8-1973

Introduction to Behavior Therapy Terminology

Alexandre Pacheo e Silva Nucci

Western Michigan University

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Considering my staying in the United States of America as a foreign student, I want to express my full gratitude to Mr. and Mrs. B. E. Bensinger who accepted me in their home as a member of their own family.

Finally, I want to dedicate, not only this work, but also the whole year of studies in this country, to Roger Bensinger, my dearest friend.

Alexandre Pacheco e Silva Nucci
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Origin of the Project</td>
<td>1</td>
</tr>
<tr>
<td>Purpose and Scope</td>
<td>2</td>
</tr>
<tr>
<td>Sources of Information</td>
<td>4</td>
</tr>
<tr>
<td>Length of the Definitions</td>
<td>5</td>
</tr>
<tr>
<td>Preparation and Refinement of Specialized Lists</td>
<td>5</td>
</tr>
<tr>
<td>Order of the Listing Terms</td>
<td>6</td>
</tr>
<tr>
<td>DEFINITIONS</td>
<td>7</td>
</tr>
<tr>
<td>Accidental Reinforcement</td>
<td>7</td>
</tr>
<tr>
<td>ANALYSIS, BEHAVIORAL</td>
<td>7</td>
</tr>
<tr>
<td>Antecedent Event</td>
<td>11</td>
</tr>
<tr>
<td>ANXIETY</td>
<td>11</td>
</tr>
<tr>
<td>ASSERTIVE TRAINING</td>
<td>12</td>
</tr>
<tr>
<td>ASSESSMENT</td>
<td>13</td>
</tr>
<tr>
<td>Aversion Therapy</td>
<td>16</td>
</tr>
<tr>
<td>Aversive Imagery</td>
<td>16</td>
</tr>
<tr>
<td>Aversive Stimulus</td>
<td>16</td>
</tr>
<tr>
<td>Avoidance Behavior</td>
<td>16</td>
</tr>
<tr>
<td>Avoidance Learning</td>
<td>18</td>
</tr>
<tr>
<td>BASELINE</td>
<td>16</td>
</tr>
<tr>
<td>BASELINE, MULTIPLE</td>
<td>16</td>
</tr>
<tr>
<td>BEHAVIOR, AVOIDANCE</td>
<td>18</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Term</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTRACT, Contingency</td>
<td>41</td>
</tr>
<tr>
<td>CONTROL, ENVIRONMENTAL</td>
<td>46</td>
</tr>
<tr>
<td>COVERANT</td>
<td>22</td>
</tr>
<tr>
<td>COUNTER CONDITIONING</td>
<td>49</td>
</tr>
<tr>
<td>Covert Behavior</td>
<td>51</td>
</tr>
<tr>
<td>Covert Sensitization</td>
<td>53</td>
</tr>
<tr>
<td>Delta Stimulus</td>
<td>56</td>
</tr>
<tr>
<td>DEPRIVATION</td>
<td>58</td>
</tr>
<tr>
<td>DESENSITIZATION, SYSTEMATIC</td>
<td>61</td>
</tr>
<tr>
<td>DIAGNOSIS</td>
<td>63</td>
</tr>
<tr>
<td>Differential Reinforcement</td>
<td>64</td>
</tr>
<tr>
<td>DISCRIMINATION</td>
<td>66</td>
</tr>
<tr>
<td>Discriminative Stimulus</td>
<td>69</td>
</tr>
<tr>
<td>EFFECT, LAW OF</td>
<td>39</td>
</tr>
<tr>
<td>Eliciting Stimulus</td>
<td>40</td>
</tr>
<tr>
<td>Environmental Control</td>
<td>42</td>
</tr>
<tr>
<td>Escape Behavior</td>
<td>44</td>
</tr>
<tr>
<td>Escape Learning</td>
<td>45</td>
</tr>
<tr>
<td>EVENT, ANTECEDENT</td>
<td>61</td>
</tr>
<tr>
<td>EVENT, CONSEQUENT</td>
<td>39</td>
</tr>
<tr>
<td>EXTINCTION</td>
<td>63</td>
</tr>
<tr>
<td>FADING</td>
<td>64</td>
</tr>
<tr>
<td>FEED BACK</td>
<td>67</td>
</tr>
<tr>
<td>FLOODING</td>
<td>70</td>
</tr>
</tbody>
</table>
GENERALIZATION ...................................... 73
Generalized Reinforcer (see REINFORCER, GENERALIZED)
Hierarchy Stimulus (see STIMULUS, HIERARCHY)
IMAGERY, AVERSIVE ................................... 75
IMITATION ............................................. 76
Implosion Therapy (see THERAPY, IMPLOSION)
Incompatible Behavior (see BEHAVIOR, INCOMPATIBLE)
Inhibition, Reciprocal (see COUNTER CONDITIONING)
Instrumental Conditioning (see CONDITIONING, OPERANT)
Intention, Paradoxical (see PARADOXICAL INTENTION)
Intermittent Reinforcement (see REINFORCEMENT, INTERMITTENT)
INTERVENTION PLAN ................................... 30
Law of Effect (see EFFECT, LAW OF)
LEARNING, AVOIDANCE ................................. 18
LEARNING, ESCAPE .................................... 18
LEARNING, VICARIOUS ................................ 76
Medical Model (see MODEL, MEDICAL)
MENTAL HEALTH, COMMUNITY ............................ 79
MODEL .............................................. 83
MODEL, BEHAVIORAL ................................ 56
MODEL, MEDICAL ...................................... 84
MODELING .............................................. 83
MODIFICATION, BEHAVIOR ............................ 88
Modification, Self (see SELF-MODIFICATION)
MOLDING .............................................. 76
<table>
<thead>
<tr>
<th>Term</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple Baseline (see BASELINE, MULTIPLE)</td>
<td></td>
</tr>
<tr>
<td>Negative Reinforcement (see REINFORCEMENT, NEGATIVE)</td>
<td></td>
</tr>
<tr>
<td>Negative Reinforcer (see REINFORCER, NEGATIVE)</td>
<td></td>
</tr>
<tr>
<td>Operant Behavior (see BEHAVIOR, OPERANT)</td>
<td></td>
</tr>
<tr>
<td>Operant Conditioning (see CONDITIONING, OPERANT)</td>
<td></td>
</tr>
<tr>
<td>Operant Reinforcement (see REINFORCEMENT, OPERANT)</td>
<td></td>
</tr>
<tr>
<td>PARADOXICAL INTENTION</td>
<td>90</td>
</tr>
<tr>
<td>Pavlovian Conditioning (see CONDITIONING, RESPONDENT)</td>
<td></td>
</tr>
<tr>
<td>PHOBIA</td>
<td>91</td>
</tr>
<tr>
<td>Plan, Intervention (see INTERVENTION PLAN)</td>
<td></td>
</tr>
<tr>
<td>POINT SYSTEM</td>
<td>94</td>
</tr>
<tr>
<td>Positive Reinforcement (see REINFORCEMENT, POSITIVE)</td>
<td></td>
</tr>
<tr>
<td>Positive Reinforcer (see REINFORCER, POSITIVE)</td>
<td></td>
</tr>
<tr>
<td>PREMACK PRINCIPLE</td>
<td>98</td>
</tr>
<tr>
<td>Primary Reinforcer (see REINFORCER, PRIMARY)</td>
<td></td>
</tr>
<tr>
<td>PROCEDURE, REVERSAL</td>
<td>16</td>
</tr>
<tr>
<td>PROMPTS</td>
<td>100</td>
</tr>
<tr>
<td>PUNISHMENT</td>
<td>101</td>
</tr>
<tr>
<td>Reciprocal Inhibition (see COUNTER CONDITIONING)</td>
<td></td>
</tr>
<tr>
<td>REINFORCEMENT</td>
<td>102</td>
</tr>
<tr>
<td>REINFORCEMENT, ACCIDENTAL</td>
<td>104</td>
</tr>
<tr>
<td>REINFORCEMENT, CONDITIONED</td>
<td>33</td>
</tr>
<tr>
<td>REINFORCEMENT, DIFFERENTIAL</td>
<td>67</td>
</tr>
<tr>
<td>REINFORCEMENT, INTERMITTENT</td>
<td>106</td>
</tr>
<tr>
<td>REINFORCEMENT, NEGATIVE</td>
<td>18</td>
</tr>
<tr>
<td>REINFORCEMENT, OPERANT</td>
<td>37</td>
</tr>
<tr>
<td>Topic</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>REINFORCEMENT, POSITIVE</td>
<td>18</td>
</tr>
<tr>
<td>REINFORCEMENT, SCHEDULES OF</td>
<td>108</td>
</tr>
<tr>
<td>REINFORCEMENT, SOCIAL</td>
<td>110</td>
</tr>
<tr>
<td>REINFORCER</td>
<td>33</td>
</tr>
<tr>
<td>REINFORCER, CONDITIONED</td>
<td>33</td>
</tr>
<tr>
<td>REINFORCER, GENERALIZED</td>
<td>102</td>
</tr>
<tr>
<td>REINFORCER, NEGATIVE</td>
<td>112</td>
</tr>
<tr>
<td>REINFORCER, POSITIVE</td>
<td>112</td>
</tr>
<tr>
<td>REINFORCER, PRIMARY</td>
<td>33</td>
</tr>
<tr>
<td>RELAXATION</td>
<td>115</td>
</tr>
<tr>
<td>RELIABILITY</td>
<td>118</td>
</tr>
<tr>
<td>Replication Therapy</td>
<td></td>
</tr>
<tr>
<td>Respondent Behavior</td>
<td></td>
</tr>
<tr>
<td>Respondent Conditioning</td>
<td></td>
</tr>
<tr>
<td>RESPONSE</td>
<td>123</td>
</tr>
<tr>
<td>RESPONSE, CONDITIONED</td>
<td>125</td>
</tr>
<tr>
<td>RESPONSE COST</td>
<td>126</td>
</tr>
<tr>
<td>RESPONSE, UNCONDITIONED</td>
<td>125</td>
</tr>
<tr>
<td>Reversal Procedure</td>
<td></td>
</tr>
<tr>
<td>SATIATION</td>
<td>128</td>
</tr>
<tr>
<td>Schedules of Reinforcement</td>
<td></td>
</tr>
<tr>
<td>SELF-CONTROL</td>
<td>128</td>
</tr>
<tr>
<td>SELF-MODIFICATION</td>
<td>30</td>
</tr>
<tr>
<td>Sensitization, Covert</td>
<td></td>
</tr>
<tr>
<td>SHAPING</td>
<td>129</td>
</tr>
</tbody>
</table>
INTRODUCTION

Origin of the Project

An original contribution to the field of Psychology is a requirement of the Master's degree program in Behavior Modification of the Psychology Department of Western Michigan University. It seemed that the majority of the students engaged in this same program had been presenting the description of an experiment in Behavior Modification as a fulfillment to this requirement. However, since my first day of class at Western, I had faced a situation that brought me, later, the idea for this present work, which is not an experiment, but it is, I believe, a substantial contribution to the science of Behavior Modification.

As I said, on my first day of class at Western, in the Fall of 1972, I was given a list of definitions of the 30 most common terms used in Behavior Modification. All those definitions were extremely short, out of context and had no examples at all. After reading each one of them a few times I still finished with a sense of vagueness about the meaning of those terms.

Later on, in the course of my studies, I discovered a glossary of behavioral terminology, and I examined it. Although a very good job, this glossary also presented the same kind of deficiency I've found when I had to learn
those 30 terms at the beginning of the Fall semester; they were too short, too specific, totally out of a context and most of the terms without any form of example.

Even though this way of defining terms seemed to follow a standard procedure, I've decided that I wanted to provide definitions within a context and with examples.

Purpose and Scope

The primary purpose of this work is to make available a very comprehensive list of definitions of professional terms in Behavior Therapy that will help students, para-professionals, laymen, and anyone else interested in the matter. Also, by the way the definitions are presented, it is the purpose of this work to make sure that the reader understands the meaning of the term he is looking for and consequently eliminate the vagueness that might follow the reading of a "traditional" definition of a behavioristic term.

Another aim of this work is the Brazilian schools of Psychology to where I intend to return and take it with me to use as a reference guide for shaping future behavior modifiers.

Of course, the professional researcher who reads this paper may not agree with all of the definitions, since through years of research and extensive readings, he may have come up with different definitions of these terms.
However, these readings and researches began with basic source material, and it is this "basic" that I've planned to present here. To swim in deeper waters one must first wade through the shallows.

