Generalization Effects of Verbal Conditioning in Chronic Schizophrenics

James Larry Tichenor
Western Michigan University

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GENERALIZATION EFFECTS OF VERBAL CONDITIONING IN CHRONIC SCHIZOPHRENICS

by

James L. Tichenor

A Thesis
Submitted to the
Faculty of the School of Graduate Studies in partial fulfillment of the
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INTRODUCTION

The present study is an attempt to analyse a psychotherapeutic relationship within a verbal conditioning paradigm. Krasner (1965) defines verbal conditioning as the systematic application of social reinforcement to influence the probability of another person emitting a specific verbal response. He defines psychotherapy as a behavior modification process between two people, one labeled by society as therapist, the other as patient. In this paper the terms "verbal conditioning" and "psychotherapy" are defined in this manner.

The fact that verbal behavior is modified by its consequences has been shown in two extensive reviews of the literature (Krasner, 1958a; Salzinger, 1959). Numerous studies demonstrated that it was possible to condition the verbal behavior of psychiatric patients (O'Connor and Rawnsley, 1959; Dinoff, Horner, Kurpiewski, and Timmons, 1960; Salzinger and Pisoni, 1961; Meichenbaum, 1969). As an example in one such study, (Weiss, Krasner, and Ullmann, 1963) sixty-four patients were conditioned to use emotional words in telling TAT-like stories. Reliable conditioning was found, indicating that these patients were responsive to social reinforcement.

In reviewing the literature on verbal conditioning with schizophrenic patients, the author only found one study (Cohen and Cohen, 1960) which failed to obtain conditioning with schizophrenic patients. It is possible, however, that this failure was due to the use of a problem-solving task rather than a free operant situation.
The resemblance between verbal conditioning and psychotherapy has been discussed for a number of years. Krasner (1965, p. 226) noted that:

"... verbal conditioning is a major aspect of traditional psychotherapy; verbal conditioning is prototypical of the social influence situation; verbal conditioning is a treatment procedure in its own right."

Bandura (1961) indicated that many of the changes observed in psychotherapy, at least insofar as the patients' verbal behavior is concerned, can be accounted for in terms of the therapists' direct, although usually unwitting, reward and punishment of the patients' verbal expressions. Ince (1968) states that in addition to verbal reinforcement, behavior such as smiling or nodding the head, can produce modification in human verbal behavior in a quasi-therapy situation. Numerous additional studies have shown the effects of a therapist's reinforcement on a patient's verbal behavior (Murray, 1956; Krasner, 1958b; Rickard, Dignam, and Horner, 1960; Rogers, 1960; Slechta, Gwynn, and Peoples, 1963). Greenspoon (1962) concludes that the research on verbal conditioning in both the therapy and quasi-therapy settings generally suggest that the verbal behavior of the patient and / or subject can be modified.

Some investigators have attempted to show that in ordinary psychotherapy verbal conditioning is the essential element. Williams and Blanton (1968) compared patients treated by verbal reinforcement method directly with those treated by ordinary psychotherapy. The results indicate a positive proportional increase in statements.
containing discriminable cues to affect or feeling when such statements are specifically reinforced as well as when ordinary psychotherapy is given. Adams, Noblin, Butler, and Timmons (1962) showed that psychoanalytic interpretive statements can serve as verbal reinforcers. Truax (1966) found significant reinforcement effects in an analysis of client-centered therapy. He demonstrated that a therapist may be, and often probably is, reinforcing certain verbal statements of their clients or patients, without realization of this on the part of the therapist. Waskow (1962) replicated a psychotherapy situation with college students and found that selective therapist responding will function as a reinforcer for the feelings or content aspects of a patient's communications.

Assuming that verbal conditioning is the major element in psychotherapy, how effective is psychotherapy in producing behavior change outside the therapy session? Greenspoon (1962) points out that there is little experimental evidence that intra-psychotherapeutic changes generalize to extra-psychotherapeutic behavior. Zax and Klein (1960) reviewed the literature on behavior changes following psychotherapy and concluded that there was no good evidence relating verbal behavior changes during therapy to behavior changes in the family and community. Eysenck (1966) believes that what appears to happen is that clients become conditioned through therapy to make different responses on the purely semantic level to questions regarding their behavior but there is no observable behavior changes in other situations. He reviewed studies of the recovery rate from
neurotic disorders claimed for psychoanalysis and other dynamic psychotherapies as compared with custodial treatment and / or non-specific treatment and concluded that psychodynamic therapies were no more successful than the comparison control procedures, and questioned the effectiveness of traditional therapy in producing beneficial behavior changes.

