research may conclusively demonstrate the operation of unseen organic or verbal "structures" or "schemata" that have some degree of control over behavior. Likewise, as first suggested by Pavlov, language may have a mediating function, bridging gaps between actors, settings, and times -- and this mediation may often take the form of private linguistic events. Nevertheless, even if genetic, cognitive, and mediational contributions to overt behavior are verified and assimilated into behavioral psychology, there remains the question of function: how does language behavior contribute to the adaptation and survival of the human species? What conditions, both evolutionary and contemporary, shape the forms of verbal behaviors, and what variables control the emission of these behaviors? These are questions that will be answered within a behavioral framework.

SELF-CONTROL: A SYNTHESIS OF THE COMMITMENT MODEL AND CORRESPONDENCE TRAINING

John D. Lewallen
West Virginia University

Based on their research with pigeons, Rachlin and Green (1972) proposed an operant model of self-control known as "commitment" which inspired speculative extensions to the behavioral analysis of self-control in humans (Ainslie, 1975; Rachlin, 1974). Despite experimental confirmation of its basic predictions, the commitment model has generated little applied research. It is argued here that the utility of the commitment model has been limited by the failure of existing research to consider verbal responding, and that verbal commitment responses might be established by means of correspondence training (Israel, 1978). Following reviews of both the commitment and correspondence training literatures, this paper proposes a synthesis of the two based on Skinner's (1957) analysis of verbal behavior. It is concluded that the potential of each for the analysis and production of self-control is enhanced if they are considered together rather than separately.

RECENT AND FORTHCOMING PUBLICATIONS IN THE EXPERIMENTAL ANALYSIS OF HUMAN BEHAVIOR

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HUMAN OPERANT LABORATORY PRACTICES II: SUBJECT DEBRIEFING PROCEDURES, COMPUTERS, AND VERBAL REPORTS

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This is the second in a series of articles on the laboratory procedures of the human operant research community. These articles are designed to provide information about human operant research that is not always emphasized in research articles and to help us develop standard practices for conducting human research. The first article, which appeared in the Spring, 1987 issue of the Bulletin, described the results of a survey from our readers on subject recruitment and retention. For this article, EAHB SIG members were surveyed regarding their current methods of subject debriefing, uses of computers in the laboratory, and uses of verbal report data. A total of 21 surveys were returned, however, multiple responses were received on some questions. Therefore, the total number of responses for each question vary in each data summary. In addition, because some of the respondents reported their names and affiliations, we have included this information under the computer questions to facilitate communication among people with similar computers.

QUESTION 1: Do you debrief subjects who have completed your experiments?

Of the 18 persons answering this question, 13 reported that they debrief subjects and three said that they did not. One of these three indicated that although subjects were not debriefed, they were fully informed about the experiment ahead of time. Two other respondents reported that their subjects were small children, and that they were not debriefed.

QUESTION 2: If yes to #1, do you debrief each subject after he/she completes the study, or after all subjects have completed the study?

Of the thirteen persons who reported that subjects were debriefed, 9 reported that the debriefing occurred after the experiment was completed. Two reported that each subject was debriefed after their individual participation in the study. Two other researchers reported that debriefing occurred both after individual subjects completed the study or after the experiment was completed, depending on the experiment.

QUESTION 3: If yes to #1, how does your debriefing guard against contamination from subjects talking to other or future subjects?

Several respondents reported multiple answers to this question. The most frequent answer (11 respondents) was that the subjects were asked not to talk about the experiment. Three reported that the subjects they used either did not communicate or did not know each other. Other responses included: having subjects sign statements that they would not discuss the experiment, asking subjects if they had heard about the experiment from other subjects, and debriefing subjects in ways that were "not too revealing".

QUESTION 4: Do you debrief subjects who do not complete the study?

Seven persons reported that they did not debrief subjects who failed to participate, four of whom stated that this was because the subjects stopped coming to the laboratory. Three reported that they did debrief subjects failing to complete the study, and two said that they had not encountered this problem. Two others indicated that whether these subjects were debriefed varied, and one other reported that such subjects received a briefer version of the debriefing.

QUESTION 5: Do subjects who do not complete the study receive course credit or money earned?

Seven respondents said that subjects who did not complete the study received money and course credit, and three said that they did not. Six others reported paying the subjects money, but not awarding course credit unless the study was completed. One said that only course credit was awarded to subjects who failed to complete the experiment.

QUESTION 6: Are you using computers to run your human experiments?

Seventeen of twenty-one respondents reported that computers were used in their laboratories, and one other said they were about to begin computer use. Three responded that computers were not used.

QUESTION 7: If yes to #6, please describe your hardware system (e.g., brand of computer, memory size, number and type of disk drives, interface, etc.).

A wide range of computer hardware was reported. The most commonly used systems were IBM-PCs or compatibles. Nine laboratories reported using these systems, including: Steve Hayes (University of Nevada, Reno), Dudley Terrell (Anacapa Sciences,Inc.), Jim Johnston (Auburn University), A.W. Logue (SUNY, Stony Brook), T.A. Brigham (Washington State University), Dean Williams (Parsons Research Center), Sam Deitz (Georgia State University), and B. Guerin (James Cook University, Australia). The next most frequently named computers were Apple II Plus and Apple IIe with 5 reported. Apple users included: Cloyd Hyten (University of North Texas), Charlie Catania (University of Maryland, Baltimore County), Phil Chase (West Virginia University), and Jan LeFrancois (Coverse College). Two laboratories reported using Commodore 64 computers, Barry Lowenkron (California State University, Los Angeles) and Phil Chase (West Virginia University). Two more reported using Tandy TRS-80 equipment, both from Mike Perone's lab (West Virginia University) and two were using Digital computers. Murray Sidman reported using a DEC LSI-11/23 and Al Poling uses a PDP-8a. Finally, Dudley Terrell reported using a Pioneer Videodisk Player with his IBM compatible system.

