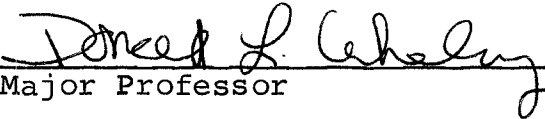

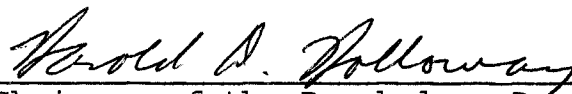


SHAPING APPROPRIATE VERBAL RESPONSES IN A
SOCIAL SITUATION WITH A WITHDRAWN
RETARDED ADOLESCENT

APPROVED:


Major Professor


Minor Professor


Chairman of the Psychology Department


Dean of the Graduate School

Shw

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A problem area which has been reported in verbal conditioning studies concerns the operant level of the response being studied. Since the effect of conditioning can only be determined relative to a change in the rate of response, a low operant level is preferred. However, if no responses are emitted, then the reinforcing contingencies cannot have an effect, and conditioning will not occur.

"Shaping" or "method of successive approximation" is a procedure which may be applied to increase the frequency of a response which has a low operant level, or it may also be used to bring about responses which have not been previously emitted. In "shaping," the experimenter initially reinforces a response which is within the behavioral repertoire of the subject. Then, the experimenter reinforces only responses which approximate the behavior which is desired. The final behavior is then directly reinforced.

The present investigation was an application of "shaping" to increase the frequency of verbal responses and social interaction. The subject was a seventeen year old, male resident at the Denton State School, who was functioning at the mild level of mental retardation. The most noticeable

aspects of the subject's behavior was his withdrawal from social situations and a low productive level of verbal responses.

"Topps Football Cards" were used in the present investigation as a potential conditioned reinforcer. The procedure consisted of five steps, with reinforcement contingent upon appropriate verbal responses. Also, contingencies were placed upon appropriate verbal behavior in response to others in his environment. Finally, the schedule of reinforcement was altered from a continuous schedule to a fixed interval schedule, with reinforcement contingent upon appropriate responses during the interval.

The data indicated that the "Topps Football Cards" served as a conditioned reinforcer. The subject verbally responded appropriately during all phases of the study when reinforcement was contingent upon these responses.

SHAPING APPROPRIATE VERBAL RESPONSES IN A
SOCIAL SITUATION WITH A WITHDRAWN
RETARDED ADOLESCENT

THESIS

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James N. Thompson, B. B. A.

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CHAPTER I

INTRODUCTION TO THE STUDY

Introduction

Words and magic were once one and the same thing. Today words still retain much of their magic power. The child learns to recognize the value of omnipotence in words and its relationship to the spoken language, and for him, speech becomes an instrument for the mastery and manipulation of his environment. It is through this medium of expression and communication that he acquires knowledge and experience and tells of his need for affection and reassurance (2, p. 29).

Verbal behavior has been viewed, rather than as a proper subject matter in its own right, as a manifestation of a person's "inner life." Instead of accepting a person's words at face value one had to discover the "real meaning" which was believed to arise from the individual's "psychic life" or "mental states." As Barbara has stated, "Words are filled with emotion; they reveal one's innermost thoughts, feelings, hostility, or resentments. They expose one's most impenetrable defenses and readily reveal one's truest personality" (2, p. 29).

Although the early behaviorists (38) objected to the utilization of these mental states because they could not be objectively observed and measured, it was many years before an acceptable alternative approach could be presented.

As Holz and Azrin have stated, "What was required was a theoretical basis for considering verbal behavior in purely objective terms. Such an analysis was provided by Skinner in his William James Lectures on verbal behavior in 1947, later published as Verbal Behavior" (11, p. 794). In this work, Skinner asserted that the verbal response can be studied just as any other response and that the verbal response is probably subject to the same kinds of variables that were seen previously in his operant conditioning studies.

Survey of the Literature

One of the earliest applications of operant conditioning in the field of verbal behavior was Greenspoon's study (7). Greenspoon used verbal reinforcement ("Mmm-hmm") to increase the frequency of plural nouns emitted by a subject. The subject was instructed to say all the words that he could think of, and not to use phrases or sentences. The fundamental procedure was to have the subject emit words and to reinforce some class of these responses (plural nouns) while not reinforcing others (other than plural nouns). Immediately after a plural noun was spoken by the subject, the experimenter uttered the sound "mmm-hmm." The sound "mmm-hmm" proved to be reinforcing, as the frequency of plural nouns emitted by the subject increased.

After Greenspoon's success, many experiments were conducted in the area of verbal conditioning. The majority

of them used the same basic procedure or a variant of the procedure used by Greenspoon. However, as reported by Krasner (14) in his review of studies of verbal conditioning, about one-quarter of the studies failed to find any increase of verbal responses as a consequence of the reinforcement procedure used. It became obvious that there were procedural difficulties causing problems in the verbal conditioning studies (25). Some of these problems were (1) the response to be reinforced, (2) the reinforcing stimulus, (3) experimenters, and (4) subject awareness.