As shown in Ullmann and Krasner's definition of Behavior Modification (see page 87) this work defines terms related to "the modification of clinical maladaptive behavior" and its specific methodology. For this reason, when possible, I found defined terms used in conjunction with human examples. In some cases, however, because of the difficulty in finding an human example, animal illustrations were used.

Also, because of its "clinical" aspect, the scope of the defined terms in this work was limited to those which are most directly related to Behavior Modification or Behavior Therapy.

Terms like Data, Bias, and other similar ones were left out because they could be found defined in the field of Statistics.

Other terms like Aggressiveness, Homosexuality, Self-destructive behavior, Psychosis, etc., which frequently appear in the Behavior Therapy's publications were left out because they were, already, extensively defined in many other traditional clinical sources.

Finally, terms such as Stimulus, Follow Up, Pre-test, Post-test, were left out because they maintain their ori-
ginal and common meaning and could be found defined in any non-specialized dictionary.

Sources of Information

In order to make this work a really valuable one and avoid my own bias in defining the terms, I've decided to use the definitions originally used by well known researchers in Behavior Modification. As I said before, most of the professionals, after extensive readings, finally came up with definitions that guide the less experienced professionals in their investigations. For example, when I had to find a definition for Relaxation or Systematic Desensitization, I thought that the best source would be the professional who had most experience in the field and who would be considered an expert in this subject, and this man is Dr. Joseph Wolpe.

In some cases, however, this couldn't be accomplished. Sometimes the authors didn't define the term; they would just talk about the subject in a general way without giving, to the reader, the notion of a complete and finished definition. This happened, most of the time, in publications like Journals and specialized magazines. In those cases, I referred to text books which would cite the defined term and their respective authors in a more comprehensive way.

Text books proved to be the best sources of informa-
tion in most of the cases. Books that were a collection of experiments done by many different authors showed the same kind of problems the Journals of Psychology had: the authors used the terms taking for granted that the reader already knew what the terms meant.

Length of the Definitions

The length of the definitions were directly related to two factors: (1) an attempt to provide the complete context from where the reader could understand the meaning of the term, and (2) an example to illustrate this contextual definition. Some of the definitions found in this work came up to be a little too long or a little too short. But in both cases an effort was made to provide them with sufficient context and an example.

Preparation and Refinement of Specialized Lists

The first reference for the preparation of a list of terms to be defined was Kanfer and Phillips' Learning Foundations of Behavior Therapy. Looking at the 915 titles of publications found in the References of that book, and also searching for terms in the Subject Index of the same book, I came up with a list of about 130 terms.

Then I repeated this same procedure with C. M. Franks' Behavior Therapy: Appraisal and Status; and also searched for more terms in O. R. White's Glossary of Behavioral Ter-
minology. About 10 terms were added to the previous list.

Once I had this list of 140 terms, I started considering each term separately and, using the criteria already mentioned in Purpose and Scope (see page 2), I began to eliminate some of them. The final list ended with 100 terms.

Although terms like Pavlovian Conditioning, Respondent Conditioning, and Classical Conditioning might have, to different authors, slightly different connotations, they were grouped under the same definition. The main reason for this is that the purpose of this work is not to go deep into the meaning and subdivisions of each term, but to give the general and most accepted meaning of each one of them.

Order of the Listing Terms

The definitions are arranged alphabetically. As a rule, the compound terms are listed in inverse order, to stress the key word or noun form, for example: Reinforcer, Positive (instead of Positive Reinforcer). For these compound terms a full list of cross reference has been provided in the Table of Contents.
ANALYSIS, BEHAVIORAL


"In order to help the clinician in the collection and organization of information for a behavioral analysis, we have constructed an outline which aims to provide a working model of the patient's behavior at a relatively low level of abstraction. A series of questions are so organized as to yield immediate implications for treatment. This outline has been found useful both in clinical practice and in teaching. Following is a brief summary of the categories in the outline.

1. Analysis of a Problem Situation. (For each patient a detailed analysis is required. For example, a list of behavioral excesses may include specific aggressive acts, hallucinatory behaviors, crying, submission to others in social situations, etc. It is recognized that some behaviors can be viewed as excesses or deficits depending on the vantage point from which the unbalance is observed. For instance, excessive withdrawal and deficient social responsiveness, or excessive social autonomy (nonconformity) and deficient self-inhibitory behavior may be complementary. The particular view taken is of consequence because of its impact on a treatment plan. Regarding cer-
tain behavior as excessively aggressive, to be reduced by constraints, clearly differs from regarding the same behavior as a deficit in self-control, subject to increase by training and treatment).

The patient's major complaints are categorized into classes of behavioral excesses and deficits. For each excess or deficit the dimensions of frequency, intensity, duration, appropriateness of form, and stimulus conditions are described. In content, the response classes represent the major targets of the therapeutic intervention. As an additional indispensable feature, the behavioral assets of the patient are listed for utilization in therapy.

2. Clarification of the Problem Situation.

Here we consider people and circumstances which tend to maintain the problem behaviors, and the consequences of these behaviors to the patient and to others in his environment. Attention is given also to the consequences of changes in these behaviors which may result from psychiatric intervention.

3. Motivational Analysis.

Since reinforcing stimuli are idiosyncratic and depend for their effect on a number of unique parameters for each person, a hierarchy of particular persons, events and objects which serve as reinforcers is established for each patient. Included in this hierarchy are those reinforcing events which facilitate approach behaviors as well as those
which, because of their aversiveness, prompt avoidance responses. This information has as its purpose to lay plans for utilization of various reinforcers in prescription of a specific behavior therapy program for the patient, and to permit utilization of appropriate reinforcing behaviors by the therapist and significant others in the patient's social environment.

4. Developmental Analysis.

Questions are asked about the patient's biological equipment, his socio-cultural experiences, and characteristic behavioral development. They are phrased in such a way as (a) to evoke descriptions of his habitual behavior at various chronological stages of his life, (b) to relate specific new stimulus conditions to noticeable changes from his habitual behavior, and (c) to relate such altered behavior and other residuals of biological and socio-cultural events to the present problem.

5. Analysis of Self-Control.

This section examines both the methods and the degree of self-control exercised by the patient in his daily life. Persons, events, or institutions which have successfully reinforced self-controlling behaviors are considered. The deficits or excesses of self-control are evaluated in relation to their importances as therapeutic targets and to their utilization in a therapeutic program.
6. **Analysis of Social Relationships.**

Examination of the patient's social network is carried out to evaluate the significance of people in the patient's environment who have some influence over the problematic behaviors, or who in turn are influenced by the patient for his own satisfactions. These interpersonal relationships are viewed in order to plan the potential participation of significant others in a treatment program, based on the principles of behavior modification. The review also helps the therapist to consider the range of actual social relationships in which the patient needs to function.

7. **Analysis of the Socio-Cultural-Physical Environment.**

In this section we add to the preceding analysis of the patient's behavior as an individual, consideration of the norms in his environment. Agreements and discrepancies between the patient's idiosyncratic life patterns and the norms in his environment are defined so that the importance of these factors can be decided in formulating treatment goals which allow as explicitly for the patient's needs for the pressures of his social environment.

The preceding outline has its purpose to achieve definition of a patient's problem in a manner which suggests specific treatment operations, or that none are feasible, and specific behaviors as targets for modification. Therefore, the formulation is action oriented. It can be used as a guide for the initial collection of information, as a
device for organizing available data, or as a design for treatment."

ANXIETY


"The construct of anxiety has been anchored to many different observations. First, anxiety has often been defined on the basis of a person's verbal description of an internal state. These verbal responses are measured by means of inventories or interviews or are inferred from projective personality tests. Some inventories are also constructed that the content of specific items can be considered irrelevant, since the scores correlate well with other behavioral measures of anxiety. The validity of the tests rests on the congruence between patterns of answers on the verbal items and patterns obtained in the standardization sample of patients with known behavior characteristics. In the Minnesota Multiphasic Personality Inventory (MMPI) test, for example, the main emphasis is on correspondence of the patient's pattern of True and False answers with the patterns given by individuals with known behavior disorders. An analysis of the patient's self-descriptive statements is secondary and rarely done. Other inventories, interview procedures, and personality tests gives full credence to the person's description of his internal state as if it were a
directly observed event. A second approach to the definition of anxiety is by assessment of physiological and behavioral patterns. The magnitude, duration, threshold, or variation in these responses to standardized stimuli yields a pattern that is characterized as an indicant of anxiety. A third approach anchors the definition of anxiety in experimental operations. For example, Skinner and his collaborators define anxiety as the behavior pattern observed during the interval between a warning signal and an unavoidable strong aversive stimulus."

REFERENCE


ASSERITIVE TRAINING


"In teaching assertive training the individual is instructed to assert himself when he feels an injustice has been done to him. Persons who need assertive training are inhibited by anxiety from asserting themselves in appropriate situations. The $\text{SCR}^{(1)}$ is the assertive response and the $\text{RC}^{(2)}$ is anxiety. If instructions alone are not suffi-

(1) $\text{SCR}$ - Self-controlling response
(2) $\text{RC}$ - Response to be controlled
cient to have the individual make the SCR, then behavioral rehearsals (Salter, 1949; Wolpe, 1958) and desensitization (Cautela, 1966b) can be used to facilitate the assertive response."

REFERENCES


ASSESSMENT


"We have stressed the fundamental unity between the experimenter's activities and those of the assessor and therapist, but there is a critical difference between them. In experiments it is the experimenter who thinks about what he wants to study; he selects and defines his independent variable and the dependent measures for assessing the effects of his treatment manipulations. He may begin with more interest in the dependent variable — for example, self-control or aggression — and inquire into the effects of various manipulations on it. Or he can start by focusing on the independent variable, say the effects of expo-
sure to particular influence procedures. The experimenter must select for measurement and manipulation events that represent those in which he is interested and with which he claims to be concerned. The operations for specifying the exact content and measurement of the variables in the experiment are assessments and they entail many of the same steps and problems involved in the clinical assessment of the individual case.

In most clinical situations, in contrast, it is the subject or client who must define the problematic behaviors and the objectives he seeks. In that sense he assumes something of the role of the scientist who must delineate his problems. The most urgent goal in assessment is to design the treatments required by the client's problems. The person usually presents a global description of general malaise or perhaps numerous complaints in a variety of areas; consequently the first assessment task is to develop a priority list of specific problems and to delineate the appropriate treatment for each. This presupposes that different problems require different treatment and that specific treatments can be designed to fit them — an assumption that is basic to social behavior theory.

(...) Assessments to change social behavior have several phases. The problem behaviors and the desired objectives have to be defined with clear behavioral ref-
erents. Next it is necessary to describe the exact circumstances provoking the problem behaviors and to identify the conditions maintaining them. In light of this information the particular behavior-change operations most likely to produce the desired objectives must be selected. Finally, the efficacy of the treatments themselves has to be evaluated.

Clients usually are not behaviorists and they do not describe themselves and their difficulties with operational definitions. Some proponents of operant conditioning and reinforcement theory have assumed erroneously that verbal reports from the subject about stimulus meanings do not constitute proper data. Yet, it is perfectly appropriate, and usually essential, for the assessor to verbally explore with the subject his reactions to symbolically presented, hypothetical stimulus conditions. The assessor's eschewal of trait-state theories does not imply that he should not use reports from the person, either about his history or about the meaning that stimulus conditions have acquired for him. There is no hazard here as long as these reports are not taken as automatic revelations of nonverbal nontest behavior, and as long as relations between the individual's reports about his reactions to various events and his other behaviors are treated as an empirical issue."
"There are at least two designs commonly used to demonstrate reliable control of an important behavioral change. The first can be referred to as the "reversal" technique. Here a behavior is measured, and the measure is examined over time until its stability is clear. Then, the experimental variable is discontinued or altered, to see if the behavioral change just brought about depends on it. If so, the behavioral change should be lost or diminished (thus the term "reversal"). The experimental variable then is applied again, to see if the behavioral change can be recovered. If it can, it is pursued further, since this is applied research and the behavioral change sought is an important one. It may be reversed briefly again, and yet again, if the setting in which the behavior takes place allows further reversals. But the setting may be a school system or a family, and continued reversals may not be allowed. They may appear in themselves to be detrimental to the subject if pursued too often. (Whether they are in fact detrimental is likely to remain an unexamined question so long as the social setting in which the behavior is
studied dictates against using them repeatedly. Indeed, it may be that repeated reversals in some applications have a positive effect on the subject, possibly contributing to the discrimination of relevant stimuli involved in the problem.)

