Experimental Analysis of Psychoanalytic Character Types Through the Operant Conditioning of Verbal Responses.

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EXPERIMENTAL ANALYSIS OF PSYCHOANALYTIC CHARACTER TYPES
THROUGH THE OPERANT CONDITIONING OF VERBAL RESPONSES

A Dissertation

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by
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1. Operant Reinforcement Apparatus
2. The Differential Reinforcing Effects of Gumballs and of Pennies on Verbal Responses of Oral Character Types
3. The Differential Reinforcing Effects of Gumballs and of Pennies on Verbal Responses of Anal Character Types
4. The Competing Effects of Gumballs (Following a Correct Response) and Pennies (Following an Incorrect Response) on Verbal Responses of Oral Character Types
5. The Competing Effects of Pennies (Following a Correct Response) and Gumballs (Following an Incorrect Response) on Verbal Responses of Anal Character Types
The purpose of this study was to test the broad hypothesis that frequency of a selected response class in an operant conditioning paradigm may be significantly manipulated through the control of personality variables and the reinforcing stimuli. More specifically, it was predicted that oral character types respond more readily to oral reinforcing agents and that anal character types respond more readily to anal reinforcing agents.

Sixty hospitalized male psychiatric patients were employed as Ss for this experiment. Each S was identified as an oral or an anal character according to three criterion measures: Behavior, Test Responses, and Diagnosis. The behavioral criterion was based on statements from the psychoanalytic literature which attributed specific behaviors to oral and to anal character types. The test criterion was based on objective scores obtained from the Blacky Test, by which the Ss were characterized as predominately oral or anal. The diagnostic criterion was based on statements from the psychoanalytic literature to the effect that specific psychoses and neuroses are a function of psychosexual developmental levels, and are dominant points of fixation in oral and anal stages. The Ss were required to meet all three of these criteria before being classified as oral or
An operant conditioning apparatus was constructed which could dispense gumballs and pennies. The gumballs served as the oral reinforcers and the pennies served as the anal reinforcers. The decision to use pennies as anal reinforcers was based on the theoretical psychoanalytic assumption equating money and feces.

A 35 mm. slide projector was mounted inside the apparatus and was equipped with 160 stimulus slides. This stimulus material consisted of two classes of pronouns (first person and second or third person) printed at the top of each slide. Underneath the two pronouns was a group of words which, when used with either of the pronouns, made a complete sentence. Each stimulus slide could be projected on a view-screen mounted on the front of the apparatus.

Each S was assigned to one of six treatment conditions on the basis of his character type (oral or anal). A treatment condition was defined in terms of a combination of the reinforcement during the acquisition series and the character type of the S. Each S was seated before the apparatus and instructed to select one of the two pronouns on each slide to complete the sentence fragment underneath. The operant level was determined by the first 40 trials. The next 80 trials constituted the acquisition phase, during which the Ss were differentially reinforced according to character type. The final 40 trials served as the extinction series.
Results clearly supported the prediction that oral characters and anal characters respond differentially to oral and anal reinforcers in an operant conditioning paradigm.
INTRODUCTION

Two of the strongest, although quite diverse, influences on contemporary psychology are psychoanalytic theory and operant conditioning concepts. The former is chiefly concerned with motives, defenses, and personality structure, while the latter is concerned with overt, measurable behavior. A recent survey (Wurtz, 1961) places Freud (psychoanalytic) and Skinner (operant conditioning) as first and thirteenth respectively as outstanding contributors to psychological literature.

Sears (1944) has suggested that psychoanalytic theory, due to its subjective character, does not permit empirical verification of its hypotheses. This criticism has been levied by many psychologists and philosophers of science. On the other hand, many have indicated that the experimental analysis of behavior in the Skinnerian tradition is not subject to such a criticism.

Attempts have been made to examine psychoanalytic concepts, but in order to do this these concepts have often been translated into behavioral terms--into operationally defined observables. One of the most noteworthy attempts is that made by Dollard and Miller (1950). In the framework of their theory the psychoanalytic phenomenon of displacement, for example, is accounted for in terms of stimulus-response generalization, and has been tested with human subjects (Ss)
(Miller & Bugelski, 1948) as well as with rats (Miller, 1948; Murray & Berkun, 1955; Elder, Noblin, & Maher, 1961). The Dollard and Miller approach is characteristic of several such attempts in which some psychoanalytic defense mechanism is usually selected for investigation.

Other representative research which has been executed in attempts to examine Freudian hypotheses, or which has been subsequently related to psychoanalytic theory, includes work in repression (Diaz-Guerrero, 1952; Rollins, 1955; Zeller, 1950), projection (Frenkel-Brunswik, 1939; Sears, 1936), and regression (Barker, Dembo, & Lewin, 1937; Hamilton & Krechevsky, 1933; Lantz, 1945; Martin, 1937; Mowrer, 1940; True, 1949).

Sears (1944) has summarized many of the empirical findings relevant to psychoanalytic theory, but reports no evidence which directly bears on the psychoanalytic hypothesis of psychosexual developmental levels (oral, anal, and genital) or their related character types (oral character and anal character). A review of the literature reveals that when this aspect of psychoanalytic theory has been investigated it is usually a descriptive, correlation analysis. Sears (1944) has stated that one must conclude that experimental psychology has not yet made a major contribution to such problems and that, in spite of its estimable general method, its techniques are clumsy.

The present writer, however, believes that one important
technique for the investigation of psychoanalytic and other so-called dynamic concepts has been neglected—that of operant conditioning. Recent investigations (Adams, Butler, & Noblin, 1961; Adams, Noblin, Butler, & Timmons, 1961; Timmons, Noblin, Adams, & Butler, 1961) have shown the efficacy of such techniques in demonstrating the behavioral effects of the psychoanalytic interpretation. A rapprochement between concepts derived from dynamic theory and operant conditioning has been suggested by Brady and Lind (1961), and it is the purpose of the present study to effect such a rapprochement. More specifically, the psychoanalytic concept of character types (oral character and anal character) is operationally defined and subjected to test by operant conditioning techniques.

Skinner (1959) has stated that, using operant techniques, it is possible to complicate the task of the S without limit, and he believes that it is possible to construct interactions between systems of behavior as arc seen in Freudian dynamisms. He holds that the nature and function of verbal behavior take on promising aspects when reformulated within such a framework.

The present study is geared in the framework of the operant conditioning of verbal behavior, and is based largely on the nature of the reinforcer as described by Lindsley (1956, p. 30). He has stated, "Our way of measuring the 'meaning' or 'value' of the reinforcer to the patient is to
measure the frequency of the behavior he will emit in order to get the reinforcing agent."