One of the problems encountered frequently in verbal conditioning studies is choosing the response class to be reinforced. Runquest (25) has stated two considerations in choosing a response class. "First, it should have a low enough operant level to enable an increase to take place, but should occur frequently enough that some reinforcement can be given and 'learning' may take place within the time limits of the experiment. Secondly, the response class must be easily identifiable" (25, p. 533). Greenspoon (7) found that reinforcement has less effect upon the response class non-plural nouns than upon the response class plural nouns. He suggested that the possible explanation for this was that the initial level of the response of non-plural nouns was so high that there was little room for increase. Since the effect of conditioning can only be determined relative to a

change in the rate of response, it would appear that a low operant level would be desired. However, even with a low operant level, difficulties have been reported. Wilson and Verplank (40) reported that nine out of sixteen subjects gave no responses (adverbs) during the operant level period. Salzinger and Pisoni (26, 27, 28) have suggested that a verbal response must be reinforced eight to ten times before conditioning will reliably occur. Difficulties were also experienced by Goldiamond (6) in attempting to condition responses with a low operant level.

Another problem encountered in verbal conditioning studies is whether the stimulus is acting as a reinforcer. The most common reinforcing stimulus used in the early studies was the "mmm-hmm" sound. Even the possibility of differences in examiner interpretation of how the "mmm-hmm" should be emitted was controlled in the Hildum and Brown study (10). The examiner was a trained linguist who carefully equated the intonation used in reading questions and responding. However, Mandler and Kaplin (20) questioned whether it is justifiable to consider the stimulus "mmm-hmm" a universal reinforcer. In analyzing the responses of individual subjects they found that "mmm-hmm" was reinforcing for some subjects but punishing for others. Hildum and Brown (10), Sullivan and Calvin (33), and Ulrich (35) also questioned the effectiveness of such verbal reinforcers. In

Ulrich's study (25), 80 per cent of the subjects walked out of the situation when the experimenter did not react in any way other than to agree with their statements of opinion. Other verbal cues used in verbal conditioning studies were "good" (21, 24, 34), "fine" (39), and "you're right" (36). Nonverbal gestural cues have also been used in a number of studies. Hartman (9) used head nodding and head shaking. Mock (23) used a combination of head nodding and "mmm-hmm" with one experimental group and a combined head shake and "huh-uh" with another group. Krasner (15) used a smile in addition to the head nod and "mmm-hmm." Wilson and Verplank (40) alternated the cues of "mmm-hmm," "good," and writing down the key word. Wickes (39) alternated a head nod, smile, and leaning forward of the body with one of his two experimental groups. Mechanical cues have also been used in these studies. McNair (22) used a bell tone, and Ball (1) used a light flash and a buzzer. As Runquist has stated, "One thing is clear: just as there are no response classes that always result in learning, there are no potential reinforcers that always result in learning" (25, p. 534).

The influence of the experimenter is another problem which arises in the experimenter-subject interactions in verbal conditioning studies. Kanfer (13) has stated that the highly interpersonal nature of the verbal-conditioning

situation makes experimenter differences quite likely. He found that one of the largest differences in his study was between experimenters rather than between experimental conditions. This occurred in spite of precautions to limit the interaction between the experimenters and the subjects. Other investigators have also observed that subtle differences between experimenters appear to influence the data of verbal conditioning studies. Binder, McConnell and Sjöholm (3) showed that the experimenters' physical characteristics exerted an influence upon the subject. Verplank (36) observed that the social status of the experimenter influenced the data with subjects. Holz and Azrin (11) have explained that the influences that may result from the observer's presence in the experimental situation are those which Skinner included under the heading of audience control. This term refers to the discriminative stimulus functions of the listener who can mediate the reinforcement of vast groups of responses. Because of the distinctive histories of the subjects with various audiences, such an influence of the observer in the experimental situation is difficult to predict. It has also been recommended by Holz and Azrin (11) that, although investigation of audience control seems to be an important area for further research, it would appear advisable to treat the audience as an explicit experimental variable separate from other experimental events. They

state that the tasks of recording the reinforcing, as well as programming his own behavior, would seem too demanding for the observer in the experimental situation.