In using the reversal technique, the experimenter is attempting to show that an analysis of the behavior is at hand: that whenever he applies a certain variable, the behavior is produced, and whenever he removes this variable, the behavior is lost. Yet applied behavior analysis is exactly the kind of research which can make this technique self-defeating in time. Application typically means producing valuable behavior; valuable behavior usually meets extra-experimental reinforcement in a social setting; thus, valuable behavior, once set up, may no longer be dependent upon the experimental technique which created it. Consequently, the number of reversals possible in applied studies may be limited by the nature of the social setting in which the behavior takes place, in more ways than one.

An alternative to the reversal technique may be called the "multiple baseline" technique. This alternative may be of particular value when a behavior appears to be irreversible or when reversing the behavior is undesirable. In the multiple-baseline technique, a number of responses are identified and measured over time to provide baselines against which changes can be evaluated. With these base-
lines established, the experimenter then applies an experimental variable to one of the behaviors, produces a change in it, and perhaps notes little or no change in the other baselines. If so, rather than reversing the just-produced change, he instead applies the experimental variable to one of the other, as yet unchanged, responses. If it changes at that point, evidence is accruing that the experimental variable is indeed effective, and that the prior change was not simply a matter of coincidence. The variable then may be applied to still another response, and so on. The experimenter is attempting to show that he has a reliable experimental variable, in that each behavior changes maximally only when the experimental variable is applied to it.

(...) The preceding discussion has been aimed at the problem of reliability: whether or not a certain procedure was responsible for a corresponding behavioral change."

BEHAVIOR, AVOIDANCE
BEHAVIOR, ESCAPE
LEARNING, AVOIDANCE
LEARNING, ESCAPE
REINFORCEMENT, NEGATIVE
REINFORCEMENT, POSITIVE
Homme, L. & Tosti, D. Behavior technology: Motivation and
"Positive and Negative Reinforcement."

Recall that a reinforcing event is one that increases the frequency of the behavior it closely follows. For example, a baby cries (responds) and receive a bottle (positive reinforcement). The baby's crying behavior is thus strengthened (is more resistant to extinction). But the same situation from the viewpoint of the mother looks quite different; she finds the baby's crying aversive and she would like to terminate it. When she makes the response of feeding the baby, the aversive stimulation of his crying is terminated and her behavior is thus reinforced.

(...). It is important that the behaviors being emitted by both the mother and the child are being increased in strength. Reinforcement, either positive or negative, always strengthens behavior. It is erroneous to think of the effects of aversive stimulation only in terms of punishment. Punishment is used in trying to eliminate or suppress a behavior, not to reinforce it. Remember:

**Positive Reinforcement**

An event that increases the probability of response when its occurrence is contingent upon the emission of that response.

**Negative Reinforcement**

An event that increases the probability of response
when it's termination is contingent upon the emission of that response.

**Escape Learning**

Because of its convenience and the precision with which it can be administered, mild electric shock is often used in the study of behavior in relation to aversive stimulation. Suppose a Skinner Box is equipped with a grid floor through which shock can be administered, and the box is wired so that if the rat presses the bar the shock will be turned off. When the rat learns to escape the shock by bar pressing, he is said to be exhibiting escape conditioning. The response that terminated the shock was negatively reinforced.

(...) The reason we refer to this effect as negative reinforcement is because the consequent condition is the removal or avoidance of some event, as opposed to the occurrence of some event, as in positive reinforcement. Our lives are full of behaviors affected by negative reinforcement — turning off the alarm clock, scratching an itch, turning down a loud radio; are all examples of escape responses controlled by negative reinforcement.

**Avoidance Learning**

The technical term for the type of acquisition discussed in the previous section is escape learning. The animal has learned to escape the shock by pressing the bar. The mother is escaping from the aversiveness of the baby's
crying by feeding him. Most mothers, however, soon learn that they can avoid the baby's crying if they learn to read the baby's signals. When the baby wakes up, he usually grunts and fusses before crying. A mother soon learns that she can avoid a crying tantrum if she feeds the child immediately. The fussing noise is called a threat stimulus. It is the antecedent event that signals that the aversive event is about to occur.

In the laboratory a distinctive light, a buzzer, or any stimulus that proceeds the shock will quickly become a threat stimulus. Suppose we take our rat who learned to press the bar to escape shock and arrange matters so that he hears a tone a few seconds before the shock. We could set it up so that if the rat presses the bar when the tone comes on, he avoids the shock entirely.

(...) avoidance learning results from escape learning. The only difference is that the organism makes the response before the primary aversive stimulus occurs and thus avoids it.

The threat stimulus can also be viewed as an aversive stimulus. Since it is paired with the shock, the tone soon takes on aversive properties too; it is then called the condition aversive stimulus. Viewing escape and avoidance learning from this standpoint reveals that behaviorally they are the same. The response in both cases terminates an aversive stimulus.
Behaviors reinforced in both avoidance and escape learning condition very quickly and become very strong. Another property of behavior generated and maintained by aversive control is worth noting. Ordinarily the behavior is highly stereotyped. In escape conditioning, for example, the rat will typically crouch by the bar, ready to press as soon as the shock comes on. To explore his environment any distance from the bar is risking a longer shock. ("The heck with exploring my environment. I'm going to play safe as I can.")."

COVERANT
BEHAVIOR, COVERT


"The word coverant is simply a contraction of covert operant. Since the word operant comes from the fact that it refers to a response that operates on the environment (Skinner, 1938), it may seem strange that any covert behavior should be called an operant. Yet, as will be clear later, if contingencies are properly managed, coverants do indeed have environmental consequences. But the main reason for emphasizing that the topic under discussion is some kind of operant is to emphasize that the responses discussed here are not parts of reflexes, nor are they
states of the organism.

Coverants are events the layman calls mental. These include thinking, imagining, ruminating, reflecting, relaxing, daydreaming, fantasizing, and so forth. Difficulties in the control of one or the other of the coverant class undoubtedly underlies a good many behavior or personality disorders\(^{(1)}\). Even if this is only partially true, agreement can probably be reached that these coverants are important. If this is so, why have not operant conditioners paid more attention to them?

The development of a technology for controlling the occurrence of private events such as these has been held back by two problems that are no longer problems:

1. the difficulties in the detection of the occurrence or nonoccurrence of the response because of difficulties in the description of the response's topography, and

2. the availability and control of reinforcers contingent upon the response.

REFERENCE


\(^{(1)}\) Because emotional disorders more than likely involve behaviors with both respondent and operant components, let us avoid complications by restricting the discussion, for the time being, to those responses relatively free of respondent components.
"Even when your problem seems to be ridding yourself or an old, undesirable habit, you are actually concerned with the choice of new behavior. In these cases, the use of punishment might occur to you. But this might be an incorrect procedure. Even if you feel that your problem is that you too often engage in some undesirable behavior, it is usually true that the best way to eliminate that undesirable behavior is to find some alternative incompatible, desired behavior, that you can seek to increase via positive reinforcement, and, in this way automatically decrease the undesired behavior.

A young woman who was bothered by too-frequent arguments with her father began to observe her own behavior. She discovered a chain of events that usually went like this: her father would make some comment about some aspect of her behavior that seemed to bother him (for example, he thought she came in too late from her dates) and she would usually respond with a frown and comment that he should mind his own business. This would enrage him, and they would be off to another bitter argument. She knew that her father basically loved her and that he was simply having a difficult time adjusting to her new ma-
turity, and its prerogatives. She reasoned that if she substituted kind remarks and a smile when he opened up some topic about her behavior, they would then be able to discuss it in a more friendly fashion. Instead of setting out to decrease frowning and unkind comments to her father, she set out to increase smiling and kind comments to him.

Thereafter, when he made some remark about her behavior, she would smile at him and strive to pleasantly disagree with his comment. (Of course, she reinforced her new behavior.) Increasing the desirable behavior had, the effect of calming her father, and they progressed through a series of amicable conversations to a new understanding.

This approach of increasing some incompatible behavior is better than attacking an undesirable behavior by trying to extinguish or punish it. (The problem associated with self-punishment will be discussed later.)

Consider the girl who always gets nervous when she has to talk with young men. She feels shy and tends to withdraw from conversations. She could set out to decrease "withdrawing from conversations" — considering this to be an undesirable behavior — and she might conclude that she will have to punish herself for withdrawing. Doing so would be a serious mistake. Even if it were possible to punish herself for withdrawing, this would have an unfortunate effect on her emotional problem: she still would feel nervous, shy, tongue-tied when men were around, and
she would not have learned any of the new social skills required to reach her goal. This would increase the likelihood that she would be punished by rejection and disappointment in her interactions with men. This punishment, coupled with her own self-inflicted punishment, would increase her problem by strengthening the negative emotional conditioning to such situations.

The use of incompatible responses here would involve rewarding herself for staying and talking. The staying and talking itself should be shaped, of course, in small steps that could provide success experiences. Thus, as this example shows, changing the way you define your problems can help you find a way to use positive reinforcement rather than punishment."

BEHAVIOR, OPERANT


"The classification of behaviors is based on whether or not the behavior has an original, controlling, antecedent stimulus. Respondent behaviors do: they are called "respondent" just because they occur in response to some stimulus. Those that do not have an original, controlling antecedent are called operant behaviors. They are called "operant" because their role is to operate on our environment — to do things to it or in it."
The dictionary defines "to operate" as "to perform an act, to function, to produce an effect." Through operant behaviors we function, act, and produce effects in our environment.

Operant behaviors usually involve the striped muscles and the central nervous system. They vary widely from individual to individual, even within the same species. Operants are behaviors for which we generally assume conscious control; they are not automatic. Operant behaviors are felt to be "free", subject to our own volition. We generally think "can't help it" if we are afraid, angry, sexually aroused, or startled. But we feel that we can choose to walk, to talk; perhaps to think, to engage in most of the complicated behaviors that are the fabric of our daily lives.

The distinction between respondents and operants is not as clear and precise as this discussion seems to indicate. Indeed, psychologists are now studying the relationships between respondent and operant behaviors and finding that they are most intimately connected (Miller, 1969; Di Cara, 1970; Staats, 1968). But the distinction remains very useful because it points up two quite different relationships to situations. Operants are learned and maintained primarily by consequent stimuli rather than by antecedents. A set of principles describing how operant behaviors are acquired follows. First, however, a
brief summary of the points covered so far will help you remember the meaning of the terms used and the relationships between the ideas they represent."

REFERENCES


BEHAVIOR, RESPONDENT

CONDITIONING, RESPONDENT (1)


"Some behaviors are "automatically" controlled by antecedent stimuli. When the knee tendon is struck lightly the behavior of leg extension follows automatically. The antecedent stimulus of striking has control over this reflex. A fleck on the mouth produces salivation automatically from the earliest hours of life. Behaviors for which there are original, controlling, antecedent stimuli are sometimes called reflexes. Man has fewer of these automatic behaviors than organisms with less complicated nervous systems, but even for us, they are numerous."

(1) Or CONDITIONING, CLASSICAL; or CONDITIONING, PAVLOVIAN
Here is a small experiment that will illustrate one of your reflexive responses. Have someone agree to surprise you with a sudden loud noise. For example, ask a friend to slam a book onto a table sometime within a fifteen-minute period, but when you seem to expect it least. Observe your reactions: you will tense, whip around, blink. This is reflexive; the stimulus is sufficient to cause it. Only repeated familiarity with the stimulus will allow the behavior to fade. But notice too that there is an emotional component to your reaction. There is a feeling of arousal and emotional fullness, a disconfort that is much like a small fear reaction that reaches its peak a second or two after the stimulus and then gradually subsides.

This experiment is useful because it illustrates the control of the antecedent stimulus over emotional reaction. Indeed, the class of behaviors we are now discussing - the automatic ones that are controlled by antecedents - also includes many emotional reactions. The behaviors in this class have certain properties; for example, they are largely controlled by the autonomic nervous system, they involve smooth muscles, and they are highly similar among individuals of the same species. These behaviors are sometimes called respondent behaviors because they occur originally in response to the antecedent stimulus.

For our purpose, the most important characteristic common to all respondent behaviors is that there are
original antecedent stimuli adequate to produce the behavior. The laws which govern the learning of this class of behaviors describe relationship among the antecedent stimuli.