The general hypothesis for the present study is that "oral characters" respond more readily to "oral reinforcing agents" and "anal characters" respond more readily to "anal reinforcing agents." The basis for this prediction may be better understood after a consideration of the psychoanalytic literature pertaining to oral and anal character types.

Freud's contributions to characterology are regarded by many to be among his most lasting and valuable achievements (Mullahy, 1955). In discussing the significance of oral stimuli on behavior, Fenichel (1945, p. 63) states, "Animal crackers, loved by children, are significant remnants of early cannibalistic fantasies." In discussing the aim of oral eroticism as the eventual incorporation of objects, he states that phenomena in which oral eroticism is related in adults to early oral influences are kissing, drinking, smoking, and many eating habits. Monroe (1955, p. 189) states, "The very general habits of smoking, chewing, nibbling candy or nuts, and the like testify to the continuation of direct oral pleasure beyond infancy."

Dollard and Miller (1950) have recognized the importance of oral stimuli on behavior, and suggest that oral drives are learned. That psychosexual developmental levels may be couched in terms of the learning process has been suggested by Sutherland (1951), who relates the classical
stages of psychosexual development to steps a person takes in the learning and mastery of a new situation.

Although many psychoanalysts in addition to Freud contributed to the original formulation of character types, Hilgard (1952) has pointed out that the classical formulation of the stages of psychosexual development is that of Abraham (1927). Abraham held that when the personality became fixated primarily at one stage of psychosexual development, it could be described in terms of the strivings and attitudes for this stage. This differentiation has made considerable impact on later psychoanalytic thinking. Mullahy (1955, p. 59) states, for example, "In some cases the person's entire character is under 'oral influence.'"

Other psychoanalytic writings also describe the "anal" influence relevant to the so-called "anal character." Alexander (1948) has characterized the anal character as stubborn, independent, and possessive, and speaks of an intimate unconscious link between money and faces. Fenichel (1945, p. 281) points out, "the child learns that 'money' exists" and, "What money and feces have in common is the fact that they are deindividualized possessions . . . Anal-erotic persons who love money . . . love gold and shining coins." He points out that, for some individuals, money becomes an object for pleasure (or for punishment)--a substitute for feces. Ferenczi (1950) goes so far as to speak of Freud's "discovery" of the symbolic meaning of money.
Thompson (1950) states that these individuals have a strong fixation on anal interests, and that pleasure in feces becomes sublimated in pleasure toward money. She states, "The child's feeling of power in controlling his feces becomes the feeling of power in the manipulation of money. The extreme character development here would be the miser." Paradoxically enough, Lindsley (1956), in one study which employed an oral reinforcer (candy), found one patient throwing the candy down the toilet. He relates this to the "value" or "meaning" of the reinforcer to the S but does not deal specifically with oral and anal character types in his experimental paradigm.

As previously mentioned, most of the research literature dealing with orality or anality is of the descriptive type, with virtually no attempts to manipulate significant variables. Those studies which have been reported, however, do have implications for the present investigation. Much of the descriptive and experimental evidence bearing on such issues as breast versus bottle feeding, length of breast feeding, self-demand versus scheduled feeding, form and age of weaning, etc., lacks definitive stature, as Orlansky (1949) has emphasized in his review of the literature on infant care and personality—and is not included in the present summary of oral character research.

One test of the oral character has been made by Goldman (1948). She selected twenty extreme cases representing the
orally satisfied and the orally unsatisfied. The trait clusters which emerged from a factor analysis corresponded roughly to the theoretical expectations from the theory of oral character formation.

Operationally defining orality as nonpurposive mouth movements, Blum and Miller (1951) attempted to test hypotheses deduced from statements in the psychoanalytic literature. Employing a variety of conventional psychological methods (teacher ratings, time sampling, sociometrics, and experimental situations), they computed correlations between ranks on their criterion measure of orality and ranks on the series of hypothetical variables. Hypotheses dealing with extreme interest in food, social isolation, and need for approval were supported.

Evidence which relates anality to behavior comes from several sources. Miller and Hutt (1949) have emphasized the tentative conclusions which can be drawn from much of the data bearing on this topic. Blum (1953) has suggested that evidence from clinical sources, while not to be ignored, does not provide us with anything more than statements to be accepted on faith. Accordingly, only the experimental evidence is considered in this review.

Through a factor analysis on 59 variables on various scales of the Minnesota Multiphasic Personality Inventory, Finney (1961) identified an anal character factor, and suggests that substantial loadings on three experimental scales
for orderliness, stinginess, and stubborness confirm Freud's concept. Furthermore, he points out the fact that experimental evidence to support the concept of the anal character has been minimal.

Hilgard (1952) has suggested that a remote, but legitimate, test of Freud's anal triad of stinginess, obstinacy, and orderliness may be provided by a determination of whether or not these three traits go together in a cluster. Sears (1942), employing college fraternity brothers as Ss, found positive correlations of .36 to .39 among ratings of these characteristics. Hamilton (1929) found a higher incidence of stinginess or extravagance in Ss who recalled some form of anal eroticism in childhood than in those Ss with no such recollections. Sears (1943), however, holds that the dubious validity of the recall task, combined with the inadequacy of the ratings, minimizes the significance of the results.

Another correlational type of study has been furnished by Farber (1955). After providing evidence from psychoanalytic literature that there should be a positive relationship between the anal character and political aggression, he utilized objective test scores as the criterion measure and confirmed this hypothesis. In an investigation of the theoretical prediction that handwriting—as a medium of anal expression—should show deviations, McNeil and Blum (1952) found a series of relationships between Blacky Test anal
retensive scores and handwriting deviations.

Blum (1949) has pointed out the fact that academic psychologists have long been concerned with the issues raised by psychoanalytic theory. While recognizing that investigations into such phenomenon have run the gamut from laboratory exploitations of small animals to introspective experiences of being psychoanalyzed, he has couched his investigations in the framework of his own instrument—the Blacky Test. Providing evidence from Fenichel (1945) which bears upon the theory of psychosexual development, he has confirmed several predictions regarding sex differences and syntactical relationships between various test dimensions. A review of the research in the area of psychosexual developmental levels would be incomplete without his findings, summarized below, on the oral and anal dimensions.