Another problem encountered is the role of conscious awareness of the reinforcement contingencies in the verbal conditioning studies. Greenspoon (7) questioned the subjects after the experiment to determine if they were "aware" of the relationship between response class and reinforcement. Subjects who could verbalize the relationship were excluded from future analysis of the data. This procedure of eliminating subjects who could state the contingencies after some questioning set the stage for a major inquiry into the role of awareness in verbal conditioning studies. Greenspoon (7) found that less than 15 per cent of his subjects were aware of the essential experimental contingencies. However, later experimenters reported a higher incidence of awareness accompanying conditioning. Dulany (4) found that all of the subjects who showed conditioning were also aware of the experimental contingencies. Those who failed to condition were also unable to verbalize the contingencies. Spielberger and DeNike (32) failed to find either conditioning or awareness with their subjects. The fluctuation of the results pertaining to awareness led some investigators to wonder if this was not a futile problem (11). Greenspoon (8) suggested that the questions themselves may gradually lead the subject to awareness. Krasner and

Ullmann (16) have suggested that the answers to the questions are themselves verbal behavior, and therefore under the control of consequences. Verplank (37) has suggested that awareness itself would appear to function as operant behavior because correlated subjective events may arise because they have been reinforced for occurring in the past. As Greenspoon has stated, ". . . even if S verbalizes the contingency, we do not know if he is aware because he showed a change of rate of emission of critical responses, or he showed a change of rate of emission because he was aware" (8, p. 29).

Statement of the Problem

As previously stated, a problem area which has been reported in verbal conditioning studies concerns the operant level of the response being studied. The frequency of the operant level should be low enough to allow an increase to take place, but should occur frequently enough that reinforcement can be given. As was mentioned in the Greenspoon study (7), reinforcement had less effect upon the response class non-plural nouns than upon the response class plural nouns, and a possible explanation for this was that the initial level of the response class of non-plural nouns was so high that there was little room for an increase to take place. Although a low operant level would seem desirable, difficulties have been reported. In the Wilson and Verplank

study (40) nine out of the sixteen subjects gave no response (adverbs) during the operant level period. If the response is not emitted by subjects then the reinforcing contingencies cannot have an effect and conditioning will not occur.

The problems related to the operant level of the response class are not peculiar to verbal conditioning but are common to many studies of operant conditioning. The distinctive patterns of responses associated with various schedules of reinforcement would not be apparent if the response occurred with a high frequency independently of conditioning. Thus, a low operant level is essential for the study of conditioning (11). Ferster (5) has described several procedures for dealing with the problems arising from this requirement: (1) to shape the response from the existing repertoire of the subject; (2) to elicit the response initially by some artificial means, such as "baiting the bar"; and (3) to allow extended periods of time for the response to occur.

Each of these methods has been applied in verbal conditioning studies in an attempt to increase the frequency of responses which have a low operant level. Isaacs, Thomas, and Goldiamond (12) and Sherman (30) shaped verbal responses in several mute mental hospital patients by reinforcing successive approximations to talking. Lane (17) and Lane and Shinkman (18) elicited the response by means of instructions. Shearn (29) used the presence of a microphone in the

experimental room to occasion the initial verbal responses. Goldiamond (6) and Lindsley (19) allowed long periods of time for the conditioning of responses which initially occurred only infrequently. The present study is directed toward shaping verbal and social interaction with a withdrawn state school resident by the method of successive approximation.

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CHAPTER II

RELATED RESEARCH

"Shaping" or "Method of Successive Approximation"

Operant conditioning shapes behavior as a sculptor shapes a lump of clay. Although at some point the sculptor seems to have produced an entirely novel object, we can always follow the process back to the original undifferentiated lump, and we can make the successive stages by which we return to this condition as small as we wish. At no point does anything emerge which is very different from what preceded it. The final product seems to have a special unity or integrity of design, but we cannot find a point at which this suddenly appears. In the same sense, an operant is not something which appears full grown in the behavior of the organism. It is the result of a continuous shaping process (3, p. 91).

"Shaping" or "method of successive approximation" may be applied to increase the frequency of a response which has a low operant level, or it may also be used to bring about responses which the subject has not previously emitted. Although the terms "shaping" and "method of successive approximation" are synonymous, "shaping" refers more to the actions of the experimenter, whereas "method of successive approximation" refers more to the general logic of the procedure (4).

As outlined by Whaley and Malott (4), "shaping" involves several successive steps: (1) the experimenters

decide upon a final behavior pattern they would like to see the subject acquire and maintain. This final behavior is called the terminal behavior or the terminal response. (2) After the terminal behavior is agreed upon, the individual upon whom the technique is to be employed is observed closely in order to identify an initial response which is related to the terminal response along some meaningful dimension. Unlike the terminal response, which the patient does not currently emit, the initial response must be made by the subject in the here and now. (3) The selection of something which will be reinforcing for the subject. (4) The initial response is conditioned and occurs with regularity. (5) The initial response is abandoned and another response which more closely approximates the terminal behavior is selected and likewise conditioned. (6) This procedure is continued until the terminal behavior is observed to occur and is reinforced directly.

Several Applications of "Shaping"

An example of "shaping" behavior in a laboratory setting is provided by Skinner.