While an unexpected loud noise is an adequate stimulus for fear reactions from the earliest days of our lives, we certainly learn to be afraid of many other things that are not originally controlling stimuli: tests or examinations, walking into a crowded room, snakes, spiders, being embarrassed. How do these new stimuli gain control over our reaction? The process is one that psychologists call respondent conditioning. It involves a pairing of the original stimulus with the new one, so that they occur together: the individual reacts automatically to the original stimulus in the presence of the new (or conditioned) stimulus. After a number of these occurrences he will react to the new conditioned stimulus alone in nearly the same way he reacts to the original stimulus. In this way, the automatic reactions can be transferred to many new conditioned stimuli, according to the way that antecedent stimuli happen to occur together."
"Characteristics of self-modification

Self-modification has these characteristics:

1. It concentrates on behaviors.
2. It applies the laws of learning.
3. There is heavy emphasis on positive reinforcement.
4. If possible, the project is planned so that the new learning occurs in real-life situations.
5. The person attempting self-modification designs and executes his own program.

One of the most effective self-modification techniques uses the principle of positive reinforcement. This technique involves arranging situations so that desirable behavior is positively reinforced and unwanted behavior is not reinforced. In this way, the desirable behaviors are increased and the undesirable ones are decreased.

The person engaging in self-modification works out a plan to change the course of events in his life. This is called an intervention plan. Recall that certain situations act as cues, or signals, for behavior. An intervention plan calls for reinforcing desirable behaviors in the presence of our real-life cues. This allows the cues and the behaviors to become closely associated with one another, thus solidifying their relationship.

Contingent reinforcement in self-modification

How do we use positive reinforcement in self-modifi-
cation? The basic principle is that the positive reinforcer is made contingent on the desired behavior. The idea of contingency is very important. A contingent reinforcer is one that is delivered after, and only after, a specified response. The response leads to the reinforcer. A reinforcer can be expected to bring about improvement only if it is made contingent on an improved response.

If you gain a positive reinforcer whether or not you perform some desirable behavior, then that reinforcer will not affect the behavior. If you can gain the reinforcer only by first performing some behavior, then the behavior will be strengthened - that is, it will be more likely to occur again. Thus, it is the contingent relationship that is important, not the positive reinforcer itself.

**Steps in self-modification**

The behavior that you choose to modify is often called the target behavior. The target behavior can be some undesirable behavior that you want to eliminate, or some desirable behavior that you want to increase.

There is a definite sequence in self-modification. Most self-modification projects can be divided into four phases. These are:

1. **Defining the problem in terms of behavior in specific situations.**

2. **Making observations on how often the target behavior occurs, the antecedents that precede it, and the consequences that follow it.**
3. Forming a plan to intervene by contingently reinforcing some desirable behavior and by arranging situations to increase your chances of performing desirable behaviors.

4. Maintaining, adjusting, and finally terminating the intervention program.

CHAIN
REINFORCEMENT, CONDITIONED
REINFORCER
REINFORCER, CONDITIONED (Sr)
REINFORCER, PRIMARY (Sρ)
STIMULUS, CONDITIONED
STIMULUS, DELTA (SΔ)
STIMULUS, DISCRIMINATIVE (Sδ)
STIMULUS, ELICITING


"Psychologists have long been interested in studying the development and maintenance of long and orderly sequence of behavior. Human behavior provides many examples of such sequences. Even relatively simple motor skills, such as throwing a ball, comprise complex responses sequences. More advanced skills, such as playing the piano, comprise intricate sequences of stimuli and finely graded responses occurring at almost incredible speeds. This area of study has traditionally been called chaining, and the
sequences themselves are called chains.

The concept of chaining was apparently introduced by physiologists studying reflexes that followed one another in rapid succession (for example, Exner, 1894; Loeb, 1900; Sherrington, 1906). A typical reflex chain has been described by Sherrington:

The dart reflex of the frog's tongue provoked by the seen fly provides, if successful, the stimulus (contact with the mucosa of the mouth) which provokes closure of the mouth and this probably insures the stimulus for ensuing deglutition, and so on (1906, p. 182).

The essential characteristic of this reflex chain is that each of the successive stimuli elicits a response. If the sequence is interrupted at any point, it cannot subsequently be resumed.

(...). The concept of chaining was markedly modified by Skinner (1938). Skinner's law of behavior, which were modeled on Sherrington's laws of reflexes, included the following law of behavior: "The response of one reflex may constitute or produce the eliciting or discriminative stimulus of another" (Skinner, 1938, p. 32). The distinction between eliciting and discriminative stimuli reflects Skinner's distinction between respondent (Pavlovian) conditioning and operant conditioning. An eliciting stimulus is consistently followed by a correlated response (Skinner, 1938); for example, "food-in-the-mouth" is an eliciting stimulus for salivation. In respondent conditioning, a
stimulus that is temporally paired with an eliciting stimulus will also elicit the response; for example, a tone that has been paired with food-in-the-mouth will elicit salivation. The tone is called a conditioned stimulus. If emitted responses are reinforced only when a light is present, responding will occur only when the light is present. The light is called a discriminative stimulus; that is, it is a stimulus in the presence of which an operant response is reinforced. Skinner (1938, p. 242) suggested that either a conditioned stimulus or a discriminative stimulus could be a conditioned reinforcing stimulus. Thus, the successive stimuli in a chain could be conditioned stimuli or discriminative stimuli and it would be conditioned reinforcing function of these stimuli that enables them to develop and maintain a chain.

Before proceeding to experimental analysis of chaining and conditioned reinforcement, it is necessary to consider the concept of reinforcement in more detail. A positive reinforcing stimulus (reinforcer) increases the probability of occurrence of that class of response that precedes its presentation; the presentation of a positive reinforcing stimulus is positive reinforcement. A primary reinforcer is a stimulus whose reinforcing properties do not depend upon a history of conditioning; it will be a reinforcer for most members of a given species. A conditioned reinforcer is a stimulus whose reinforcing properties are
established by conditioning; it will be a reinforcer for only those members of a species who have been exposed to a specific conditioning procedure.

(...) a discriminative stimulus (SD) is (...) correlated with a schedule in which either primary reinforcement or conditioned reinforcement is contingent upon the occurrence of an operant response. A stimulus in the presence of which reinforcement never occurs will be called an S^A. It is important to note that while the present definitions of S^A and SD are similar to those of Skinner (1938), Keller and Schoenfeld (1950), and Ferster and Skinner (1957), they do not include all schedules with which a stimulus might be correlated. At the present time there is no convenient term for a stimulus that is correlated with a schedule in which reinforcement occurs independently of responses, or with a schedule in which reinforcement is contingent upon not responding."

REFERENCES


CONDITIONING, OPERANT

REINFORCEMENT, OPERANT


"The term "learning" may profitably be saved in its traditional sense to describe the reassortment of responses in a complex situation. Terms for the process of stamping in may borrowed from Pavlov's analysis of the conditioned reflex. Pavlov himself called all events which strengthened behavior "reinforcement" and all the resulting changes "conditioning". In the Pavlovian experiment, however, a reinforcer is paired with a stimulus; whereas in operant behavior it is contingent upon a response. Operant reinforcement is therefore a separate process and requires a separate analysis. In both cases, the strengthening of behavior which results from reinforcement is appropriately called "conditioning". In operant conditioning we are "strengthen an operant in the sense of making a response more probable or, in actual fact, more frequent". In Pavlovian or "respondent" conditioning we simply increase the magnitude of the response elicited by the conditioned stimulus and shorten the time which elapses between stimulus and response. (We note, incidentally, that these

(1) Or CONDITIONING, INSTRUMENTAL
cases exhaust the possibilities: an organism is conditioned when a reinforcer (1) accompanies another stimulus or (2) follows upon the organism's own behavior. Any event which does neither has no effect in changing a probability of response). In the pigeon experiment(1), then, food is the reinforcer and presenting food when a response is emitted is the reinforcement. The operant is defined by the property upon which reinforcement is contingent — the height to which the head must be raised. The change in frequency with which the head is lifted to this height is the process of operant conditioning.

While we are awake, we act upon the environment constantly, and many of the consequences of our actions are reinforcing. Through operant conditioning the environment

(1) We select a relatively simple bit of behavior which may be freely and rapidly repeated, and which is easily observed and recorded. If our experimental subject is a pigeon, for example, the behavior of raising the head above a given height is convenient. This may be observed by sighting across the pigeon's head at a scale on the far wall of the box. We first study the height at which the head is normally held and select some line on the scale which is reached only infrequently, keeping our eye on the scale we then begin to open the food tray very quickly whenever the head rises above the line. If the experiment is conducted according to specifications, the result is invariable: we observe an immediate change in the frequency with which the head crosses the line. We also observe, and this is of some importance theoretically, that higher lines are now being crossed. We may advance almost immediately to a higher line in determining when food is to be presented. In a minute or two, the bird's posture has changed so that the top of the head seldom falls below the line which we first chose.
builds the basic repertoire with which we keep our balance, walk, play games, handle instruments and tools, talk, write, sail a boat, drive a car, or fly a plane. A change in the environment - a new car, a new friend, a new field of interest, a new job, a new location - may find us unprepared, but our behavior usually adjusts quickly as we acquire new responses and discard old."

CONSEQUENCE

EFFECT, LAW OF

EVENT, CONSEQUENTIAL


"Skinner gave central importance to the consequences by his emphasis on reinforcement in operant conditioning. However, in order to avoid the circularity implicit in the Law of Effect(1) and its later reformulations, Skinner has defined consequence purely in terms of an empirical relationship. Any immediate consequent event that has the

(1) All learning theories recognize the relevance of a response's consequence for the subsequent probability of that response. The best known statement of the relation of the consequence to response occurrence was given by Thorndike's Law of Effect. This principle asserted that satisfactory consequences tend to increase response strength while unsatisfactory consequences tend to decrease it. Contemporary learning theorists, however, have rejected Thorndike's inherently subjective-frame of reference in which the consequence of a response must be registered by the organism as pleasant or unpleasant.
effect of changing the probability of the preceding re-
sponse is defined as a reinforcing stimulus for that re-
sponse. This definition resolves the dilemma of establish-
ing long lists of needs and drives in human organisms.
But its problems lie in the opposite direction. The ef-
ficiveness of a reinforcing stimulus for a given response
varies as a function of all of the components in the be-
behavioral equation. For instance, a parental kiss may serve
to reinforce behavior of a four-year-old but may have the
opposite effect when bestowed upon a teenager in front of
his friends. Even a reinforcing stimulus that appears to
have a fairly constant physical relationship to an organ-
ism's activity may produce opposing effects under changing
conditions. It has been found, for example, that rats will
increase their rate of bar pressing in a Skinner box when
such behavior results in lighting a dark cage. Rats will
also increase bar pressing that turns off a light of sim-
ilar intensity in an illuminated cage. Thus, Skinner's em-
pirical definition faces the investigator with the task of
constructing lists of reinforcing stimuli appropriate only
for highly specific conditions for individual organisms. In
fact, in application to operant learning methods to behav-
ior modification it must constantly be remembered that a
particular event selected as a potential reinforcing stim-
ulus can be so defined with certainty only after it suc-
ceeds in changing the probability of the preceding re-

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response. Although such reinforcers as food, money, and social approval may be durable in effect over a long period of time and across many people situations, their effects can be changed by altered environmental features. Since it is also not always possible to eliminate the presence of other factors that may have effected response probabilities, a post hoc definition that depends only on response probability changes is not completely satisfactory."

CONTINGENCY CONTRACT

"A major problem faced by behavior managers has been that of motivating others to perform tasks whose desirability was determined by society. Traditionally, negative contingency contracts have been used to achieve this goal. The "contract" in such cases has been: "In order to avoid punishment, you must perform such and such task." The method advocated in this program is, on the other hand, the use of positive contingency contracting. The contract in this case takes the form: "As soon as you demonstrate that you have learned a little more, you may do something that is even more exciting", or in other words, "As soon as you have done some part of X, you may do Y."
(...)

Rule 1. The contract must provide for immediate reinforcement. This rule must especially be observed when the learner is introduced to contracting. Initial contracts should demand a small bit of behavior, and then ensure a progress check to see whether the behavior was executed to the contractor's specifications. If this has been done, the reward should be offered immediately. It is important that the presentation of the reinforcer be contingent only on the adequate performance of the behavior and not, for example, on the passage of time. Contracting will go well as long as the performance-reinforcer relationship is respected.