The prediction from psychoanalytic theory that oral sadism, which is held to be an expression of pre-oedipal hostility toward the mother, is more prevalent in females than in males was confirmed in that significantly more females than males chose the oral-sadistic alternative in answer to a related question on Cartoon II of the Blacky Test. Although finding no evidence from the psychoanalytic literature concerning a possible sex difference in greediness, Blum found that significantly more males than females selected the voracious alternative in response to a related question to Blacky Test Cartoon I. Citing evidence from
psychoanalytic theory that more females than males might be expected to repress anal-sadistic tendencies, he found that significantly more males than females did in fact select the anal-sadistic alternative to a related question on Cartoon III. He interpreted this as evidence for more extensive repression among females. Finally, intercorrelations between Blacky Test dimensions for which there is direct or indirect theoretical evidence from a psychoanalytic viewpoint were in agreement with the predictions.

These considerations of psychoanalytic character types, along with the methodological techniques of operant conditioning, provided the rationale for the present study. Accordingly, an operant conditioning paradigm was implemented which utilized pennies and gumballs as anal and oral reinforcers respectively in an attempt to effect a rapprochement between psychoanalytic theory and the experimental analysis of behavior.

The following six hypotheses were formulated to test the overall prediction that frequency of correct responses in an operant conditioning paradigm may be significantly manipulated through the control of personality variables and the reinforcing stimuli.

1. When the verbal responses of oral characters are followed by oral stimuli, the frequency of that selected response class will be significantly greater than responses of oral characters reinforced by anal stimuli. This is to
say that, for oral character types, gumballs serve as a more effective reinforcer than do pennies in raising and maintaining the frequency of a selected response class.

2. When the verbal responses of anal characters are followed by anal stimuli, the frequency of that selected response class will be significantly greater than responses of anal characters reinforced by oral stimuli. This is to say that, for anal characters types, pennies serve as a more effective reinforcer than do gumballs in raising and maintaining the frequency of a selected response class.

3. When oral stimuli follow responses belonging to one of two response classes and anal stimuli follow responses belonging to the other response class, oral characters will give a significantly greater frequency of responses to that response class preceding the oral stimuli. This is to say that, for oral characters, gumballs serve as a more effective reinforcer than do pennies in raising and maintaining the frequency of a selected response class.

4. When oral stimuli follow responses belonging to one of two response classes and anal stimuli follow responses belonging to the other response class, anal characters will give a significantly greater frequency of responses to that response class preceding the anal stimuli. This is to say that, for anal characters, pennies serve as a more effective reinforcer than do gumballs in raising and maintaining the frequency of a selected response class.
5. When oral characters are reinforced with gumballs and anal characters are reinforced with pennies, the frequencies obtained from the two sets of conditioning data will not be significantly different. This is to say that gumballs are as reinforcing for oral characters as pennies are for anal characters.

6. When Ss are given the opportunity to select oral or anal stimuli, following a learning situation, oral characters will select oral stimuli and anal characters will select anal stimuli. This is to say that oral characters will, if given the opportunity, exchange pennies for gumballs which were earned during a conditioning sequence, and anal characters will exchange gumballs for pennies.
METHOD

Apparatus

An artist's sketch of the operant conditioning apparatus which was employed in this study is pictured in Figure 1. It consisted of three basic components mounted inside a console television cabinet. The cabinet itself was 24-1/2 in. wide, 33 in. high, and 20-1/2 in. deep. A high-speed coin dispenser was mounted to the rear of the left wall of the cabinet, and could be activated electrically by a 12 volt D.C. solenoid mounted directly under the changer. A gumball dispenser was mounted at the right rear of the cabinet, and could be activated electrically by another solenoid attached to the dispenser by a spring-lever system. When the appropriate solenoid was activated, the respective reinforcer (gumball or penny) dropped immediately into an aluminum U-channel 1-1/2 in. wide and 1 in. deep leading to a metal reward cup (3-1/2 in. wide) which projected 2 in. from the lower center of the cabinet. The gumballs were approximately the same diameter as pennies.

A 35 mm. slide projector was mounted at the upper center of the cabinet so that only the frosted glass view-screen and the reward cup could be seen from outside the cabinet. The apparatus was wired so that when one reinforcer was dispensed, the magazine of the slide projector could be activated
FIG. I. OPERANT REINFORCEMENT APPARATUS
by a third solenoid to project the next 35 mm. slide on the screen. Each of the three solenoids could be activated by one of a series of buttons leading from the machine.

Stimulus material consisted of two pronouns printed at the top of each slide. Underneath each of the two pronouns was a group of words which, when used with either of the pronouns, made a complete sentence. This is a variation of the Taffel Technique (Taffel, 1955) and has been used with both psychotic (Adams, Noblin, Butler, & Timmons, 1961; Timmons, Noblin, Adams, & Butler, 1961) and normal (Adams, Noblin, & Butler, 1961) populations. One pronoun on each slide was a first person pronoun (I or we) and the other was a second or third person pronoun (he, she, you, or they). Half of the first person pronouns were on the left side of the slide and half on the right to counteract position preference. Randomization was accomplished within blocks of 10 slides. These stimulus materials were presented in the same order to all Ss, and may be seen in Appendix A.

Subjects

Sixty hospitalized male psychiatric patients at the Gulfport Veterans Administration Hospital were used as Ss for this experiment. They were between the ages of 20 and 55 inclusive, with a mean age of 39.7 and a standard deviation of 8.4 years. The mean educational level attained for
all Ss was 10.2 years, with a standing deviation of 2.2 years. Patients obtaining a verbal I.Q. of less than 85 on the Shipley-Hartford Scale were eliminated from further consideration. Treatment groups did not differ significantly with respect to age, education, and I.Q.

Each S was identified as oral or anal according to three criterion measures. These criterion measures were (1) Behavior, (2) Test Responses, and (3) Diagnosis. Only those Ss meeting all three criteria were utilized in the study. Thirty oral character types and thirty anal character types were identified in this manner.

Behavior was assessed from observations on the ward by nursing assistants by means of a behavioral check list (see Appendix B). Freud's cardinal triad of anal characteristics comprises orderliness (bodily cleanliness, reliability, conscientiousness in performing petty duties), parsimony (which often includes the "hoarding" of objects such as strings and other small items), and obstinacy. Jastrow (1948) has pointed out that these behaviors are often found together. A fourth behavioral component, reported in many psychoanalytic writings and included in the scale used for this study, is that of constipation (regular requests for laxatives for the relief of constipation or complaints about constipation).

Blum and Miller (1951) have isolated several behaviors related to the oral character, and report extreme interest
in food (Ss most impatient to eat at lunch time) and social isolation (rejection by peers) as strongly related to the oral character type. Two other behavioral measures, reported in the psychoanalytic literature and included as part of the behavioral scale for this study, are the sucking or chewing of small objects (such as thumbsucking or chain smoking), and excessive or incessant talking.