To get the pigeon to peck the spot as quickly as possible we proceed as follows: We first give the bird food when it turns slightly in the direction of the spot from any part of the cage. This increases the frequency of such behavior. We then withhold reinforcement until a slight movement is made toward the spot. This again alters the general distribution of behavior without producing a new unit. We

continue by reinforcing positions successively closer to the spot, then by reinforcing only when the head is moved slightly forward, and finally only when the beak actually makes contact with the spot (3, p. 92).

Bangs and Freidinger (1) applied "shaping" to increase the vocal intensity of a girl whose diagnosis was aphonia. The terminal response desired was an audible level of vocal responses by the subject. The initial response selected was breathing exercises. The praise and approval of her teacher proved to be reinforcing for the girl. This response was conditioned and then reinforcement was contingent upon the desired response for the next step, which was to hum. The remaining steps were an audible intensity level for speaking consonant sounds, oral reading, and finally, conversation. Speech emitted by the girl at a level of vocal intensity which could be heard by others was the terminal behavior desired, and this was directly reinforced.

Isaacs, Thomas, and Goldiamond (2) applied "shaping" to reinstate verbal behavior in a hospitalized mute psychotic. The patient had been mute for nineteen years and was recorded as withdrawn and exhibiting little psychomotor activity. The final response desired for the subject was speech. Eye contact was selected as the initial response and "chewing gum" was used as the reinforcer. When the subject looked directly at the gum he was immediately reinforced with a piece of chewing gum. During the next step, reinforcement

was contingent upon the subject moving his lips. The next response which the subject was required to emit before receiving reinforcement was a vocalization. Then he was required to say "Gum" before receiving the piece of gum. This was the terminal response desired from the subject and it was directly reinforced. This terminal response was also accompanied by other vocal responses, as the subject answered questions regarding his name and age.

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CHAPTER III

METHOD

Subject

The subject was a seventeen-year-old male resident at the Denton State School who was functioning at the mild level of mental retardation. According to medical reports, the etiology of his retardation had been diagnosed as phenylketonuria. The most noticeable aspects of his behavior were his withdrawal from social situations together with a low level of verbal responses.

Harold was admitted to the Denton State School in 1964, at the age of nine. He received a psychological evaluation in 1968, and the test results indicated that he gave sporadic test evidence of intellectual resources within the mildly retarded range and was currently functioning as a moderately retarded person (WISC: VIQ-47, PIQ-51, FSIQ-less than 46) because of a psychotic-like disorder of thought and affect which might have been partially associated with a medically diagnosed metabolic disorder (phenylketonuria). Also, in the same evaluation it was reported that he was verbally unproductive and would not converse with the examiner even though Harold's occasional single word and short answer replies indicated sufficient linguistic facility.

Harold was last evaluated in 1972. The test results and behavioral observations reported indicated that Harold is presently functioning at the mild level of mental deficiency (WAIS: VIQ-65, PIQ-70, FSIQ-65). His weaknesses seem to be skills influenced by interaction with the environment. Social deprivation probably could account for his relative intellectual capacity. His speech was not very clear in some instances, but at other times it was quite understandable. Vocalization became unclear when he was not sure of himself.

Pre-Experimental Observations

Harold had been initially observed previously as a practicum assignment at the Denton State School. He was referred because of his withdrawn behavior and his refusal to talk, particularly in response to others. Several days were spent observing him, and during this time he would not respond to any attempt at initiating a conversation. His houseparents stated that the only occasion when he was very talkative was when he knew he would be going home that day. Ten questions were selected and a baseline was recorded for five days. Harold did not verbally respond to any of the questions during the baseline period. However, the assignment was terminated at this point because Harold went home for a month's leave from the state school.

The sessions were resumed several months later. Harold was observed sitting on a bench in the dormitory "TV Room" away from the other residents. If someone sat by him he would move to another part of the room. He would not interact socially with the other residents and if they spoke to him or asked him a question, it was ignored. At his job, he was described as "a peculiar boy who seems to be in a world of his own." His supervisor reported that he had been placed in group situations, but he would not cooperate. At school, he was described as being very quiet. His teacher reported that when he was asked to read aloud, he would read very fast and in such a low voice that much was not understandable.

As before, several days were spent with Harold before beginning the experimental design. Also as before, he would not respond to attempts at conversation. Although he would occasionally nod his head, he emitted no verbal responses during this period.

Apparatus

The apparatus was utilized during Step III of the experimental design. The materials consisted of thirty feet of 110-volt electric wire, three standard canopy-button switches, three standard 110-volt light sockets, and one 110-volt electric plug.