Rule 2. Initial contracts must call for and reinforce small approximations. If the initial performance requested from the learner is a small, simple-to-perform approximation to the final performance desired, no difficulties will be encountered. If, on the other hand, the performance requested is too precise, and too difficult for the learner to perform, no amount of reinforcement will help. A major fault with intuitive contingency contracting is that the intuitive contingency manager does not settle for approximations. He is likely to say: "Clean your room," rather than, "First put your shoes in the closet." Or "Do all the arithmetic problems at the end of the chapter correctly, and then you may watch a movie." The systematic contingency manager is more likely to say, "Do the
first 2 problems correctly, and then we will watch a movie for 5 minutes." If the learner were to be rewarded only for expert performances at the start, he would never obtain the offered reinforcer and would more than likely void the contract.

Rule 3. Reinforce frequently with small amounts. It is more effective to give frequent, small reinforcements than a few large ones. As Rule 2 indicates, this is of particular importance early in the contracting procedure.

Rule 4. The contract must call for and reward accomplishment rather than obedience. Thus the contract should say, "If you accomplish such and such, you will be rewarded with such and such," not, "If you do what I tell you to do, I will reward you with such and such." Reward for accomplishment leads to independence. Reward for obedience leads only to continued dependence on the person to whom the learner becomes obedient.

Rule 5. Reward the performance after it occurs. At first glance this is the most self-evident of all the rules: first some task behavior, then some reinforcing responses or reinforcing stimuli. This rule must be taken much more seriously than is usually the case. With contingency management the "first work, then play" sequence does not occur just once, twice, or three times a day. The task and reinforcing events are broken down into small components, so that the sequence will occur dozens of times each day.
When one observes the normal order of events, it is easy to discriminate how frequently the order is reversed. For example, "Just one more game of cards" (a reinforcing activity), "then you've got to do your homework" (a task event). Or, "Stop watching television" (a reinforcing event), "and carry out this trash" (a task event). The examples illustrate that these events do not, by themselves, automatically get broken down into small units and arranged in the correct order.

Rule 5. Attempt to impose a criterion of quality as well as of quantity. Even in the laboratory the quality of the response is often a factor. If the rat doesn't press the bar hard enough, no food pellets will be delivered. In human affairs a criterion of excellence is almost mandatory. In this course for example, setting a quality criterion of 90 percent correct on a unit test acts to control the behavior of students studying the unit.

Rule 7. The contract must be fair. This rule simply means that the terms of the contract, found on the opposite side of the agreement ("If you will do X, I will do Y"), must be of relatively equal weight. Imagine a contract, for example, in which a teacher says to the student, "If you get all A's throughout the school year, I will take you to the movies." This kind of a contract could hardly be called fair. On the other hand, if the teacher said, "If you sit quiet for 2 minutes, I will take you to the movies"
this would also be an unbalanced contract. In this case the weight of what is offered by the initiator of the contract would be immensely greater than the weight of the behavior demanded by the contract. In general one must try to relate the amount of reinforcement to the amount of performance.

**Rule 8. The terms of the contract must be clear.** This means that the terms on either side of the agreement must be explicitly stated. For example, an unclear contract would say, "Do a few arithmetic problems, and then we will do something more interesting." A more clearly stated contract would say, "Do 10 arithmetic problems correctly, and then we will watch the first 4 minutes of this Popeye cartoon." The learner must always know how much performance is expected of him and what he can expect as a reward.

**Rule 9. The contract must be positive.** This means that an appropriate contract should not say, "I will not do X if you will do Y." The terms of the contract must contribute something to the learner's experience, rather than take something away from him. Contracts used in the school and in the home are often of this negative type; e.g., "Behave as I tell you" implies "You will not get punished if you behave as I tell you." The outstanding characteristics of negative contracting is that it involves a threat of punishment.

**Rule 10. Contracting as a method must be used system-
atically. Perhaps the most difficult thing to learn about
the laws of contingency contracting is that they go on
working all the time, whether one pays any attention to
them or not. That is to say, these laws are not in effect
only during arithmetic period or the reading lesson, or
only during school hours for that matter. A reinforcement
following a bit of behavior will strengthen that behavior
whether or not it occurs during school hours or on the job.

Once contracting has been established as a motivation-
management procedure, it should be maintained, and care
should be taken not to reward undesirable acts. The best
way to eliminate unwanted behaviors is to make certain
that they are never reinforced in any way; instead, see to
it that in the same situation some other behavior is rein-
forced that is itself incompatible with the undesirable
behavior."

CONTROL, ENVIRONMENTAL

Tharp, R. G., & Wetzel, R. J. Behavior modification in the

"Some important innovations in behavior modification
combine techniques and conditions from the laboratory and
the natural environment. These studies have important
implications for both research and therapeutic effort.
Methods are gradually developing for maintaining a higher
degree of experimental control in the natural environment
than has been traditional while a new degree of precision and emphasis on evaluation is appearing in therapeutic innovations. One study in particular combined laboratory and natural environment in a very effective manner. It introduced techniques for consultation to the natural environment which have important implications for the organization of services designed to generate and maintain behavioral change. Mention has already been made of the study of Wolf, Risley, and Mees (1964) in training a hospital ward staff to deal with several behaviors in the repertoire of an autistic child. In the later stages of his work the parents were gradually introduced to the techniques and eventually took over the therapeutic role.

Beginning with a one-hour visit, the parents were permitted increasing amounts of time with their child during which a ward attendant observed and instructed them in their handling of specific behaviors. Among the several target behaviors in the repertoire of this subject were the bedtime behaviors of (1) getting up and (2) tantrums. A contingency was developed on the ward involving isolation of the subject for tantrums and room-door-closing for bedtime problems. Parents began by putting the child to bed in the ward under the supervision of an attendant. Later, the subject "... spent his first night at home. For a few weeks prior to this, he had been making short home visits accompanied by an attendant. Several days prior to
his first night he was taken home in the evening, and after a few minutes of play, went through the routine of getting ready for bed with his siblings. The attendant then brought him back to the ward and put him to bed. Since this trial run was successful, he was sent home to spend the night several days later. He was bathed and put in bed. After about thirty minutes he was heard humming to himself. The mother started to go in to Dicky but the attendant dissuaded her. Fifteen minutes later, Dicky was asleep. Over the next three months, until his release from the hospital, Dicky spent progressively greater proportions of his nights at home. One night a week an attendant went along to observe both Dicky and his parents.

(...)

This study in many ways is prototype of several which followed it, as well as of some of the techniques of therapeutic intervention to be discussed later in this book. It combines a controlled laboratorylike situation and the natural environment. The laboratory is used to explore ways of developing behavioral controls and new repertoires. Gradually elements of a broader environment are introduced and controls are extended. Finally the laboratory is used to train persons from the broader environment who have a natural relationship to the subject and who will have principal responsibility for further development and maintenance of behavior.
A basic premise about neuroses is that they are persistent unadaptive learned habits of reaction. Almost universally, anxiety is a prominent constituent of neuroses reactions; and since anxiety involves a primitive (subcortical) level of neural organization, its unlearning can be procured only through processes that involve this primitive level. Neurotic anxiety cannot be overcome purely by intellectual action — logical argument, rational insight — except in the special case where it seems entirely from misconceptions.

The elimination of anxiety responses habits is usually accomplished by the inhibition of anxiety by a competing response. The formal process is the development of conditioned inhibition through reciprocal inhibition (Wolpe, 1954). If a response inhibitory of anxiety can be made to occur in the presence of anxiety-evoking stimuli it will weaken the bond between these stimuli and the anxiety. In human neuroses, a considerable number of responses which

(1) OR RECIPROCAL INHIBITION
empirically inhibit anxiety have been successfully used to overcome neurotic anxiety-response habits as well as other neurotic habits. For example, assertive responses are used to overcome neurotic anxieties that inhibit effective action towards those persons with whom the patient has to interact. The essence of the therapist's role is to encourage the outward expression, under all reasonable circumstances, of the feeling and action tendencies previously inhibited by anxiety. Each act of assertion to some extent reciprocally inhibits the concurrent anxiety and slightly weakens the anxiety response habit. The reduction of anxiety drive is the main reinforcing agent of this habit change. Similarly, relaxation responses can be employed to bring about systematic decrements of anxiety responses patterns to many classes of stimuli.

The reciprocal inhibition also comes into play in overcoming responses other than anxiety. It is the basis of the conditioned inhibition of obsessional and compulsive habits by aversion therapy. In this a painful faradic shock or similar stimulus inhibits the undesirable behavior, with the result that conditioned inhibition of the latter is established, and accumulates with repetition. There are also many instances of positive conditioning which ipso facto include the conditioned inhibition of previous habits of response to the antecedent stimuli concerned. For example, when assertive behavior is insti-
gated, while the expression of "positive" feeling produces conditioned inhibition of anxiety, the motor actions involved in such expression inhibit and consequently displace the previous motor habit. It should be noted that here the reinforcement comprises the various "rewarding" consequences of the new response."

REFERENCE

Wolpe, J. Reciprocal inhibition as the main basis of psychotherapeutic effects. Archives of Neurological Psychiatry, 72:205.

DEPRIVATION

SATIATION


"Some examples of how behavior is actually controlled through deprivation and satiation will show how easily concepts referring to intervening states may be avoided. Deprivation is put to practical use when a child is made more likely to drink milk by restriction of his water intake; when guests are induced to eat a modest meal with greater gusto by a delay in serving the meal; when the prisoner is made more likely to talk to interrogators by being put in "solitary" ("depriving him of talking" as in the case of the "need for exercise" discussed above); when a population is made more likely to cooperate with the au-
thorities who control food supplies by reducing rations; and when a child is kept interested in his toys by being put only one at a time. Operations which have a similar effect are put to practical use when guests are induced to consume more cocktails at a party at which salty hors d'oeuvres are served, and when sexual behavior is intensified by the administration of certain hormones and aphrodisiacs. Extensive engineering control is obviously necessary to achieve some of these conditions for either theoretical or practical purposes. It is sometimes possible to use conditions which arise fortuitously. For example, waterfront brothels and other amusement enterprises take advantage of the deprivations suffered by sailors at sea. Wartime shortages generate large-scale deprivations, and these are frequently exploited for both theoretical and commercial purposes.

Satiation is put to practical use when a table d'hote restaurant serves a large supply of good bread while a meal is being prepared in order to serve small portions of the rest of the meal without complaint (it is obviously a bad practice to serve bread if the customer has still to order a la carte); when an abundance of hors d'oeuvres is used to conceal the scantiness of the dinner which follows; when legalized prostitution is recommended on the ground that it reduces the probability of sexual behavior in members of the population who might, if unsatiated, other-
wise attack innocent women; when bread lines are set up to reduce the violence which would otherwise result from meager rations; and when a clinic produces aggressive or otherwise undesirable behavior by giving the individual attention, approval, or even affection. An effect comparable to satiation is obtained when a drug is administered to reduce the probability of sexual behavior."

DESENSITIZATION, SYSTEMATIC


"It is necessary to emphasize that the desensitization technique is carried out only after a careful assessment of the therapeutic requirements of the patient. A detailed history is taken of every symptom and of every aspect of life in which the patient experiences undue difficulty. A systematic account is then obtained of his life history with special attention to intrafamilial relationships. His attitudes to people in educational institutions and to learning and play are investigated. A history of his work life is taken, noting both his experiences with people and those related to work itself. He is questioned about his sexual experiences from first awareness of sexual feelings up to the present. Careful scrutiny is made of his current major personal relationships. Finally, he is asked
to describe all kinds of "nervousness" that may have afflicted him at any time and to narrate any distressing experiences he can remember.

The problems posed by the case are now carefully considered; and if there are neurotic reactions in connection with direct interpersonal relations, appropriate new behavior based on the reciprocal inhibition principle is instigated in the patient's life situation. Most commonly, it is assertive behavior that is instigated. When systematic desensitization is also indicated, it is conducted as soon as possible, and may be in parallel with measures aimed at other sources of neurotic anxiety.