A psychiatric nursing assistant, familiar with the behavior of the patients on the ward, gave each S a two-choice (frequent-infrequent) rating on each of these eight behaviors. As a check on rater reliability, a second nursing assistant was asked to assess independently the behavior of these same Ss using the same criterion. Agreement was found on 87% of the items. Accordingly, the behavioral assessments of the initial rater were used in dichotomizing the Ss on the oral-anal dimension. To meet the orality or anality criterion for this measure the S was required to attain a rating of at least 6 out of 8 characteristics in the appropriate direction.

Objective scores of orality and anality were obtained from the Blacky Test (Blum, 1949; 1950). This test consists of a series of eleven cartoons depicting 13 stages of psychosexual development. The main figure, Blacky, is presented as a male offspring to male Ss. After the presentation of each cartoon the S is presented a set of multiple-choice and short-answer questions relevant to the
psychoanalytic dimension under consideration. The S is then asked to give his preference for the various cartoons. Scores from the spontaneous story, inquiry, cartoon preference, and related comments on other cartoons are combined into the final dimensional score. Each S is categorized as "Very Strong," "Fairly Strong," or "Weak or Absent" on each dimension.

The Blacky Test was individually administered according to the instructions given in the manual (Blum, 1950). A tape recorder facilitated the recording of the spontaneous story. Each protocol was scored along the Oral Eroticism, Oral Sadism, Anal Expulsive, and Anal Retentive dimensions. Subjects who scored "Weak or Absent" on both oral dimensions, and "Very Strong" or "Strong" on either or both anal dimensions met the criterion for anality. If a S scored "Strong" on either oral dimension it was necessary that he score "Very Strong" on both anal dimensions in order to meet the anality criterion. A "Very Strong" rating on either oral dimension eliminated the S from consideration in meeting the requirements for anality. Oral character types were selected in a similar manner, with these scores going in the direction appropriate for orality.

Psychoanalytic theory holds that certain neuroses and psychoses are a function of psychosexual developmental levels. For example, catatonic and manic-depressive disorders are held to be the dominant points of fixation in
oral stages. Paranoid and obsessive-compulsive disorders are the corresponding points of fixation of the anal stages. Accordingly, diagnosis served as the third criterion measure, and Ss were designated as oral or anal according to their hospital staff diagnosis. Fenichel (1945, p. 101) has presented a diagrammatic table relating dominant points of fixation to stages of psychosexual development, and this was the guide for the assignment of Ss to treatment conditions on the basis of the diagnostic criterion.

Patients who did not meet all of the three criteria described above (Behavior, Test Responses, and Diagnosis) were not used in the study. One S who did meet the criteria was eliminated as he was diabetic and his ward physician did not want him to participate in an experiment which permitted him to win items containing sugar such as candy-coated gum-balls. It is felt that this selection procedure was rigorous enough to assure that Ss were assigned to the correct treatment condition.

Procedure

Subjects were equally assigned to one of six treatment conditions. A treatment condition was defined in terms of a combination of the reinforcement during the acquisition (treatment) series and the character type of the S. These treatment combinations may be seen in Appendix C.

Each S was seated before the operant conditioning apparatus and instructed to select one of the two pronouns at
the top of the stimulus screen to complete the sentence fragment underneath. Following each response the S received the reinforcement appropriate for his treatment condition. The correct response was defined as the first person response class for half the Ss within each treatment condition; and the second or third person response class was the correct response for the remaining Ss. The reinforcer dispensers were electrically activated by the examiner who was seated so that the S could not see him.

Each S was given the following instructions: "I am going to show you some slides one at a time. For each slide I want you to select one of the two pronouns at the top to make a sentence with the words at the bottom. You may choose either one of the pronouns." The S then received one warm-up trial and was told that he could keep 10% of his winnings (anything that comes from the reward cup).

The operant level was determined by the first 40 trials. No reinforcer was given following these responses. The next 80 trials constituted the acquisition (treatment) series and the final 40 trials the extinction series. Operant and extinction trials were identical for all Ss. A reinforcement schedule of 100% was used throughout the experiment. Correct responses were recorded in blocks of 10 trials.

At the end of the extinction phase each S was given the opportunity to exchange any of the reinforcers which he had received during the conditioning trials. Gumballs could be
exchanged for pennies and pennies could be exchanged for gum-balls.

Each S was then asked the following questions to ascertain whether he could verbalize the contingencies of the reinforcement:

1. Now, what do you think this experiment was all about?; What was the general idea? (DK) Take a guess.

2. Did you notice my doing anything in particular? (ans) Why was I doing that?

3. Did you notice any change in what you were saying from the first of the session to the last? (ans.) How did you change? (ans.) Why did you change?
RESULTS

The mean frequency of correct responses for the 10 oral Ss reinforced by gumballs and the 10 oral Ss reinforced by pennies is represented by Figure 2. That both groups displayed the typical increase in frequency of the dependent variable from operant level to treatment and the expected regular decline during extinction is indicated by visual inspection of the graphs as well as by statistical analysis.

A Friedman two-way analysis of variance by ranks (Siegel, 1956) showed that the overall effect of treatment on the oral Ss reinforced by gumballs was significant beyond the .01 level, yielding a $X^2$ of 10.50. The greatest number of correct responses was emitted during treatment (sum of ranks = 27), the next greatest during extinction (sum of ranks = 20.5), and the least during the operant period (sum of ranks = 12.5). A series of Wilcoxon matched-pairs signed-ranks tests was employed in analyzing the origin of the effect. The frequency of correct responses selected during treatment was significantly greater than during the operant period, with a corresponding probability beyond the .01 level. Extinction responses were less than treatment responses at a probability level beyond .05. No significant difference was found between operant level and extinction. This
FIG. 2. THE DIFFERENTIAL REINFORCING EFFECTS OF GUMBALLS AND OF PENNIES ON VERBAL RESPONSES OF ORAL CHARACTER TYPES
is to say that these oral character types conditioned when gumballs were used as reinforcers.

A Friedman analysis of the data obtained from the oral Ss reinforced by pennies yielded a $X^2_r$ identical to that obtained from the oral Ss reinforced by gumballs—10.50. Here again, the greatest number of correct responses was emitted during treatment (sum of ranks = 27.5), the next greatest during extinction (sum of ranks = 19.5), and the least during the operant period (sum of ranks = 12.5). Wilcoxon analyses indicated that correct response frequency during treatment was significantly greater than during the operant period, and that frequency of correct responses during treatment was significantly greater than during extinction—with probabilities of .05 and .01 respectively. No significant difference was found between operant level and extinction. This is to say that these oral character types conditioned when pennies were used as reinforcers.