The wire was cut, leaving three lengths of three feet each and one length of twenty-one feet. Each of the three

feet lengths were used to connect the switches to the light sockets. The switches to each socket were three feet apart. The main line, or twenty-one feet length, was used to supply current to the switches. The plug was put on one end and the other end was hooked in a parallel hookup to the switches. When the service cord was plugged into a standard 110-volt socket, the switches could be switched on either singly or jointly to turn on either one, two, or all three of the lights.

Procedure

The method in shaping is the differential reinforcement of successive approximations to a desired behavior. Initially, five questions were presented to the S and a baseline was recorded for the percentage of verbal responses. The questions were: (1) How old are you? (2) Do you like school? (3) Do you like your job? (4) Where is your home? and (5) Do you have any brothers or sisters? Once the baseline was determined, the terminal behavior desired for the S was decided. The terminal behavior decided upon was for the S to interact socially, and this would be measured by the S emitting appropriate verbal behavior in a group setting. It was decided by the E to have the contingencies operating in as "natural" an environment as possible, so the procedure did not occur in a given setting.

The next step was to establish motivation by identifying a reinforcer. An adequate reinforcer should be one that can be presented immediately following a response, one that can be presented repeatedly without satiation, and one that is in reasonable supply (3). Candy and chewing gum were offered to the S but were refused. It was reported that the S had played on his dormitory's baseball team, and his school teacher stated that he would sometimes look at some "sports books" at school when he had finished his assignments. A "Topps Football Card" was presented to the S and it was accepted. It was decided to attempt these cards as secondary or conditioned reinforcers. Examples of these cards are presented in Figure 1. Keller and Schoenfeld (2) have stated that in order to act as S^r for any response, a stimulus must have status as an S^D for some response. This rule states two things. "First, in order to transform a neutral stimulus into a conditioned positive reinforcer, it must be presented so as to become discriminative for reinforcement. Second, once it has become a conditioned reinforcer in one situation, it can function as a reinforcer in other situations" (1, p. 37).

The procedure used to shape the S's behavior was as follows:

Step 1--Reinforcement was contingent upon the S reading from the football cards. A card was shown to the S with

the instructions, "Harold, what is this player's name"? If he verbally stated the player's name, he was given the card. Then, upon presentation of a card, he was required to read the player's name and team, then the player's name, team, and position, and finally, he was required to read the data on the back of the card before receiving the card.

Step 2--Reinforcement was contingent upon the S answering the questions which had been previously asked during the baseline period. A card was presented to the S and if he verbally answered the question, he received the card.

Step 3--Reinforcement was given when the S emitted the proper responses utilizing the apparatus previously described. A red and a blue light bulb were used in the apparatus. This step took place in the S's dormitory, and it consisted of two parts:

- a. When the red light was depressed, the S was to ask a question and the E would answer. When the blue light was depressed, the E would ask a question and the S was to answer. Each session consisted of ten trials, with the red and blue bulb each being depressed five times. The S's receiving reinforcement was contingent upon his emitting the appropriate verbal response.

- b. The same procedure was repeated with various residents from the S's dormitory. Each session a different resident was selected, and he would verbally respond as the E had in Step 3a. After each trial, the resident and the S would each receive a card if they both made the appropriate verbal response.

Step 4--Reinforcement was contingent upon an appropriate verbal response. The procedure was similar to the previous step, with the apparatus removed. Another resident from the S's dormitory was selected. During this step a card would be presented and they would alternate asking and answering questions. Each of them would receive a card after each trial if they emitted the proper verbal response.

Step 5--The terminal behavior selected for the S was for him to interact verbally in a group situation. The S and several other residents played Bingo in the dormitory, and the S was required to call the numbers. A football card was the reinforcement for the "winner" of the game.

In addition, cards were given to the S's academic teacher, work supervisor, and houseparents to determine if his appropriate verbal responses would generalize. They were to ask him questions relevant to their daily activities, and if he responded appropriately, he was to receive a card.

Also, after the terminal behavior had been established, the schedule of reinforcement was altered from a continuous schedule to a fixed-interval schedule. The S was given the instructions, "Harold, if you answer each question you will receive two cards at the end of the day." This procedure was followed for two sessions. Then the S was required to emit the appropriate verbal responses for three sessions, after which he would receive six cards. Finally, reinforcement was contingent upon the S's verbally responding appropriately for five sessions, after which he would receive ten cards.

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CHAPTER IV

RESULTS

During the baseline period (See Figure 2), the S emitted no verbal responses to the questions. Although he would occasionally nod his head in response to the questions which could be answered yes or no, he made no verbal responses during this period. The baseline was terminated after five sessions because, based upon previous exposure to the S, it was not probable that he would answer, and a longer baseline period would not be necessary.