As already has been noted, the relationship between verbal behavior in a psychotherapy session and nonverbal behavior outside the session is intrinsically related to the effectiveness of psychotherapy. Grossberg (1964) contends that the assumption, that changes in verbal behavior are correlated with changes in nonverbal behavior, may be among the "dubious relics of psychodynamic thinking" that still haunt learning theory approaches to psychotherapy.

Some investigators have found little or no correlation between verbal changes and nonverbal changes (Dinoff, Horner, Kurpiewski, Rickard and Timmons, 1960; Cowden, Reynolds, and Ford, 1961; Lang, 1964; McCord and McCord, 1964). Rosenberg (1961) found that when verbal conditioning and generalization tasks are quite dissimilar, generalization does not occur. Brodsky (1967) found a correlated verbal behavior change following nonverbal behavior change, but no nonverbal behavioral change following verbal behavior change.

The literature in this area is contradictory in that some investigators have found a nonverbal change following verbal conditioning (Lovaas, 1961; Ullmann, Krasner, and Collins, 1961; Krasner, Knowles, and Ullmann, 1964; Lovaas, 1964a). Lovaas (1964b) contends that to
the extent that two response systems (verbal and nonverbal) have reinforcing stimuli in common, it would be unlikely that an operation upon one system would not also change characteristics of responding in the other system. Kanfer (1963) says that changes in verbal behavior may generate changes in other types of behavior. Bem (1966) investigated the verbal control over nonverbal behavior and found that verbal self-control was produced experimentally in three year old children. Risley and Hart (1968) developed correspondence between children's nonverbal and verbal behavior such that their nonverbal behavior would be altered simply by reinforcing related verbal behavior.

The results of these studies certainly appear to cast doubt upon the effectiveness of psychotherapy since there is considerable doubt that learning which occurs during psychotherapy generalizes to different situations. Referring to verbal conditioning as the major element in psychotherapy, Windner (1957) says that psychotherapy seems to be a complex and not always efficient conditioning process in which the patient learns to talk differently and little else.

Of direct importance to the question of behavioral change following verbal conditioning is the role of awareness in psychotherapy. Hobbs (1962) reports that one of the firmly rooted assumptions in psychotherapeutic practice is that the development of awareness on the part of the client is a major goal of the therapeutic endeavor. Grossman (1952) selected awareness as the criterion
for patient improvement in his study because most modern theories emphasize its role in the therapeutic process. Bandura (1961) says that it is generally assumed that if a patient is aware of the cues producing his behavior and of the responses he is making, his behavior will become more susceptible to verbally-mediated control. Greenspoon (1962) states that the problem of treating psychotherapy in a verbal conditioning framework is the effectiveness of verbal conditioning procedures in generalizing to other settings.

In summary, much of the available literature suggests that verbal conditioning is an integral part in psychotherapy of various persuasions. However, the literature is not consistent in showing that there is a necessary nonverbal behavioral change following the modification of verbal behavior.

The present study was designed to replicate a psychotherapeutic relationship, as defined earlier by Krasner (1965), in an attempt to determine if a change in verbal behavior during a psychotherapy session produces a nonverbal behavioral change outside the therapy session. Awareness of "inappropriate" behaviors, as defined by an acknowledgement from the S that he has performed such behaviors, will be verbally conditioned. The frequency of occurrence of these "inappropriate" behaviors will be used to assess any generalization of verbal behavior in the session to nonverbal behavior outside the session.
METHOD

Subjects

The Ss were ten male schizophrenic resident patients at the Veterans Administration Hospital, Battle Creek, Michigan. All were less than fifty-five years old. There was no indication of central nervous system pathology in any of the Ss (Appendix A details the Ss' ages, diagnoses, and lengths of present hospitalization). Each S was verbal in that they were responsive to questions and each emitted some measurable "inappropriate" behaviors. They all were located on a locked ward, which contained a dayroom, dormitory, bathroom, and porch. All the Ss were on some type of medication. There were about thirty other patients on the same ward.