In order to determine whether these groups differed from each other in the number of correct responses emitted during the operant, treatment, or extinction phases, Mann-Whitney U tests (Siegel, 1956) were employed. No significant difference was found between these groups for operant or extinction phases, but an expected significant difference beyond the .05 level was found for the treatment period. This is to say that these oral character types conditioned more effectively with gumball reinforcers as compared to
penny reinforcers.

The mean frequency of correct responses for the 10 anal Ss reinforced by pennies and the 10 anal Ss reinforced by gumballs is represented by Figure 3. Here again, both groups displayed the typical increase in frequency of the dependent variable during treatment and the expected regular decline during extinction.

A Friedman analysis of variance of the data obtained from the anal Ss reinforced by pennies yielded a $X^2_F$ of 11.4, with a corresponding probability of .01. The greatest number of correct responses was emitted during treatment (sum of ranks = 27), the next greatest during extinction (sum of ranks = 21), and the least during the operant period (sum of ranks = 12). Wilcoxon matched-pairs signed-ranks tests were again employed in analyzing the origin of the effect. A significant difference beyond the .01 level was obtained between operant level and treatment, and a difference beyond the .05 level was found between treatment and extinction. The extinction period did not differ significantly from the operant period. This is to say that these anal character types conditioned when pennies were used as reinforcers.

The overall effect of treatment for the anal Ss reinforced by gumballs was significant beyond the .01 level, as indicated by a Friedman analysis of variance ($X^2_F = 11.4$). The greatest number of correct responses was emitted during treatment (sum of ranks = 27), the next greatest during
FIG. 3. THE DIFFERENTIAL REINFORCING EFFECTS OF GUMBALLS AND OF PENNIES ON VERBAL RESPONSES OF ANAL CHARACTER TYPES
extinction (sum of ranks = 21), and the least during the operant period (sum of ranks = 12). Although a Wilcoxon analysis indicated that the frequency of correct responses during treatment was greater than during the operant period at a probability level beyond .01, no significant difference was found between treatment and extinction trials. Frequency of extinction responses was greater than that of operant level responses at a probability level beyond .05. This is to say that these anal character types conditioned when gumballs were used as reinforcers. The expected decline during extinction, however, did not even approach operant level until the last block of trials.

Mann-Whitney U tests indicated that these two groups did not differ significantly in the number of correct responses emitted during the operant period; nor did they differ significantly during the extinction phase. An expected difference beyond the .05 level was found, however, between the treatment periods of these two groups of Ss. This is to say that these anal character types conditioned more effectively with penny reinforcers as compared to gumball reinforcers.

The mean frequency of responses preceding gumballs (correct responses) for the 10 oral Ss receiving gumballs following correct responses and pennies following incorrect responses may be seen in Figure 4. The increase in frequency of the dependent variable was less pronounced than
FIG. 4. THE COMPETING EFFECTS OF GUMBALLS (FOLLOWING A CORRECT RESPONSE) AND PENNIES (FOLLOWING AN INCORRECT RESPONSE) ON VERBAL RESPONSES OF ORAL CHARACTER TYPES
with the previous conditioning paradigms, but visual inspection as well as statistical analysis does show the predicted increase during the treatment phase and the regular decline during the extinction phase.

That the overall effect was significant beyond the .05 level is indicated by a $X^2$ of 7.27 which was obtained from a Friedman analysis of variance. These data were consistent with the previous analyses in that the greatest number of correct responses was emitted during treatment (sum of ranks = 24.5), the next greatest during extinction (sum of ranks = 21.5), and the least during the operant period (sum of ranks = 14.5). Wilcoxon analyses indicated an increase in correct response frequency from operant to treatment phases and a decrease from treatment to extinction phases—both beyond the .05 level. No significant difference was obtained between operant period and extinction. This is to say that these oral character types conditioned to gumballs when gumballs were pitted against pennies in the attempt to raise and maintain the frequency of a selected response class.

The mean frequency of responses preceding pennies (correct responses) for the 10 anal Ss receiving pennies following correct responses and gumballs following incorrect responses may be seen in Figure 5. Rapid acquisition of the correct response is suggested by the graph, although the data were less regular than those obtained from the previous conditioning paradigms.
FIG. 5. THE COMPETING EFFECTS OF PENNIES (FOLLOWING A CORRECT RESPONSE) AND GUM­BALLS (FOLLOWING AN INCORRECT RESPONSE) ON VERBAL RESPONSES OF ANAL CHARACTER TYPES
A Friedman analysis of variance was employed in testing the overall effect across the three periods. A resulting $X_r^2$ of 6.20 was significant at a probability level beyond .05.

The greatest number of correct responses was emitted during treatment (sum of ranks = 25), the next greatest during extinction (sum of ranks = 21), and the least during the operant period (sum of ranks = 14). Wilcoxon matched-pairs signed-ranks tests were again employed in analyzing the origin of the overall effect. This analysis revealed a significant difference between the operant phase and treatment—beyond the .01 level. There was no significant difference, however, between treatment and extinction. That the frequency of correct responses emitted during extinction failed to reach the level emitted during the operant phase is indicated by the Wilcoxon probability beyond the .05 level for these two periods. This is to say that these anal character types conditioned to pennies when pennies were pitted against gumballs in the attempt to raise and maintain the frequency of a selected response class.

The data used in plotting the graphs for Figures 2 and 3 were subjected to analysis by Mann-Whitney U tests. The correct response frequency for the 10 oral Ss reinforced by gumballs was compared with the correct responses emitted by the anal Ss reinforced with pennies. No significant differences were found for operant, treatment, or extinction phases. A similar analysis of the data obtained from the
anal Ss reinforced by gumballs and the oral Ss reinforced by pennies failed to indicate significant differences between these two groups for operant, treatment, or extinction phases. This is to say that the gumballs were as reinforcing for the oral Ss as the pennies were for the anal Ss; and that the pennies were as reinforcing for the oral Ss as the gumballs were for the anal Ss.

When the Ss were given the opportunity to exchange the reinforcers that they had received during the conditioning trials, all Ss—orals and anals—exchanged gumballs for pennies. The non-overlapping nature of this distribution made statistical analysis unnecessary.