When the football cards were introduced, the S immediately began to emit verbal responses (See Step 1, Figure 2). During each session (See Sessions 1-10, Step 1, Figure 2), a card was presented to the S five times. The card, upon presentation, served as a discrimination for reinforcement. When the S emitted the appropriate verbal responses, he received the card for reinforcement. During the first two sessions, the S verbally stated the player's name on each trial. Then, upon presentation of a card, he read the player's name and team (See Sessions 3-4); then, he read the player's name, team, and position (See Sessions 5-6); and finally he read the data on the back of the card (See

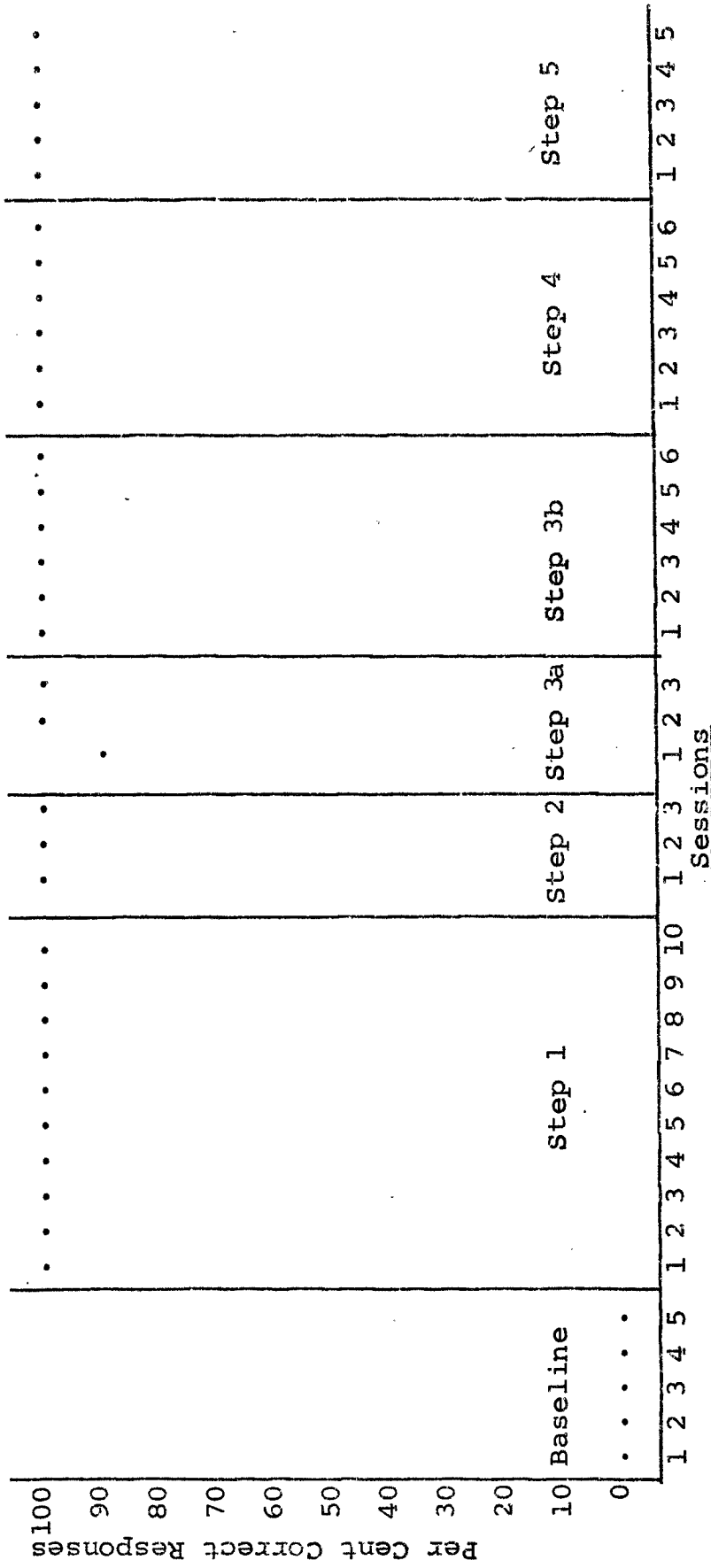


Fig. 2--Baseline and steps in "shaping" verbal responses in a social situation

Sessions 7-10). During Step 1 the S emitted the appropriate verbal response on each trial.

During the next step, the S answered the questions which he had not responded to during the baseline period (See Step 2, Figure 2). The S, upon presentation of a card, was asked five questions each session. The S's answers each session were that he was seventeen years old, that he liked school and his job, his home was in Dallas, and that he had brothers and sisters. A stable rate of responding was established for Step 2. When the football card (neutral stimulus) had been presented to the S, it became a stimulus discrimination for reinforcement. When the cards were given to the S following an appropriate response, and the frequency of the responses increased above the operant level, they, by definition, functioned as a conditioned reinforcer (1).

The remaining steps (See Steps 3-5, Figure 2) determined that the cards, having become a conditioned reinforcer in one situation, also served as a reinforcer in other situations.