Systematic desensitization is used not only for the treatment of classical phobias involving anxiety responses to nonpersonal stimulus constellations (like enclosed spaces or harmless animals), but also for numerous less obvious and often complex sources of neurotic disturbance. These may involve ideas, bodily sensations, or extrinsic situations. Examples of each are to be found in Table A\(^{(1)}\). The most common extrinsic sources of anxiety relate to people in contexts that make irrelevant the use of direct action, such as assertion, on the part of the patient. As examples, one patient reacts with anxiety to the mere presence of particular persons, another to definable categories

\[\text{(1) Omitted here.}\]
of people, a third to being the center of attention, a fourth to people in groups, a fifth to inferred criticism or rejection, and so forth. In all instances, anxiety has been conditioned to situations in which, objectively, there is no danger.

In brief, the desensitization method consists of presenting to the imagination of the deeply relaxed patient the feeblest item in a list of anxiety-evoking stimuli repeatedly, until no more anxiety is evoked. The next item of the list is then presented, and so on, until eventually, even the strongest of the anxiety-evoking stimuli fails to evoke any stir of anxiety in the patient. It has consistently been found that at every stage a stimulus that evokes no anxiety when imagined in a state of relaxation will also evoke no anxiety when encountered in reality.

The method involves three separate sets of operations: 1) training in deep muscle relaxation; 2) the construction of anxiety hierarchies; and 3) counterposing relaxation and anxiety-evoking stimuli from the hierarchies."

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Wolpe, J. Reciprocal inhibition as the main basis of psychotherapeutic effects. *Archives of Neurological Psychiatry*, 72:205.


**DIAGNOSIS**

**MODEL, BEHAVIORAL**


"The growing literature on behavior modification procedures derived from learning theory (Bandura, 1961; Ferster 1965; Kanfer, 1961; Krasner, 1962; Wolpe, 1958) suggests that an effective diagnostic procedure would be one in which the eventual therapeutic methods can be directly related to the information obtained from a continuing assessment of the patient's current behaviors and their controlling stimuli. Ferster (1965) has said "... a functional analysis of behavior that it specifies the causes of behavior in the form of explicit environmental events which can be objectively identified and which are potentially manipulable". Such a diagnostic understanding makes the assumption that a description of the problematic behavior, its controlling factors, and the means by which it can be changed are the most appropriate "explanations." It further makes the assumption that a diagnostic evaluation is never
complete. It implies that additional information about the circumstances of the patient's life pattern, relationship among his behaviors, and controlling stimuli in his social milieu and his private experience is obtained continuously until it proves sufficient to effect a noticeable change in the patient's behavior, thus resolving "the problem". In a functional approach it is necessary to continue evaluation of the patient's life pattern and its controlling factors, concurrent with attempted manipulation of these variables by reinforcement, direct intervention, or other means until the resultant change in the patient's behavior permits restoration of more efficient life experiences.

The present approach shares with some psychological theories the assumption that psychotherapy is not an effort aimed at removal of intrapsychic conflicts, nor at a change in the personality structure by therapeutic interactions of intense nonverbal nature (e.g. transference, self-actualization, etc.). We adopt the assumption instead that the job of psychological treatment involves the utilization of a variety of methods to devise a program which controls the patient's environment, his behavior, and the consequences of his behavior in such a way that the presenting problem is resolved. We hypothesize that the essential ingredients of a psychotherapeutic endeavor usually involve two separate stages: (1) a change in the perceptual dis-
criminations of a patient, i.e., in his approach to perceiving, classifying, and organizing sensory events, including perception of himself, and (2) changes in the response patterns which he has established in relation to social objects and to himself over the years (Kanfer, 1961). In addition, the clinician's task may involve direct intervention in the patient's environmental circumstances, modification of the behavior of other people significant in his life, and control of reinforcing stimuli which are available either through self-administration, or by contingency upon the behavior of others. These latter procedures complement the verbal interactions of traditional psychotherapy. They require that the clinician, at the invitation of the patient or his family, participate more fully in planning the total life pattern of the patient outside the clinician's office.

It is necessary to indicate what the theoretical view here presented does not espouse in order to understand the differences from other procedures. It does not rest upon the assumption that (a) insight is a sine qua non of psychotherapy, (b) changes in thoughts or ideas inevitably lead to ultimate change in actions, (c) verbal therapeutic sessions serve as replications of and equivalents for actual life situations, and (b) a symptom can be removed only by uprooting its cause or origin. In the absence of these assumptions it becomes unnecessary to conceptualize
behavior disorder in etiological terms, in psychodynamic terms, or in terms of a specifiable disease process. While psychotherapy by verbal means may be sufficient in some instances, the combination of behavior modification in life situations as well as in verbal interactions serves to extend the armamentarium of the therapist. Therefore verbal psychotherapy is seen as an adjunct in the implementation of therapeutic behavior changes in the patient's total life pattern, not as an end in itself, nor as the sole vehicle for increasing psychological effectiveness.

In embracing this view of behavior modification, there is a further commitment to a constant interplay between assessment and therapeutic strategies. An initial diagnostic formulation seeks to ascertain the major variables which can be directly controlled or modified during treatment stages. Additional information is collected about the patient's behavior repertoires, his reinforcement history, the pertinent controlling stimuli in his social and physical environment, and the sociological limitations, within which both patient and therapist have to operate. Therefore, the initial formulation will constantly be enlarged or changed, resulting either in confirmation of the previous therapeutic strategy or in its change."

REFERENCES


**DISCRIMINATION**


"An interesting example of discrimination training in behavior therapy involved training mothers to react differentially to different behaviors emitted by their children (Wahler, Winkel, Peterson, and Morrison, 1965). Each mother was prompted by instructions and a signal light to guide her in selecting appropriate responses to the child and in turn was reinforced for correct responses by a signal light and praise. She was trained to react to the child's dependent behaviors as an $S^A$, to his independence as an $S^D$. That is, she did not receive reinforcement herself if she reinforced the child for dependent behaviors. She was praised, however, when she gave attention and praise to the child for his independent acts. Her response of attention and praise for the desired behaviors were both"
reinforced by the experimenters and were reinforcing to the child. In this way each mother was taught to discriminate different aspects of her child's behavior as cues for different actions on her part. A reversal design was used to demonstrate that the reinforcement contingencies exercised control over mother's and child's behavior."

REFERENCE

EVENT, ANTECEDENT


"The task of identifying the behaviors of concern in counseling may be most productively approached by means of searching for specific behaviors and events in the client's history which seem closely connected with the events about which the client is complaining. The counselor will usually find it profitable to ask himself the question: what stream of behavioral events might have originated the current disruptive or ineffective behaviors? For example, if the client complains of an inability to make friends (deferring for the moment the counselors efforts to have the client operationally describe what that means), the counselor would strive to identify those events in the
client's immediate past through which responses styles might have been unwittingly acquired which interfere with making friends. For example, one individual might have learned to inhibit socially related behaviors as a result of familial demands to excel academically. Another person might have acquired social behaviors appropriate to the subculture he then lived in but which interfere with acceptance in this new circle. A third individual may be engaging in covert verbal responses which reflect his fear that his social overtures may be rejected, and these may inhibit those very behaviors which might lead to his social acceptance (and the extinction of the anticipatory fear response).

The antecedents of concern, then, for the first client would be inferred from his description of his family background, his lack of social activity previously, the reasons for it, and the resulting lack of social facility. The counseling task for such a client would probably involve a relatively simple acquisition task. Important antecedents for the second client, whose social behaviors were inappropriate to the new situation, lie in his description of his earlier social activities and successes, thus leading to the inference that he once possessed socially effective responses which are now ineffective. Counseling with this client would involve extinguishing one set of overt behaviors and reinforcing the acquisition of new set to replace...
them. For the third client, the critical antecedent events are the subjective fear responses. With this client it might be necessary to discover the antecedents of the subjective responses. In any event, the counseling task with this individual would be the extinction of the fear responses, the acquisition of socially seeking responses, and the acquisition of socially related behaviors. Thus, it can be seen, antecedent conditions play a large role in disclosing the private events for the client that the overt complaints may represent, but they do so in a way which leads themselves to operationism and client-counselor manipulation."

**EXTINCTION**


"Reinforcement is essential to the learning of a habit; it is also essential to the maintenance of a habit. When a learned response is repeated without reinforcement, the strength of the tendency to perform that response undergoes a progressive decrease. This decrement is called experimental extinction, or, more simply, extinction.

When the little girl, looking for candy, picked up a book and did not find any candy under it, her tendency to pick up the same book again is reduced. In this case,
previous training had already established a general habit of not looking in the same place twice in this kind of situation. One performance of a nonrewarded response, therefore, usually eliminated it for the rest of that trial. In the absence of previous training, the process of extinction is often much slower. A fisherman who has been rewarded by catching many fish in a certain creek may come back to that creek repeatedly, but if these visits are never again rewarded by securing fish (as a subgoal with learned value), his visits will gradually become less frequent and less enthusiastic.

The process of extinction should not be confused with forgetting. Forgetting occurs during an interval in which a response is not practiced. Extinction occurs when a response is practiced without reinforcement.

The process of extinction is usually not immediate but extends over a number of trials. The number of trials required for the complete extinction of a response varies with certain conditions.

(...) The number of trials required for extinction depends on the strength of the habit, on the particular conditions of extinction, and on the past experience with nonrewarded trials."

FADING

Kanfer, F. H. and Phillips, J. S. Learning foundations of

"(...) Fading is a technique that facilitates forming new discriminations. One stimulus that initially exerts powerful discriminative control is gradually "faded out" as another stimulus acquires greater power of control. Fading is illustrated in studies in which echolalic children are taught a labeling vocabulary. Such children can be trained, through shaping and positive reinforcement, to repeat a word immediately after the therapist utters it. For such a child, saying "ear" is under the stimulus control of the word "ear" spoken by the therapist. Functional speech requires a different sort of stimulus control. A first step toward independent speech is to train the child to attach the word to the object or picture of object, that is, to acquire a labeling vocabulary. The trainer points to a selected stimulus (for example, his own ear). When the child visually fixates on it, the trainer says "What is this?" and then speaks the appropriate noun label ("ear"). If the child imitates the sound, he is reinforced. This procedure is repeated on each trial, but the prompt (saying "ear") is gradually faded. The trainer speaks more and more softly and/or pronounces less of the word ("ea-") until the child says the word upon presentation of only the training stimulus and the question "What is this?" More and more words are introduced in this
fashion, and previously mastered stimuli are interspersed with new ones to insure that only the object or picture itself is the potent $S^D$.

(...) In the next stage of the training procedure, various representations of each object are gradually introduced as discriminative stimuli to insure a generalized response class (for example, child's nose, doll's nose, picture of a nose). Words for common activities (walking, laughing, etc.) are trained in similar fashion, and shaping and fading techniques are also used to train abstract speech, and finally, conversation. At each step, care is taken that discriminations are not conditioned to adventitious stimuli such as time lapse or schedule effects.

Similar fading procedures have been successfully used with adults. To retrain aphasics who are unable to match their own motor responses with self-instructions to move in a given way, technicians state the desired self-instruction aloud, the patient imitates it aloud while the technician physically guides the patient through the motion, but over trials gradually fades out both the verbal and physical prompts.

Sidman and Stoddard (1967) compared several discrimination training procedures for teaching retarded children to make form discriminations. They found a fading procedure to be superior to training without fading, in terms
of number of errors and level of final acquisition of the
correct solution. Half of the children who were unable
to acquire a discriminated response between a circle and
an ellipse under reinforcement and extinction alone were
able to do so under a fading program. Those who failed
to acquire the discrimination at all were found to have
adopted response patterns (for example, position alter-
nations incompatible with appropriate stimulus control),
an outcome that can be avoided if errorless training
procedures are used."

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FEED BACK

REINFORCEMENT, DIFFERENTIAL

Skinner, B. F. Science and human behavior. New York:
Macmillan, 1953, 95.

"Although operant reinforcement is always a matter of
selecting certain magnitudes of responses as against others
we may distinguish between producing a relatively complete
new unit and making slight changes in the direction of
greater effectiveness in an existing unit. In the first case, we are interested in how behavior is acquired; in the second, in how it is defined. It is the difference between "knowing how to do something" and "doing it well". The latter is the field of skill.

The contingencies which improves skill is the differential reinforcement of responses possessing special properties. It may be supplied automatically by the mechanical exigencies of the environment. In learning to throw a ball well, for example, certain responses must release the ball from the fingers at the moment of its greater forward speed. These responses are differentially reinforced by the fact that, when so released, the ball covers a considerable distance. Other instances in which the release comes before or after the proper moment are not so reinforced. We are likely to forget how complex an act this is and how much differential reinforcement is required in the young child to produce a properly timed sequence. In games, crafts, and certain artistic performances extremely fine differences in the execution of behavior make important differences in the consequences.