Several Ss verbalized the contingencies of reinforcement and were eliminated from the experiment. The data presented here are from 60 Ss who did not verbalize the experimental concept. Most of the Ss reported that they saw the experiment as a measure of personality or as an intelligence test. Some thought it assessed knowledge of grammar.
DISCUSSION

Results of the present study clearly support the general hypothesis that frequency of a selected response class in an operant conditioning paradigm may be significantly manipulated through the control of personality variables and the reinforcing stimuli. More specifically, the prediction that oral and anal character types respond differentially to oral and anal reinforcing agents is strongly suggested by visual inspection of the data as well as by statistical analysis.

Hypothesis 1, that gumballs serve as more effective reinforcers for oral character types than do pennies in raising and maintaining the frequency of a selected response class, is supported from two statistical sources. Not only was the frequency of correct responses during the treatment phase significantly greater for the oral Ss conditioned with gumballs than for the oral Ss conditioned with pennies, but the difference from operant level to treatment was accepted as significant at a higher level of confidence for the orals reinforced with gumballs than for the orals reinforced with pennies. Greater resistance to extinction for the orals reinforced with gumballs than for the orals reinforced with pennies is suggested in that the difference from treatment to extinction was accepted as significant at a higher level of confidence for those Ss reinforced with pennies.
That pennies serve as a more effective reinforcer for anal characters than do gumballs in raising the frequency of a selected response class is supported by the statistical analysis of the data used in constructing Figure 3. Here again, the frequency of correct responses for the Ss (in this case, anals) conditioned with their corresponding reinforcer (pennies) was greater than the frequency emitted by anals conditioned by gumballs. The greater resistance to extinction exhibited by the anals reinforced with gumballs as compared to those reinforced with pennies is difficult to explain, however. This differential effect in extinction makes the significant difference between operant level and extinction less surprising, however. Nevertheless, these data do support Hypothesis 2.

Hypothesis 3, that when oral stimuli follow responses belonging to one of two response classes and anal stimuli follow responses belonging to the other response class, oral characters will give a significantly greater frequency of responses to that response class preceding the oral stimuli, was probably one of the most outstanding confirmations of the study. The reinforcing effect of gumballs appears to have masked, to a large extent, the reinforcing effect of pennies on oral Ss (see Figure 4). The consistency of this phenomenon is seen in the test of Hypothesis 4, represented by Figure 5. In this case, employing Ss who met the criterion for anality, the reinforcing effect of gumballs
appears to a large extent to be masked by the reinforcing effect of pennies.

On the basis of the comparisons of operant, treatment, and extinction periods between oral and anal groups, the hypothesis that gumballs are as reinforcing for oral characters as pennies are for anal characters was accepted. This gives further support to the overall hypothesis that personality variables may be important in human operant conditioning experiments, as well as confirming Hypothesis 5 of the present study.

It is surprising that, when given the opportunity following the learning situation, all Ss exchanged gumballs for pennies—regardless of the character type of the S. Accordingly, Hypothesis 6 was rejected. This behavior certainly has face validity, in view of the portability and monetary value of pennies as compared with gumballs, but was not expected in light of the very pronounced differential effects obtained during the conditioning sequence of the experiment. The fact that the data used in the analysis of these results was obtained from 60 Ss who did not verbalize the contingencies of the reinforcement perhaps gives added weight to this finding. In many verbal conditioning efforts to determine whether or not the Ss could verbalize the contingencies of the reinforcement is called "testing for awareness." According to the definition of this concept, the Ss in the present study were not "aware" of what
determined their verbal behavior; whereas the same Ss in the exchange situation were "aware" of the behavior necessary for them to emit in order to receive one reinforcer or the other. The examiner had, in fact, told them that it was only necessary for them to request an exchange of one reinforcer for another. It is possible that this difference paves the way for subsequent operational considerations of what has been termed "unconscious" motivation. If "testing for awareness" in traditional verbal conditioning paradigms should prove to be a consistent and valid technique, it is possible that "unconscious" motivation may be reducible to simple frequency of response—at least insofar as research is concerned. Such a notion might prove to be a useful research tool in future investigations of so-called "dynamic" processes.

The present study also has psychodiagnostic implications. In many respects these diagnostic considerations may be viewed as an extension of the work by Lindsley (1956), who reports distributions of rates of response by chronic psychotic patients for female nude pictures and male nude pictures. His conclusion, that the interest of chronic psychotics for homosexual pictures is as strong as their motivation for heterosexual pictures, is related to his statement that the "value" or "meaning" of the reinforcer to the patient may be measured by the frequency of the behavior he will emit in order to get the reinforcing agent. In the
present study, oral character types emitted a higher frequen-
cy of selected classes of verbal behavior and consequently
received oral reinforcers (gumballs); anal character types
emitted a higher frequency of selected classes of verbal be-
havior and consequently received anal reinforcers (pennies).
It is possible that frequency of response measures might
also be applicable to other concepts which would otherwise
be unobservable and hence unmeasurable. It is not incon-
ceivable that systems of psychodiagnosis could be formulated
using these principles.

Another promising area for research, relating the
findings of the present study, is that of response set.
Couch and Keniston (1960) have suggested hypotheses con-
cerning the personality differences between individuals who
tend to agree (yeasayers) and those who tend to disagree
(naysayers). Data from their study suggest that the con-
trasting personality patterns of yeasayers and naysayers
have their developmental origins in differential responses
to anal problems. More specifically, they hold that yea-
sayers show manifestations of the anal expulsive type and
that naysayers show manifestations of the anal retentive
type.

A recent factor analysis of the MMPI (Finney, 1961) re-
vealed substantial loadings on three experimental subscales
designed to measure Freud's anal triad of orderliness,
stinginess, and stubborness, and an even higher loading on
a scale designed to measure anal character. Finally, he suggested that rigidity is the most central characteristic of the anal factor.

Working within the framework of the Deviation Hypothesis (Berg, 1961), Adams (1960) has defined statistical rigidity as the decreased variance of responses in stimulus situations for which no particular response or responses are required of the individual. It follows, therefore, that "yeasayers" and "naysayers" would be statistically rigid, when test variance is measured by how much the S varies from item to item in choosing various options. Results of the present study suggest that operant conditioning techniques may be a useful vehicle for relating phenomenon as consistence as those reported here on response set. One such working hypothesis, amenable to test within this framework, is that response sets are learned.

One scale that has stimulated considerable research with regard to response set is the F or fascism scale (Adorno, et al., 1950). There is considerable evidence, however, that this scale measures acquiescence rather than fascistic tendencies (Bass, 1955; Cohn, 1952; Chapman & Campbell, 1957; Jackson, Messick, & Solley, 1957). It is interesting to note that Finney (1961) found that the F scale has positive loadings on the "anal character" factor. This type of predictable relationship suggests that one area of fruitful research may be that relating the areas of
response set, learning, and personality. Significant personality factors, hitherto unobservable and unmeasurable, might lend themselves for investigation within this framework.