Procedure

The experimenter observed the Ss on the ward and at mealtime for six consecutive hours each day during a three day period. A technique of time-sampling was used for these observations as this allows a single observer to record responses of several Ss (Johnston and Harris, 1968). The author observed each S for five minute periods with a one minute interval between periods. During these six hour observation periods, each behavior that the investigator judged as "inappropriate" was recorded and the frequency of occurrence of these behaviors tabulated. From the lists of behaviors accumulated for each S, the ones occurring with the highest frequency...
six to fourteen for each S) were identified. An "inappropriate" behavior was defined as a behavior that the investigator considered to be "unusual" if it was to occur outside a psychiatric hospital and if it was thought to be detrimental to the recovery of the S (A list of these behaviors is shown in Appendix B). A tabulation sheet was composed which would subsequently facilitate accurate recording of the frequency of the selected "inappropriate" behaviors.

Two undergraduate psychology students at Western Michigan University were assigned as independent observers for this study. They were told nothing about the method and purpose of the study and were instructed not to ask questions unless they were related to their role as observers. The observers were taught how to conduct the time-sampling and were trained for two days to detect and record an "inappropriate" behavior. To assess the reliability of the observers response recordings, both observers were instructed to observe each S for a five minute period and record responses as they usually did during previous observational periods. Reliability was computed by the following formula: Number of responses agreed upon (35) divided by the total number of responses (39) multiplied by 100. The percentage of agreed upon responses was 90. This level of agreement was judged to be acceptable (Johnston and Harris, 1968). The observers were then given a list of "inappropriate" behaviors for each S and began to observe and record the frequency of these behaviors by placing the number assigned to each behavior on a data sheet as that behavior occurred (A sample data sheet is shown in...
Appendix C). Ss were observed for six hours per day, Monday through Friday. One observer recorded responses for two consecutive hours and then the other observer recorded responses for two consecutive hours. The last two hour period was taken by one observer on one day and the other observer on the next. The S with whom the observers began their observations with each day was randomized to avoid recording of a certain S's responses at a specific time each day. The observers recorded the frequency of these behaviors throughout the remainder of the study.

After the observers had established a baseline of the Ss' "inappropriate" behaviors for eight days, the experimental period, which consisted of three phases, was put into effect.

Phase I consisted of three days during which the investigator interviewed each S in his office and asked him the following questions pertaining to each "inappropriate" behavior that was listed for that particular S. "Have you ever ___?" "Do you think it is 'good' or 'bad' for a patient to do ___?" A "yes" or "no" response was recorded for the first question and a "good" or "bad" response for the second question. Only those questions that were answered with a "no" on three consecutive days were used in Phases II and III.

Two days after the termination of Phase I, Phase II began. Ss were not seen by the investigator during this two day period. Phase II consisted of eight daily sessions during which the Ss were conditioned to respond to the question, "Have you ever ___?"
by saying "yes". A combination of "shaping" and "fading" techniques were used to obtain the desired response (Sloane and MacAulay, 1968). They define shaping as a procedure used when a reinforcer is delivered consequent to those responses that closely approximate the desired terminal response. The experimenter then changed the criteria for acceptable responses, differentially reinforcing only responses that match the desired behavior even more closely. This is repeated until the desired terminal form of response is regularly produced. Sloane and MacAulay (1968) define fading as the technique used to gradually alter the controlling stimuli of a response, so that this response occurs in the presence of the new stimuli.

Social reinforcement, such as nodding the head, shaking the S's hand, patting him on the back, saying "good" or simply repeating the "yes" response, was employed in this study. Each session lasted from five to fifteen minutes depending upon the number of behaviors being shaped and the responses given.

A typical verbal conditioning session progressed as follows: Initially, the author would attempt to establish some degree of rapport by asking the S how he felt and what he had been doing that day. The S was then asked the question, "Have you ever done ____?". If a "yes" response was elicited, then this was reinforced and the question asked again. If a "no" response was elicited, a fading procedure was initiated by questioning the S. At first, questions were asked which had a high probability of eliciting a "yes" response. The wording of these questions was gradually changed to
insure that the terminal response (yes) would not change even when
the original question was asked again. The progression of questions
was generally as follows:

1. Are you certain that you have never done ____?
2. It is possible that you have done ____ , isn't it?
3. I think you must have done ____ sometime, don't you?
4. I have seen you do ____ , haven't I?
5. You have done ____ , haven't you?
6. Have you ever done ____?

Whenever a S emitted a response to the original question such as
"maybe" or "possibly", these responses were reinforced until re-
ponses were elicited that resembled the terminal response more
closely, such as "sometimes" or "once in a while". This procedure,
of differentially reinforcing closer approximations to a "yes"
response, was used until the terminal response of "yes" to the origi-
nal question was obtained.