During the next step (See Step 3a, Figure 2), other than the first time the red light was depressed, a stable rate of appropriate verbal responses was established. Since the response seemed to be under the stimulus control of the E, the next step was to generalize the stimulus to others. During this step (See Step 3b, Figure 2), the S responded appropriately on all the trials with various residents from his dormitory.

The S responded appropriately on all trials during Step 4. Examples of questions during this period were: When are you going home? What time do you go to work? Who is your teacher?, etc.

During the terminal behavior (See Step 5, Figure 2), the S responded appropriately in a group situation. The S and several other residents played Bingo, and the S, on all occasions, called the numbers. A football card was the reinforcement for the winner of the game.

In addition, the S responded appropriately (See Figure 3) on all occasions to questions relevant to the daily activities of his academic teacher, work supervisor, and houseparents.

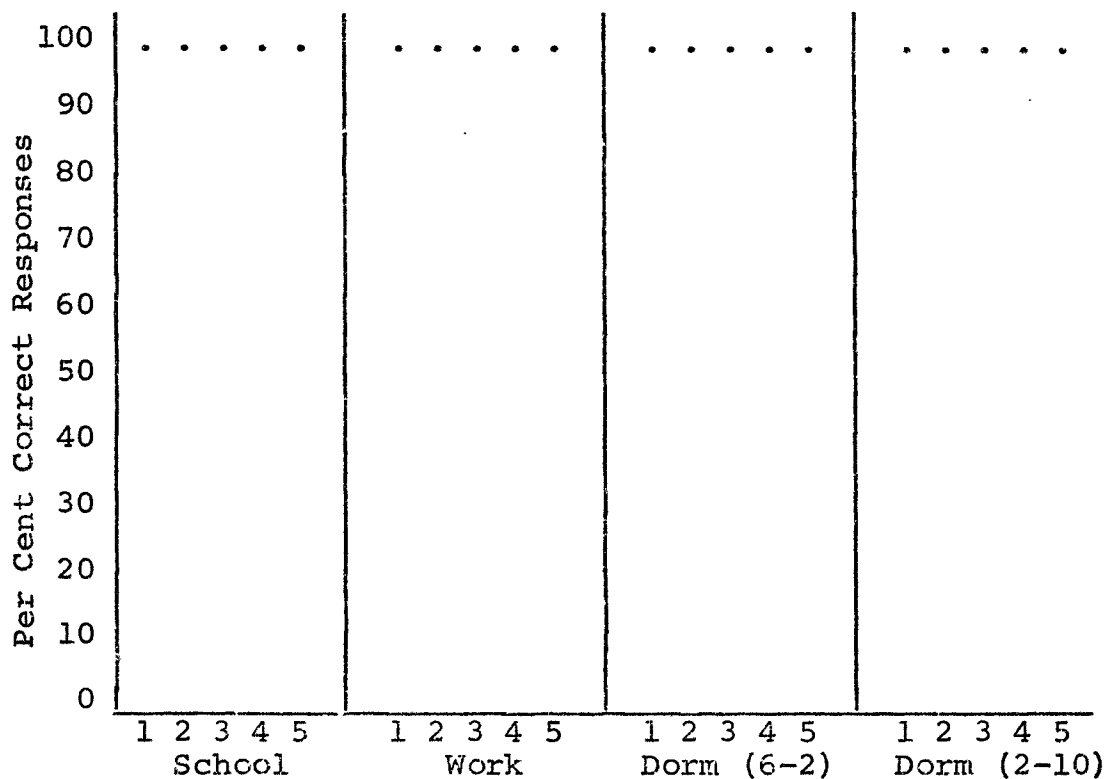


Fig. 3--Appropriate verbal behavior in response to others

Also, the S responded appropriately when the schedule or reinforcement was altered from a continuous schedule to a fixed-interval schedule, contingent upon appropriate responses during the interval (See Figure 4).