(...). The reinforcement which develops skill must be immediate. Otherwise, the precision of the differential effect is lost. In many practical areas skilled behavior is encouraged by arranging a quick report of accomplishment. In rifle practice, for example, extremely small-
scale properties of response are differentially reinforced by a hit or a miss. Properties of this magnitude can be selected only if the differential reinforcement is immediate. But even when a hit can be seen by the rifleman, the report is delayed by the time which the bullet takes to reach the target. Possibly this gap is bridged by conditioned reinforcement from the "feel" of the shot. The rifleman eventually "knows" before the target is hit whether the shot was good or bad. His own behavior generates a stimulating feed-back, certain forms of which are followed by hits, others by misses. The more immediate problem is to shoot in such a way as to generate the "feel" followed by a hit. In more vigorous enterprises the feed-back is clearer. Good form in bowling, for example, is reinforced by feed-back from the bowler's body. This does not mean that the rifleman will continue to shoot well, or the bowler to bowl well, even though he receives no report of the effect upon the target or pins. The report is needed to maintain the conditioned reinforcing power of the feed-back.

(...) We use differential reinforcement to shape and intensify the behavior of others in what may be spoken of (...) deliberate control. The effect may also be wholly unintentional. The mother who complains that her three-year-old child whines and cries for attention in an annoying way may not realize that her own reinforcing prac-
tices are responsible. If she is busy with another matters, she is likely not to respond to a call or request made in a quiet tone of voice. When the child raises his voice, she replies. This is differential reinforcement. The average intensity of the child's vocal behavior rises. When the mother has adapted to the new level, again only the louder instances are reinforced. Further differentiation in the direction of the loud responses follows. The child's voice may also vary in intonation. What we call "whining" may be through of as speaking with a small admixture of crying. Such speech is more likely to secure an effect and is therefore differentially strengthened. In fact, what we call annoying behavior in general is just that behavior which is specially effective in arousing another person to action. Differential reinforcement supplied by a preoccupied or negligent parent is very close to the procedure we should adopt if we were given the task of conditioning a child to be annoying."

FLOODING


"The first account of a case successfully treated by this kind of procedure is, I believe, due to E. R. Guthrie. (...) More recent attempts at flooding therapy have been described by Malleson (1959), Frankl (1960), and Stampfl
Malleson described treating several cases by exposing them to intense anxiety. One was an Indian student who was very afraid of examinations. He was made to experience his fear as fully as possible.

He was asked to tell of the awful consequences that he felt would follow his failure — derision from his colleagues in India, disappointment from his family, financial loss. Then he was to try to imagine these things happening; try to imagine the fingers of scorn pointed at him, his wife and mother in tears. At first, as he followed the instructions, his sobbings increased. But soon his trembling ceased. As the effort needed to maintain a vivid imagining increased, the emotion he could summon began to ebb. Within half an hour he was calm. Before leaving I instructed him to repeat the exercise of experiencing his fears. Every time he felt a little wave of spontaneous alarm he was not to push it aside, but was to enhance it, to augment it, to try to experience it more profoundly and more vividly. If he did not spontaneously feel fear, every 20 or 30 minutes he was to make a special effort to try and so on, however difficult and ludicrous it might seem. I arranged to see him twice a day over the next 2 days until his examination.

He was an intelligent man, and an assiduous patient. He practised the exercises methodically, and by the time of
the examination he reported himself as almost totally unable to feel frightened. He had, as it were, exhausted the effect in the whole situation. He passed his examination without apparent difficulty.

In vivo flooding is exemplified by the case of Mrs. C., a woman with agoraphobia so severe that she was unable to go on her own more than two blocks by car without anxiety. Attempts at systematic desensitization had failed — apparently because she was unable to imagine scenes realistically. After other measures had also proved ineffective, I decided to persuade her to expose herself to flooding, which had to be in vivo because of the demonstrated inadequacy of her imagination. After resisting strenuously for some weeks, she agreed to take the plunge. Plans were made for her husband to place her, unaccompanied, on a commercial aircraft one hour's flight away from the airport at which I was to wait to meet her. When Mrs. C. in due course alighted from the plane, she walked towards me smiling. She had felt increasing anxiety for the first fifteen minutes of the flight, and then gradual subsidence of it. During the second half of the journey she had been perfectly comfortable. This single experience resulted in a great increase in her range of comfortable situations away from home. She was now able, without anxiety, to drive her car alone three or four miles from home and to make unaccompanied trips by plane without any
anxiety. Plans to build upon this improvement by further flooding were foiled by problems of distances."

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Malleson, N. Panic and phobia. Lancet: 1: 225


GENERALIZATION


"Once new responses have been developed in therapy and their transfer to extratherapy situations has become desirable, several possibilities are open to the therapist to enhance this process (Goldstein, Heller, and Schrest, 1966, pp. 212-259). Generalization can be maximized by increasing the similarity between stimulus events. Thus, the therapist might find it desirable to decrease the distinctiveness of therapy by bringing its positive features close to important stimuli in the patient's environment. Significant others can be included in the therapy process either in person or through symbolic representation (e.g. pictures of the patient's wife, boss, or friends, etc.), thus giving
the patient the opportunity to relate to them or their stimulus characteristics under the benign supervision of the therapist. The patient and therapist might leave the confines of the office, and some interviews might be carried out in the patient's home or place of employment, or perhaps even in the local bar. The most appropriate for an interview should be determined by its relevance to the topic under discussion. Thus, if therapy is at the point of dealing with attitudes toward authority figures are actually visible, perhaps in the presence of a policeman in the park, in the patient's place of employment, or in other situations in which authority cues are very strong (Goldstein, Heller, & Sechrest, 1966, p. 227).

As reasonable as the above suggestion might seen, there is a finite limit in the amount of similarity the therapist can induce between therapy and extratherapy events. For example, having the patient practice telling off his boss as a therapeutic exercise, even in the boss's presence and with his passive consent, is of limited value if the patient does not learn some important principle from this exercise which can use to monitor his own behavior in subsequent encounters without the necessity of the therapist's constant presence. The therapist can increase his effectiveness by working toward the establishment of such principles."
"For reasons of convenience, a number of investigators have used imagined aversive events as the UCS in place of shock or drugs -- a technique variously termed "covert sensitization" or "aversive imagery". The substitution of imagined for real stimulus events has already been discussed in the section dealing with treatment of sexual deviations. Indeed, fantasy recapitulation of a patient's usual masturbatory imagery often has been viewed as more realistic than slides or pictures used as CS. Gold and Neufeld (1965) went one step further and combined imagined CS and UCS. They instructed a homosexual patient to imagine sexually arousing stimuli in aversive surroundings, with level of attraction and aversiveness of the elements so graded that there was advantage for the aversive elements. For example, the patient imagined himself in a toilet, either next to an ugly man, or next to a more attractive man with a policeman nearby. They used imagined scenes of attractive women in pleasant contexts to counter-condi-

(1) Or SENSITIZATION, COVERT
tion heterosexual attraction. Cautela (1966) successfully treated cases of alcoholism and obesity with a procedure involving relaxation, imagined contact with the CS (for example, alcohol), and imagined aversive events accompanying the CS (for example, vomiting on himself and his companions as the glass touched his lips). The patients practice imagining this sequence at home between therapy sessions, an obvious advantage of a technique that does not require elaborate apparatus.”

REFERENCES


IMITATION

LEARNING, VICARIOUS

MOLDING


"Two basic features appear to form a basis for the organism's search for new experiences. First, living organisms respond to novel stimuli in their environment and engage in behavior that procures changes in environmental stimulation. Whether this phenomenon is explained on the basis of curiosity, exploratory drive, stimulus hunger, or
similar concepts, it is a well accepted characteristic of living organisms. The second feature concerns the finding, documented for rats, monkeys, and humans, that the behavior of a peer model tends to result in imitation by the observing animal when placed under similar conditions. Observational learning has been demonstrated not only by anecdotal evidence but also repeatedly in the laboratory. For example, Darby and Riopelle (1959) exposed monkeys to observation of successful solution of discrimination problems by another monkey who was rewarded on half of the trials; the observing monkeys were never rewarded. The observer monkeys were then exposed to the same problems and rewarded for making the same choices as had the models. Their performance in acquiring the discriminations was significantly superior to that of control animals not exposed to the model.

However, the extent to which observational or vicarious learning plays a role in an organism's total life probably differs across species. The greater the complexity of the behavioral repertoire needed for survival, and the availability of sensory, motor, and intellectual capabilities to observe, recall, and execute modeled behaviors, the larger is the role played by observational learning. In addition, the human capacity for language enhances observational learning. For example, in a study by Bandura, Grusec, and Menlove (1966), children observed a film of an
adult model engaging in a series of novel responses. Those children who were asked to verbalize the modeling stimuli during their presentation showed a significantly greater tendency to execute the response than did children who observed passively.

In clinical work it often appears that a patient's neurotic behavior patterns are related to similar nonadaptive behaviors he has observed in parents or other models. Many a child has been admonished by a teacher for exhibiting language or manners acquired by observation of a father's behavior in the privacy of his home. More serious disruption occurs when a child adapts an ineffectual, "sick" method of coping with stress, such as pleading illness or using assaultive violence, after observing successes with this method in siblings or parents. The problem often is first defined as such outside the home. The family may tolerate, and thus sustain, these behaviors, but other social groups may punish them. Clinicians also note that many actions, originally learned by peer group observation, turn into nonadjustive behavior when they are no longer acceptable in a broader social community. The acquisition of delinquent behaviors in institutions, clubs, or in any situation that permits observation of these skills and that rewards their performances is an excellent example of the opposite consequences for the same behaviors in different circumstances. Yet the frequency of exposure and personal
importance of the group make a juvenile a better imitator of behaviors of his friends than of the standards of conformity vaguely provided by adult society. Many personality theories have put basic importance on learning by example, but have asserted that early identification with parents and other models influences lifelong behavior by molding the nature of relatively permanent personality structures in the individual. A behavioral view suggests that a development of these response patterns can better be understood within the context of observational learning and conditioning, and can be influenced at any time during the person's life. In fact, extensive change can even be brought about by deliberately programmed observational learning in psychotherapy. The present chapter deals with this area of learning as a fundamental process in human development and in behavior modification methods."

REFERENCES


MENTAL HEALTH, COMMUNITY

The Joint Commission on Mental Illness and Health was established by Congress under the Mental Health Study Act of 1955. The recommendations of this Commission followed five years of study and were instrumental in the enactment of the Community Mental Health Centers Act of 1963 which provided federal aid for the establishment of comprehensive community centers (Smith & Hobbs, 1966). Only recently has the full significance of both the study and the Act begun to be realized. It is recognized socially, politically, and professionally that the real potential for helping and for behavioral change lies in the natural environment. Treatment in the community, by the community — this is the central theme of the Joint Commission's report.

The removal of the individual from his social surroundings and his placement in a large hospital has not been a successful form of treatment. The reasons are many. Most obvious is that the hospital frequently disrupts the social relations of the patient without replacing them, or else it replaces them with a social milieu foreign to the individual, bizarre by outside standards, or inadequate as a relearning device. The patient who sits in the ward for long periods of time and watches television, attends occupational and group therapy, and interacts exclusively with other patients and ward staff simply is not acquiring those skills which would help him reintegrate with his family and
friends and develop control over the environment which sent him to hospital originally. The natural result of hospitalization often is increased disorganization of social behavior rather than its acquisition or reorganization.

In many instances there is an intensive attempt on the part of a hospital administration to establish a "therapeutic milieu" which will teach the patient social and occupational skills. These programs, however, can seldom prepare the individual for his particular social life, his particular family, his place of employment, and his community. Sometimes the inadequacies are obvious. An example is the hospitalized South-west Indian who is surrounded by an environment which is designed to develop middle class urban behaviors and who must return and re-integrate into reservation life. But analogous discrepancies exist between the hospital milieu and the waiting community for almost any patient.

The parallels with any institutional setting are obvious. The youth sent to the state industrial school frequently returns as more skilled delinquent. The behaviors which he acquires in the formal treatment program are not ones that are useful in helping him maintain nondelinquent behavior in a delinquent culture. His academic progress, his shop skills, his deportment record, and all the other advances which contribute to his release fall be-
fore the forces of the environment to which he results. Frequently, in fact, his institutional experience may unable him to assume a more rewarding and influential position in his delinquent peer culture.