QUESTION 8: If yes to #6, what type of software do you use (e.g., is it a brand name item, or self-programmed)?

The large majority of computerized laboratories used self-programmed software to run their experiments. Sixteen laboratories were using self made programs. The languages used in the development of these programs, when reported, were Basic (Steve Hayes, T.A. Brigham, Dean Williams, Phil Chase and Mike Perone), Pascal (Phil Chase, Cloyd Hyten, B. Guerin) and Forth (Charlie Catania). A.W. Logue reported using CONMAN, which was written by Gary Lucas from Bill Timberlake's lab. The other commercially available program reported was Supersked (Al Poling), and one lab said they used Wordstar in addition to Basic (T.A. Brigham).

QUESTION 9: If yes to #6, what are the special capabilities of the software that persuaded you to adopt them.

Responses to this question were based on the particular software or language that was reported in Question 8. Listed below are the languages or programs used, and the specific comments provided by each respondent:

Quick Basic: Easy to learn, structured, pretty fast.
Quick Basic: Fast, cheap, easy to program.
Pascal: Flexibility and power.
Pascal: Quick when compiled, has library of assembly routines to deal with timing.

Forth: Lots of accidents led us to it.
CONMAN: Specifically designed for operant conditioning procedures. Great flexibility, many programmed procedures can be called with simple commands. One IBM can operate 3 chambers.
Supersked: Flexibility.
Self Programmed: Convenience, several people use same system.
Self Programmed: Designed especially to do the study.
Self Programmed: Can present basic reinforcement schedules with a range of parameters.

QUESTION 10: Are verbal report data obtained from subjects in your experiments?

Seven persons responded that they obtained verbal reports from experimental subjects, and five others said they obtained verbal reports sometimes. One other person said they collected these data only incidentally. Six respondents said that verbal reports were not obtained. Two other laboratories reported that verbal reports were unsolicited, but subjects' statements during debriefings or following sessions were recorded informally.

QUESTION 11: If yes to #10, when are the reports obtained (e.g., at the end of the experiment, after each session, etc.)?

Verbal reports were obtained at the end of the experiment in five labs, and after each session in three labs. Four reported that they obtained verbal reports at varied times. Three labs reported collecting verbal reports from subjects during experimental sessions, such as after completing a particular reinforcement schedule.

QUESTION 12: If yes to #10, what kind of responses are they (e.g., written answers to questions)?

Many different types of verbal responses are being collected by the respondents. Those reporting written responses (7) described these responses as questionnaire responses, written answers to open-ended questions, and two persons reported obtaining verbal report data as computer input via the keyboard. Three labs reported getting both written and oral responses. Other variations included tape recorded sessions, the experimenter asking questions and recording the answers.

QUESTION 13: If yes to #10, are all subjects questioned?.

Ten laboratories reported that all subjects were questioned, although one of these indicated that whether or not subjects were questioned depended on the experiment. Two respondents said that if subjects were asked questions during sessions, they were not questioned after the experiment was completed. One other laboratory said that subjects were not questioned due to time constraints.

QUESTION 14: If yes to #10, how do you control for or evaluate the effect of asking for verbal reports?

Four reported that the effect of asking for verbal reports was controlled by waiting until the experiment was completed before requesting verbal responses. One lab controlled for these questions by using only open-ended questions that did not suggest possible answers. Other responses varied considerably; one researcher said that no control for asking questions was used. Another said they did not worry about effects of asking for verbal reports.

QUESTION 15: How are the verbal report data used (e.g., as anecdotal data, correlational data, experimental data)?

Most researchers (8) reported using the verbal reports as anecdotal data. Other responses varied considerably. One reported using these data to suggest future experiments. Another used verbal reports to guide the development of experimental procedures, and another used the data as manipulation checks. Three respondents reported using them as dependent variables, but in each case other dependent measures also were collected. Finally, two persons reported that the verbal reports obtained were rarely used. One reported that they were usually useless, and the other said they were only used if someone asked the experimenter what subjects said about the contingencies.

We hope you find the information from this and the previous survey useful. Many of these questions have been asked in our lab meetings when we have wondered how others are conducting their research. In fact our laboratory benefited from comparing the various contingency systems that were revealed in the last survey and we will probably make some changes in our debriefing procedures based on the results reported here. We also plan on contacting some of the respondents who are using computer systems similar to ours to see whether they are interested in sharing software.

PHIL'S FUN FACTS

Questions

1. Why would a knowledgeable behavior analyst start a new journal in 1988?

2. According to Wundt, the difference between human and other animal "intelligence" is the difference between _____ and _____.

3. Identify Skinner's primary sources for his analysis of verbal behavior.

Answers

(Read each answer from left to right.)

1. .8791 detrats tsylanA roivaheB ehT ;8691 detrats ABAJ ;8591 detrats BAEJ ;8391 dehsilbup smsinagrO fo roivaheB :edaced eht fo reay hthgie eht ni sgniht tnacifingis od ot dednet evah stsylana roivaheB

2. noitaicossa ,noitanigami

3. eibbeD dna eiluJ