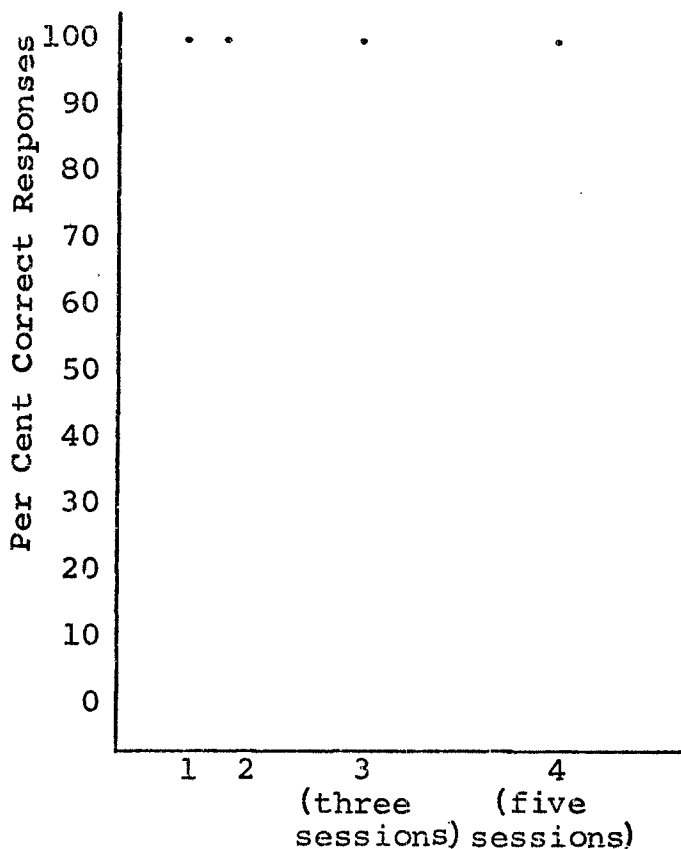


Fig. 4--Appropriate verbal behavior on a fixed internal schedule.

In the present study, "Topps Football Cards" were proven to serve as a conditioned reinforcer. As stated by Keller and Schoenfeld (2) a stimulus must serve as a discriminative stimulus for some response in order to act as a conditioned reinforcer. According to Bushell and Burgess, this rule states two things: "First, in order to transform a neutral

stimulus into a conditioned positive reinforcer, it must be presented so as to become discriminative for reinforcement. Second, once it has become a conditioned reinforcer in one situation, it can function as a reinforcer in other situations" (1, p. 37). When the football card was presented to the S, it served as a discrimination for reinforcement if he emitted the appropriate verbal response. Also, when the cards became a conditioned reinforcer in one situation, they also served as a reinforcer in other situations. When the environmental contingencies were arranged so that verbal responses were reinforced, the appropriate verbal responses were emitted by the S. His behavior was then "shaped" until he called the numbers for a Bingo game with other residents, a behavior which would have been very improbable before the study began.

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CHAPTER V

DISCUSSION

A stimulus controlling behavior as an S^D , or conditioned reinforcer, need not stem from the inanimate environment alone. Other organisms, or the stimuli emanating from them, can act in these ways too, and therein lies a fact of utmost significance to human as well as other biological life. Social behavior may be described as behavior for which the reinforcing or discriminative stimuli are, or have been, mediated by the behavior of another organism (2, p. 257-258).

From birth on social stimuli play a large part in the life of human beings. Forester (1) has suggested that maladjustive behavior is the result of differential reinforcement; this behavior may be defined in terms of the behavior that important people in the individual's environment wish to increase, decrease, or change.

In the optimal home environment, the growing child is given the primary reinforcement of food, warmth, relief from pain, etc., and the secondary reinforcement of affection, approval, etc. Desirable behavior is reinforced and undesirable behavior is ignored or corrected. As problems arise in the child's development, parental aid is available. Under these contingencies, a child is expected to reach adulthood a "balanced, adequately-functioning individual."

However, in an institutional environment, the prognosis for childhood development holds considerably less promise. For the majority of these children, the trauma of parent-child separation has been experienced. The child has, at this point, been numbered and categorized. Not entirely depersonalized, however, he is assigned a dormitory, becoming one of several responsibilities for an endless shift change of temporary houseparents. As time passes, the institutionalized youngster fits, more or less, adequately into the routine of his environment.

As in the classroom situation, the houseparents find themselves often devoting a large amount of their time and attention to the loud or aggressive child, while the others, especially the more quiet and withdrawn, slide unobtrusively into the background.

The withdrawn child doesn't talk much. Fifteen boys clamor for their coats; his coat is given to him without his having to ask for it. He wants his radio and points to it. The houseparents understand, reaching over the heads of other boys who are presently seeking his attention with considerably more clarity. The withdrawn child may be cooperative and agreeable. He may present few discipline problems to his busy houseparents, seldom participating in the mischief, rowdy behavior, and games of his dormitory-mates. He often withdraws even more into his own small, but securely quiet, world.

A method to alter this situation is by building a new behavioral repertoire beginning with activities already in the person's repertoire, finding a method of sustaining them, and then gradually widening their range. The general framework of this method is that of operant reinforcement. The focus of this method is on the consequence of the behavior as the factor which maintains it. Reinforcement is the major concept and refers to a technique for increasing the frequency of an activity by following it with a special consequence (1).

In the present study, "Topps Football Cards" were used as the reinforcer. Many residents in institutions, as well as non-institutionalized children, are very interested in sports and these cards could be reinforcing in other studies. "Topps Cards" are also printed for basketball and baseball players, depending upon which sport is in season. Results of this study would indicate that further research is warranted utilizing these cards as possible reinforcers.

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