All except two of the Ss reached the criterion which was a
"yes" response to the question both times it was asked during the
last two sessions of this phase. On the sixth day of this phase,
one S was transferred to an open ward and therefore had to be
removed from the study.

Phase III consisted of six days of a reversal of the verbal con-
ditioning in Phase II. Using a combination of shaping and fading
techniques, Ss were reinforced socially for answering "no" to the
same question as used in Phase II. All Ss reached criterion which
was a "no" response to the question both times it was asked during
the last two sessions of this phase.
RESULTS

In order to determine if a modification occurred in the verbal behavior of the Ss during the conditioning and reversal phases of the study, the number of "yes" and "no" responses were converted to percentages for the individual Ss. The mean percentage of "yes" responses for the group of nine Ss during the baseline (Phase I), conditioning (Phase II), and reversal (Phase III) stages of the experiment are shown in Figure I. The data for individual Ss is presented in Appendix D. The figure shows that the mean percentage of "yes" responses is at zero during the baseline period, increases systematically to a mean percentage of eighty-five during the eight sessions of the conditioning phase, and then decreases systematically to a mean of zero during the five sessions of the reversal phase. The data indicate, therefore, that the operations employed in the verbal conditioning aspect of the present study were effective in modifying the Ss' verbal behavior.

The "inappropriate" response data were analyzed in terms of percentage change relative to the mean of the three day baseline frequency of occurrence for individual Ss. This conversion of the frequency data was dictated by the fact that there were differing numbers of "inappropriate" behaviors for the individual Ss. The mean percentage change relative to the mean frequency of occurrence during the three baseline sessions is shown in Figure 2. The percentage change data for individual Ss is presented in Appendix E.
The figure shows essentially random variation over all sessions of the experiment. An examination of the data for individual Ss also reveals a great deal of variability among Ss. There appears to be no indication, therefore, of any systematic change in the occurrence of "inappropriate" behaviors as the verbal behaviors of the Ss systematically changes.
Fig. 1. Mean number of conditioned responses during baseline (Phase I), conditioning (Phase II), and reversal (Phase III).
Fig. 2. Mean percentage change in "inappropriate" behaviors as a function of conditioning and reversal sessions.
DISCUSSION

The results of the experiment indicate that there is not a behavior change outside the psychotherapy sessions consequent to a verbal behavior change during therapy sessions with chronic schizophrenics. The present study relates favorably to other studies on the relationship between verbal and nonverbal behavior change. (Dinoff, Horner, Kurpiewski, Rickard, and Timmons, 1960; Zax and Klein, 1960; Cowden, Reynolds, and Ford, 1961; Rosenberg, 1961; Lang, 1964; Brodsky, 1967).

The failure to observe a nonverbal behavior change could be "explained" in various ways. Lovaas (1961) says that if therapy is to have a real effect, the terminal verbal cues in the therapy session must be strongly connected to the overt responses which are trying to be modified. The experimenter does not consider this to be a valid explanation because the verbal behavior conditioned in this experiment was directly related to the nonverbal behavioral measures.

Another reason for a failure to observe a nonverbal behavior change could be derived from the nature of schizophrenia itself. Slechta, Gwynn, and Peoples (1963) state that schizophrenics are immune to external stimuli and that their overt behavior is more determined by internal stimuli than is overt behavior of normals. They also say that if positive stimulation from the outside is not important to schizophrenics, it could hardly be expected to alter
their behavior to a significant degree. Lovaas (1964) says that the language of schizophrenics fails to elicit nonverbal behavior. Many of these people will carry out elaborate conversations in the absence of a social audience and at the same time engage in nonverbal interpersonal behavior, such as gestures, grimaces, and aggressions. This type of behavior seems to demonstrate that the nonverbal behavior of schizophrenics is not under discriminative control of their verbal behavior, at least not the usual discriminative control.

The use of awareness as an index of verbal change that should generalize to nonverbal behavior change has been argued against by some authors. Bandura (1961) says that some therapists consider awareness a result of behavior change rather than its cause. Hobbs (1962) states that he seriously doubts the presumed relationship between the achievement of awareness on the part of the client and the achievement of more effective functioning.

These possible explanations of the results of this study do not seem to provide an adequate argument against its major conclusion, which is that there is not a necessary behavior change outside a psychotherapy session consequent to a verbal behavior change during a therapy session with chronic schizophrenics.