One final research proposal is in order as a direct followup to the present study. Psychoanalytic theory holds that objects of sexual attraction are related to psychosexual developmental levels. Hence, one sometimes hears a cliche' such as "he's a leg man," "he's a breast man," or "he's a fanny man." Attraction to the female breast is, according to psychoanalytic theory, related to oral factors; and attraction to the female buttocks is related to anal factors. Accordingly, it is proposed that visual reinforcers be employed in the same paradigm which was utilized in the present study. It is predicted that the frequency of a selected response class could be significantly manipulated using a visual oral reinforcer (such as breast profiles) with oral character types, and that a corresponding increase could be effected using a visual anal reinforcer (such as buttock profiles) with anal character types. If appropriate criterion measures could be obtained for the genital character, it is predicted that leg pictures would serve as an effective visual reinforcer for those Ss.
SUMMARY AND CONCLUSIONS

The purpose of this study was to test the broad hypothesis that frequency of a selected response class in an operant conditioning paradigm may be significantly manipulated through the control of personality variables and the reinforcing stimuli. More specifically, it was predicted that oral character types respond more readily to oral reinforcing agents and that anal character types respond more readily to anal reinforcing agents.

Sixty hospitalized male psychiatric patients served as Ss for this experiment. Each S was identified as an oral or anal character according to three criterion measures: Behavior, Test Responses, and Diagnosis. The behavioral criterion was based on statements from the psychoanalytic literature which attributed specific behaviors to oral and to anal characters. The test criterion was based on objective scores obtained from the Blacky Test, by which Ss were characterized as predominately oral or anal. The diagnostic criterion was based on statements from the psychoanalytic literature to the effect that specific psychoses and neuroses are a function of psychosexual developmental levels, and are dominant points of fixation in oral and anal stages. The Ss were required to meet all three of these criteria before being classified as oral or anal.
An operant conditioning apparatus was constructed which could dispense gumballs or pennies. The gumballs served as the oral reinforcers and the pennies served as the anal reinforcers. The decision to use pennies as anal reinforcers was based on the theoretical psychoanalytic assumption equating money and feces.

A 35 mm. slide projector was mounted inside the apparatus and was equipped with 160 stimulus slides. This stimulus material consisted of two classes of pronouns (first person and second or third person) printed at the top of each slide. Underneath the two pronouns was a group of words which, when used with either of the pronouns, made a complete sentence.

Each S was assigned to one of six treatment conditions on the basis of his character type (oral or anal). A treatment condition was defined in terms of a combination of the reinforcement during the acquisition series and the character type of the S. Each S was seated before the apparatus and instructed to select one of the pronouns on each slide to complete the sentence fragment underneath. The operant level was determined by the first 40 trials. The next 80 trials constituted the acquisition phase, during which the Ss were differentially reinforced according to character type. The final 40 trials served as the extinction series.

Results clearly supported the prediction that oral characters and anal characters respond differentially to oral and anal reinforcers in an operant conditioning paradigm.
REFERENCES


Jackson, D. N., Messick, S. J., & Solley, C. M. How rigid is the "authoritarian"? J. abnorm. soc. Psychol., 1957, 54, 137-140.