The results of the present study seem to cast doubt upon the value of currently popular verbal psychotherapeutic procedures with this population. King, Armitage, and Tilton (1960) in comparing operant therapy, verbal therapy, recreational therapy, and no

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therapy with chronic schizophrenics found that patients undergoing verbal therapy actually became worse in some ways (verbal withdrawal). They also found that the operant therapy group, which had operant motor responses reinforced was more effective than all of the controls in promoting clinical improvement based on ward observation and interview assessments. A more effective approach to obtaining a behavior change with this population seems to concern itself with direct modifications of a patient's nonverbal behavior (Ayllon and Michael, 1959).

The failure to obtain behavioral change consequent to a verbal change, amplifies the necessity for further research in the area of verbal conditioning and psychotherapy to delineate the parameters which produced these findings and to continue the research on direct motor behavior modification.
REFERENCES


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### Subjects' Ages, Diagnoses, and Lengths of Present Hospitalization

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<tr>
<td>II</td>
<td>52</td>
<td>Catatonic Type</td>
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<td>X</td>
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Present Hospitalization: Mean: 14.9 Range: 6-26 Median: 14.5

Ages: Mean: 45.9 Range: 36-55 Median: 46.5
APPENDIX B

"Inappropriate" Behaviors For Each S
(The asterisk indicates a conditioned behavior.)

Subject I

*1. Talks to himself - record a response for each audible speech sound that the patient emits that occurs 5 or more seconds apart. It is not necessary to be able to understand what the patient is saying. (This behavior is the same for all Ss.)

2. Says "Kind of tough, huh Buddy" - record a response each time the patient says this to anyone.

*3. Orders other patients around - record a response each time the patient tells another patient to do something.

4. Chain smokes - record a response for each cigarette or butt that the patient lights from another cigarette.

*5. Puts cigarette on floor - record a response for each cigarette or butt the patient puts on the floor. (This behavior is the same for all Ss.)

*6. Puts ashes on floor - record a response if the patient puts ashes on the floor during the period of one cigarette or butt. (This behavior is the same for all Ss.)

7. Drinks from fountain - record a response for each drink that occurs 5 or more seconds apart. (Two responses consecutively emitted constitute one "inappropriate" response. Each response constitutes an "inappropriate" behavior if it is followed by behavior number 10.)

8. Tears paper from magazine - record a response for each time the patient tears a magazine. Each response must be 5 or more seconds apart.

9. Smokes butt of a cigarette - record one response for each butt the patient smokes.

10. Runs water from fountain - record a response each time the patient turns the water on and watches it.
Appendix B continued

Subject II

*1. Same as S I.

*2. Sits on floor or heels - record a response each time the patient sits on his heels or the floor. Patient must get up before another response can occur.

3. Sits curled up in a chair - record a response whenever the patient curls up in a chair. Patient must get up before another response can occur.

*4. Puts hand in the air - must put hand down before another response occurs.

*5. Same as S I.

*6. Same as S I.

Subject III

1. Same as S I.

2. Whistles to himself - record a response for each whistle that occurs 5 or more seconds apart.

3. Bends over and snaps fingers - record a response each time the patient does this.

*4. "Inappropriate" smiling - record a response each time the patient smiles "inappropriately". Each response must be 5 or more seconds apart.

5. Same as S I.

6. Same as S I.

7. Laughs to himself - record a response for each laugh that occurs 5 or more seconds apart.

Subject IV

*1. Same as S I.
Appendix B continued

Subject IV continued

*2. Sitting with arms around legs - record a response each time the patient sits down and places his arms around his legs. Patient must get up before another response is recorded.

*3. Hand in trousers - record a response each time the patient places his hand under his trousers. Patient must remove his hand before another response can occur.

*4. Sings to himself - record a response each time the patient seems to be singing. Each response must be 5 seconds apart.

5. Same as S I.

6. Same as S I.

*7. Sits on floor - record a response each time the patient sits on the floor or on his heels. Patient must get up before another response is recorded.

*8. Saluting - record a response each time the patient makes a gesture resembling a salute. Each response must be 5 or more seconds apart.

*9. Standing with head lowered - record a response each time the patient stands anywhere with his head lowered. Patient must move before another response can be recorded.

Subject V

1. Same as S I.

*2. "Inappropriate smiling" - record a response each time the patient smiles inappropriately. There must be 5 or more seconds between each response.

3. Emits a croaking sound - record a response each time the patient emits a "clearing the throat" type sound. There must be 5 or more seconds between each response.

4. Stands or sits in the bathroom by himself - record a response each time the patient does this. The patient must leave the bathroom before another response can occur.
Appendix B continued

Subject V continued

5. Same as $I$.

6. Same as $I$.

7. Drinks from fountain - record a response for each drink that occurs 5 or more seconds apart. (Two responses consecutively emitted constitute one "inappropriate" behavior.)

8. Sits on floor other than bathroom - record a response each time the patient sits on the floor or his heels anywhere except the bathroom. Patient must get up before another response can occur.

Subject VI

1. Same as $I$.

*2. Saying "Hello" - record a response each time the patient says "Hello" to anyone.

3. Shaking hands - record a response each time the patient shakes someone's hand.

4. Smokes butt of a cigarette - record one response for each butt the patient smokes.

*5. Same as $I$.

*6. Same as $I$.

7. Drinks from fountain - record a response for each time the patient drinks from the fountain. Each response must be 5 or more seconds apart. (Two responses consecutively emitted constitute one "inappropriate" behavior.)

8. Drinks from faucet - record a response for each drink that occurs 5 or more seconds apart.

Subject VII

*1. Same as $I$. 

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Appendix B continued

Subject VII continued

2. Stands or sits in corner on the floor - record a response each time the patient stands or sits in the corner or on the floor. Patient must move from the corner before another response can occur.

3. Sits on floor by door or wall - record a response each time the patient sits on the floor anywhere except the corner.

4. Compulsively touches objects - record a response each time the patient touches the following objects: wall, window, screen, table, chair, and ashtray.

5. Same as S I.

6. Same as S I.

7. Curls up in a chair - The patient must move from the chair before another response can occur.

8. Lying on the floor - record a response each time the patient lies on the floor. The patient must get up before another response can occur.

Subject VIII

1. Same as S I.

2. Kneels and crosses himself - record a response each time the patient kneels and crosses himself. The patient must get up before another response can occur.

3. Kneeling on the floor - record a response each time the patient kneels on the floor. Patient must get up before another response can occur.

4. Crosses himself while sitting or standing - record a response each time the patient crosses himself while in a sitting or standing position.

*5. Same as S I.

6. Same as S I.
Appendix B continued

Subject VIII: continued

7. Lying or sitting on floor or heels - record a response each time the patient lies or sits on the floor or sits on his heels. Patient must get up before another response can occur.

8. Picks things off floor or ashtray - record a response each time the patient picks up something from the floor or ashtray.

9. Laughs to himself - similar to behavior number one, except laughing.

10. Cleans footstool, mirror, or window - record a response each time one of these items are cleaned. Must be 10 seconds or more between each response.

11. Spits on any object - record a response each time the patient spits on anything.

12. Looks in or puts things in the garbage or ashtray - record a response each time the patient does this.

13. Touches radiator knob - record a response each time the patient touches the knob. Patient must remove hand before another response can be recorded.

14. Sticks paper in mouth or nose - must remove paper before another response can be recorded.

Subject IX

* 1. Same as S I.

2. Holds cigarette in the air - record a response whenever the patient holds a cigarette in the air above his head. Each response must be 10 seconds apart.

3. Laughs to himself - record a response each time the patient laughs to himself. Each response must be 5 or more seconds apart.

4. Holds hand in front of mouth - record a response each time the patient puts his hand in front of his mouth and holds it there for at least 5 seconds. Patient must put his hand down before another response occurs.
Appendix B continued

Subject IX continued

5. Same as S I.

6. Same as S I.

*7. Sitting in chair and moving hands up and down - record a response each time patient does this. Each response must be 5 or more seconds apart.

Subject X

1. Same as S I.

2. Lying on floor - record a response each time the patient lies on the floor. The patient must get up before another response can be recorded.

3. Lying in chair with feet on another chair - record a response each time the patient does this. The patient must get up before another response can be recorded.

4. Chain smokes - record a response for each cigarette or butt that the patient lights from another cigarette or butt.

*5. Same as S I.

*6. Same as S I.

7. Smokes butt of a cigarette - record a response for each butt that the patient smokes.
APPENDIX C

Sample Data Sheet

Observer:  
Time Period:  
Date:  

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<th>Responses Emitted During a Five Minute Period</th>
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33
APPENDIX D

Table 1

Percentages of "yes" responses for each day

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# APPENDIX E

## Table 2

Percentage of response number change from the \( \bar{x} \) of responses during Phase I. The numbers in parentheses indicate the number of "inappropriate" responses for that day.

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