APPENDICES
APPENDIX A

PERSONAL PRONOUNS AND SENTENCE FRAGMENTS SERVING AS STIMULUS MATERIAL

(She - I)
Was late for work yesterday morning.
(I - You)
Ordered the cake from the bakery.
(We - They)
Went for a short drive in the country.
(I - He)
Tried to stop them before it was too late.
(She - I)
Went to the zoo and saw the animals.
(She - We)
Did not want to come.
(We - They)
Put out the fire.
(She - I)
Emptied the trash into the ditch.
(You - I)
Hung the coat up in the closet.
(She - We)
Stopped the milk delivery.
(I - You)
Typed the letter and mailed it.
(We - They)
Placed the pen on the desk.
(I - You)
Watched the football game on television.
(I - He)
Forgot the appointment.
(You - We)
Borrowed the automobile from the man.
(You - I)
Turned off the light and went to sleep.
(We - You)
Tried to stop them before it was too late.
(I - You)
Offered to lend him the book.
(Sh e - We)
Bought a newspaper but did not have time to read it.
(They - We)
Ate doughnuts and coffee for breakfast.
(He - I)
Locked the door and left the house.
(She - I)
Covered up the cake so it wouldn't spoil.
(I - You)
Played Bridge but lost.
(We - They)
Did not enjoy classical music.
(I - He)
Ran over the mountain.
(She - I)
Found out that I could not make the trip.
(She - We)
Helped cook for the church banquet.
(We - They)
Explained the purpose of all this.
(She - I)
Found the tiger hiding behind the large tree.
(You - I)
Built sand castles on the beach.
(She - We)
Played in the school band.
(I - You)
Blew the candle hard but it wouldn't go out.
(We - They)
Ran far down the lonely road.
(She - I)
Stopped when I saw the train coming.
(We - You)
Find it difficult to ask the question.
(I - He)
Was suspicious of the offer.
(I - She)
Slipped in the mud and fell into the water.
(He - We)
Found the lock but could not find the key.
(You - We)
Hiked for fifteen miles.
(They - I)
Forgave but did not forget.
(We - He)
Located the reference at the library.
(I - He)
Spent the money on foolish things.
(They - I)
Made application for the job.
(We - He)
Did not agree on anything.
(She - We)
Joined the church choir.
(We - You)
Froze upon contact.
(You - We)  
  Spread all the peanut butter on the bread.
(I - You)  
  Fled from the fire.
(They - I)  
  Flung away the garments of repentance.
(I - He)  
  Lost virtue.
(We - You)  
  Left the frightening place.
(We - You)  
  Lost the big game.
(She - We)  
  Bit the dust.
(They - I)  
  Thrust outward and upward.
(She - We)  
  Worked but only when the pressure was on.
(I - He)  
  Fell into the pit.
(She - I)  
  Bought them presents.
(We - You)  
  Forgot the appointment.
(I - You)  
  Sought for truth.
(She - We)  
  Built upon firm foundations.
(He - We)  
  Begot seven.
(I - He)  
  Bent the steel rod.
(He - I)  
  Looked and became wide-eyed at the sight.
(I - She)  
  Was hurt by the remark.
(He - I)  
  Sank the boat too deep to recover.
(He - I)  
  Burst into laughter.
(We - They)  
  Fed the person milk.
(We - They)  
  Paid for being indiscrete.
(He - We)  
  Trod upon the underdogs.
(She - I)  
  Broke the unwritten law.
(You - I)  
  Grew much too fast.
(We - You)  
Plew off the handle. 
(I - He)  
Lit the eternal light. 
(She - We)  
Won the fight. 
(We - You)  
Let her go too soon. 
(He - We)  
Lighted the way through the darkness. 
(They - We)  
Became rabbits. 
(We - They)  
Fought when threatened. 
(She - I)  
Bid too high for such a prize. 
(I - She)  
Leapt higher and higher. 
(I - She)  
Cast the stones. 
(We - You)  
Pled the house. 
(They - We)  
Were bored. 
(We - They)  
Leaned on them. 
(He and I)  
Melted all resistance. 
(She - I)  
Slunk behind the bushes. 
(I - She)  
Bred the animals. 
(They - We)  
Moved the mountain. 
(I - He)  
Beheld the scene and paled. 
(We - They)  
Found the treasure. 
(He - I)  
Forbade such activity. 
(They - We)  
Blew the candles out. 
(I - You)  
Spat cherry piths at it. 
(They - We)  
Began to run away. 
(They - We)  
Said it but did not believe it. 
(We - She)  
Felt so good.
(We - They)
Forsook the goal.
(He - I)
Ground out the cigarette butt in the ash-tray.
(I - You)
Struck it out.
(She - I)
Laid down to sleep, but rest would not come.
(They - We)
Meant something else.
(I - You)
Got the point.
(They - We)
Mowed the lawn as though the grass were people.
(He - I)
Learned too late.
(We - They)
Ate too much.
(I - You)
Kicked very high.
(We - They)
Opened the door and greeted the stranger.
(They - We)
Folded the covers.
(He - I)
Thrived on praise.
(You - We)
Prefer apples to bananas any day.
(She - I)
Bought extra clothes.
(You - We)
Attended a class reunion together.
(They - I)
Found the lost item yesterday.
(We - They)
Drank too much.
(I - He)
Was inspired with the scenery's beauty.
(We - They)
Were embarrassed by the story.
(I - You)
Do not know how to play tennis or golf.
(I - They)
Liked visiting the large city.
(We - They)
Rolled over on the grass.
(They - We)
Prefer the first to the last.
(He - I)
Typed the letter and mailed it.
(She - I)
   Awoke to the danger.
(I - They)
   Ran through the green fields.
(We - They)
   Gave willingly.
(I - They)
   Ran through the green fields.
(He - I)
   Might win.
(They - We)
   Tried to satisfy.
(We - You)
   Made the error.
(I - They)
   Saw the flag and stood at attention.
(They - We)
   Ate lunch before going to the movie.
(I - You)
   Overcame the frustration of failure.
(I - He)
   Was not impressed with the speech.
(You - We)
   Fished all day with little success.
(You - I)
   Ate hamburgers for dinner.
(You - I)
   Played golf but with poor scores.
(We - You)
   Answered all questions correctly.
(I - You)
   Cut down the tree with little effort.
(She - We)
   Painted the house white.
(They - We)
   Did not enjoy the long vacation.
(He - I)
   Repaired the motor to the speed boat.
(We - They)
   Became very close friends.
(We - They)
   Fed the animals at the zoo.
APPENDIX B

BEHAVIORAL CHECK LIST

Instructions: Indicate, in the space at the left, whether "seldom" or "often" best describes the following behaviors of this individual.

<table>
<thead>
<tr>
<th>Seldom</th>
<th>Often</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Collects and hoards objects.</td>
</tr>
<tr>
<td></td>
<td>2. Sucks or chews small objects or is a &quot;chain smoker.&quot;</td>
</tr>
<tr>
<td></td>
<td>3. Requests laxatives for the relief of constipation or complains about constipation.</td>
</tr>
<tr>
<td></td>
<td>4. Others on the ward do not ask him to join in their activities.</td>
</tr>
<tr>
<td></td>
<td>5. Orderliness: keeps his quarters and person neat and clean; or is reliable in the performance of petty duties.</td>
</tr>
<tr>
<td></td>
<td>6. Interest in food, such as being impatient to eat at mealtime.</td>
</tr>
<tr>
<td></td>
<td>7. Stubborn, obstinate.</td>
</tr>
<tr>
<td></td>
<td>8. Excessive or incessant talking.</td>
</tr>
</tbody>
</table>
APPENDIX C

ASSIGNMENT OF SUBJECTS TO TREATMENT CONDITIONS*

Reinforcers for Orals and Anals Following Correct and Incorrect Responses

<table>
<thead>
<tr>
<th>Reinforcers for Orals</th>
<th>Reinforcers for Anals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>Incorrect</td>
</tr>
<tr>
<td>Gumballs</td>
<td>Nothing</td>
</tr>
<tr>
<td>Pennies</td>
<td>Nothing</td>
</tr>
<tr>
<td>Gumballs</td>
<td>Pennies</td>
</tr>
</tbody>
</table>

*Total N is 60, comprised of 30 oral characters and 30 anal characters. There are 10 Ss assigned to each of the 6 treatment conditions.
VITA

Charles Donald Noblin was born in Jackson, Mississippi, on December 16, 1933. After graduating from Jackson Central High School in 1951, he entered Mississippi College, Clinton, Mississippi. He received the degree of Bachelor of Arts from that institution in 1955 with a major in psychology. He received the degree of Master of Science in 1957 from the Richmond Professional Institute of the College of William and Mary, Richmond, Virginia. In 1958 he enrolled in the graduate school of Louisiana State University, and became a candidate for the degree of Doctor of Philosophy. Professional experience in psychology includes work at the Mississippi State Hospital, the University of Chicago Medical School, the Alexandria-Pineville Guidance Center, and the Louisiana State University Speech and Hearing Clinic. His clinical internship was at the Gulfport Veterans Administration Hospital, Gulfport, Mississippi. Professional affiliations include the American Psychological Association, the Southeastern Psychological Association, and Sigma Xi.
EXAMINATION AND THESIS REPORT

Candidate: Charles Donald Noblin

Major Field: Psychology

Title of Thesis: EXPERIMENTAL ANALYSIS OF PSYCHOANALYTIC CHARACTER TYPES THROUGH THE OPERANT CONDITIONING OF VERBAL RESPONSES

Approved:

[Signatures]

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

EXAMINATION AND THESIS REPORT

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Approved:

[Signatures]

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination:

4 January 1962