(...) M. Brewster Smith and Nicholas Hobbs (1966), in an article entitled "The Community and the Community Mental Health Center", clarify the characteristics of the community center concept and the professional reorganizations necessary to implement it. They suggest that if the place and personnel of therapeutic intervention are not to be separate from the community, if the "continuity of concern" is to be maintained, if disordered behavior is to be approached through the social system in which the individual is embedded, then it will become imperative that large numbers of people not now considered to be mental health workers nor "professional" people, in the mental health sense, be recruited and trained to join the helping force. The Smith and Hobbs paper calls for the deprofessionalization of the task of helping. These authors recognize that the Mental Health Center Act is likely to require a revolution in traditional professional treatment and organization if it is to be truly implemented."

REFERENCE

"A direct test of the effectiveness of modeling positive behaviors in the reduction of fear and avoidance behavior was carried out by Bandura, Grusec, and Menlove (1967). Nursery school children who displayed fearful behavior toward dogs observed a fearless peer model approach a cooker spaniel in the context of an enjoyable party atmosphere. On four consecutive days the dog-avoidant children observed the peer model in petting, feeding, and other positive interactions with the dog. This episode was introduced while the children were enjoying a party accompanied by the usual paraphernalia of treats, colored hats, and balloons. The demonstrated approach responses were graduated, with progressively stronger behaviors displayed in successive sessions. Control groups of other children equally afraid of dogs were exposed to (1) the same graduated modeling stimuli but in a neutral context; (2) observation of the dog alone in a positive context without model; and (3) participation in the positive party activities without exposure to either dog or model. The children who had observed the peer model in fearless play with the dog showed significantly greater reduction of avoidance behavior on subsequent behavioral
tests. This fear reduction was maintained at a follow-up evaluation one month after the posttreatment test. The addition of a positive context to the modeling behavior did not prove to be specially beneficial. Later studies using similar procedures by the same group of investigators indicated that live demonstrations are powerful than symbolic modeling (films) in reducing the children's fear, but this difference can be offset when the movies include a broader range of models and aversive stimuli (Bandura and Menlove, 1968). If the differences between direct versus symbolic experience with a model are replicated, they have important implications for desensitization (and perhaps aversive conditioning) therapies, which usually rely on symbolic stimuli."

REFERENCES


MODEL, MEDICAL


"By the disease or medical model we mean that the indi-
individual's behavior is considered peculiar, abnormal, or diseased, because of some underlying cause. The analogy is made to physical medicine in which germs, viruses, lesions, and other insults foreign to the normal working of the organism lead to the production of symptoms. This approach represented a major breakthrough in physical medicine during the nineteenth century. It permitted effective specific treatment of ailments where before the history of medicine had been almost completely the story of placebo (Shapiro, 1960) or prescription of non-specific remedies that depended on suggestion and spontaneous remissions. A major statement of the nineteenth-century medical model may make the position clearer and offer some insight into the basis of thinking such as Freud's, which later had such a major impact on evocative psychotherapy.

(...) At this point, we may summarize some general concepts of the medical model that will be focuses of discussion in the immediately succeeding paragraphs. The first is that there is an underlying cause and consequently mal-adaptive behaviors cannot be treated directly because they are products of these causes. Second, changed behavior is not really important unless the "real" trouble has been dealt with. While we shall return to this question when we discuss symptom substitution, it is worth noting that just as in nineteenth century a patient might not be released because he had not been treated, so it is not un-
common today for a patient to continue to be hospitalized because he has not achieved "insight into his problems". It is instructive that dichotomies are made between "treatment" and "administrative" staffs (Stanton and Schwarz, 1954) with an implied distinction between the medical specialty of the former and the custodial nature of the latter. In actually, the administrative staff has control over many reinforcing stimuli that could facilitate the work of changing behavior. Third, the distinction between what the subject does, his behavior, and what the clinician expects, or knows to be there, is blurred, and failure to find the expected cause merely confirms the severity of the problem. Aside from the implications for treatment, the medical model may become an obstacle in the way of research with a vast literature of iatrogenic irrelevancies.

(...) Coleman (1956, p. 225) is very explicit in deducing the therapeutic position based on the traditional or dynamic viewpoint.

... psychological treatment ... focuses on 1. helping the patient to understand the dynamic significance of his symptoms — how they came about and why he uses them — and 2. helping him to strengthen his personality and find more adequate and effective means of dealing with his problems ...

The major obstacle is the resistance of the patient to be cured. What the neurotic really wants is to be cured of his symptoms without having to face his problems or to give up the more or less unconscious satisfactions which the symptoms obtain for him. Thus he frequently insists on discussing his symptoms at great length, seemingly in a sincere attempt to help the therapist get a clear view
of them ... In some cases the patient's symptoms may temporarily disappear so that he is convinced it is unnecessary to return for further treatment. For this reason the immediate disappearance of symptoms is often looked upon a poor diagnostic sign. In still other cases the symptoms may seemingly become intensified and the patient may report that he is becoming worse and has decided to consult another therapist. Thus, it is often very difficult to overcome the therapist's resistance to the actual facing of his problem; yet this is required in any effective therapy.

A common pitfall in therapy is the treatment of symptoms rather than underlying personality difficulties. ... unless the underlying personality conflicts are properly handled by psychotherapy, the same neurotic symptoms or others designed to defend the patient from his problems will soon appear.

(...) In summary, we may say that given a medical model, it follows that the importance ascribed to the overt difficulty or maladaptive behavior will logically follow a medical model. Overt maladaptive behavior is considered to be symptomatic, in the dictionary definition of the medical term, "indicative of the presence of a particular disease." It is the disease then that is treated, and this procedure has a number of consequences.

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MODIFICATION, BEHAVIOR (1)


"In defining behavior modification we follow the work of Robert Watson (1962, p. 19), who noted that behavior modification included many different techniques, all broadly related to the field of learning, but learning with a particular intent, namely clinical treatment and change.

There are two important aspects of this definition. The first is the insistence that the basis of treatment stems from learning theory, which deals with the effect of experience on behavior, in Hilgard's (1962, p. 623) words: "...the process by which new or altered behavior comes about as a result of prior response, provided the changes cannot be attributed to growth or to temporary changes in the state of the organism (as in fatigue or under drugs)."

The basis of behavior modification is a body of experimental work dealing with the relationship between changes in the environment and changes in the subject's responses.

The second aspect of behavior modification is a focus on behavior. As Watson notes (1962, p. 16), "Skinner made it possible to see verbal behavior as a response in

(1) Or THERAPY, BEHAVIOR. "We will use the terms behavior modification and behavior therapy interchangeably in this essay to denote the modification of clinical maladaptive behavior."
its own right." Whether the behavior dealt with is verbal or motoric, whether it reflects immediate social needs or is highly symbolic and idiosyncratic, the focus of modification is behavior.

(...) Behavior modification focuses on behavior that may be defined, following Hilgard (1962, p. 614) as: "Those activities of an organism that can be observed by another organism or by an experimenter's instruments." This definition is of vital importance. The working behavior therapist is likely to ask three questions: (a) what behavior is maladaptive, that is, what subject behaviors should be increased or decreased; (b) what environmental contingencies currently support the subject's behavior (either to maintain his undesirable behavior or to reduce the likelihood of his performing a more adaptive response; and (c) what environmental changes, usually reinforcing stimuli, may be manipulated to alter the subject's behavior.

(...) This focus on behavior has been succinctly stated by Eysenck (1959): "Learning theory does not postulate any such 'unconscious causes', but regards neurotic symptoms as simple learned habits; there is no neuroses underlying the symptom, but merely the symptom itself. Get rid of the symptom and you have eliminated the neuroses."

(...) To summarize, behavior modification is the application of the results of learning theory and experimental psychology to the problem of altering maladaptive behavior.
The focus of attention is overt behavior, and in terms of both the development and change of behavior, no distinction is made between adaptive and maladaptive responses."

REFERENCES


PARADOXICAL INTENTION


"Intense anxiety evocation has been employed therapeutically by existentialists psychiatrists like Frankl (1960) and Gerz (1966) under the name paradoxical intention. Of course, in using it, they are not guided by the idea of experimental extinction or any other learning mechanism, but by the expectation that "if the patient were to try intentionally to bring on these symptoms he would not only find difficulty in doing so, but also change his attitude towards his neuroses." Whatever their theorizing, there is no essential difference between their practical proce-
dures and Malleson's, described above (see Flooding). In a good many cases treatments are given repeatedly over months. One of Gerz's cases was a 29-year-old woman who had fears of heights, of being alone, of eating in a restaurant in case she vomited, and of going into supermarkets, subways and cars. She was instructed to try to bring about whatever she was afraid would happen to her. She was to try to vomit while dining out with her husband and friends and create the greatest possible mess. She was to drive to markets, hairdressers and banks "trying to get as panicky as possible." In six weeks she had lost her fears in her home situation, and shortly thereafter drove all by herself to Gerz's office, about five miles from her home. Four months later, she drove with her husband to New York City, a hundred miles from her home, across the George Washington Bridge, back through the Lincoln Tunnel, and attended a goodbye party on the lower deck of an ocean liner. Gerz states that two years later she was free of symptoms."

REFERENCE


PHOBIA

Rachman, S. Phobias: Their nature and control. Springfield,
"A phobia is an excessive fear reaction which is both persistent and unadaptive. When a phobic person is exposed to the fear-evoking stimulus or situation, a strong emotional reaction is produced. This reaction can be analyzed into three components: subjective, autonomic and motor.

The subjective aspect of a phobic response is experienced by the person as an alarming feeling of intense fear, tension, or full panic, and is expressed in a variety of ways. Some patients, for example, will report they feel as if they were dying. Others feel they are suffocating; yet others that they are going to faint or collapse.

The autonomic reaction will include one or more of the following physiological changes: rapid respiration, sweating, trembling, palpitations, muscular tension and/or weakness, "Butterflies in the stomach", involuntary excretion, breathlessness, nausea, dryness of the mouth. The motor responses is usually one of flight but some patients become inert or "frozen" and feel too weak to move. Patients who experience these feelings of muscular weakness seek support of another person, a wall or similar aids.

Theoretically, the stimuli or situations which can provoke a phobic reaction are infinite, but in practice there
are a few which are encountered frequently. The most common phobias are claustrophobia, agoraphobia, animal phobias, interpersonal phobias, death-disease-injury phobias, sexual phobias.

(...) A Theory of Phobias

1. Phobias are learned responses.

2. Stimuli develop phobic qualities when they are associated temporally and spatially with a fear-producing state of affairs.

3. Neutral stimuli which are of relevance in the fear-producing stimulation and/or make an impact on the person in the situation are more likely to develop phobic qualities than weak or irrelevant stimuli.

4. Repetition of the association between the fear situation and the new phobic stimuli will strengthen the phobia.

5. Associations between high-intensity fear situations and neutral stimuli are more likely to produce phobic reactions.

6. Generalization from the original phobic stimulus to stimuli of a similar nature will occur.

7. Noxious experiences which occur under conditions of excessive confinement are more likely to produce phobic reactions.

8. Neutral stimuli which are associated with a noxious experience (S) may develop (secondary) motivating prop-
terties. This acquired drive is termed the fear drive.

9. Responses (such as avoidance) which reduce the fear drive are reinforced.

10. Phobic reactions can be acquired vicariously.

(...) At present, the most effective method of treating phobic disorders appears to be systematic desensitization. This procedure is the most widely used of all the methods of behavior therapy and was derived from and is closely connected with experimental psychology.

(...) Desensitization was developed by Professor Wolpe in the early 1950's."

"If your reinforcer is something that you can carry around with you, such as candy, or if it is something that you commonly do, such as talk with a friend, you can use these easy reinforcers to supply quick effects on the target behavior.

But suppose your reinforcement is not portable or it is not some easily adjusted activity? Sometimes you cannot deliver the reinforcement immediately after performing the desired target behavior. When, for any reason, you cannot
have the reinforcer after the behavior, then token reinforcers may be appropriate.

A token is a symbolic reinforcer because it can be converted into real reinforcement. Money, for example, is a token reinforcer, for it is the things that money can buy — the reinforcements — that make money attractive. Such devices as poker chips, gold stars, check marks, ticket punches, and dollar bills have all been used as tokens.

Many people, in modifying their own behaviors, choose a point system of token reinforcement, rather than using actual objects. In a point system, the performance of the desired behavior results in gaining a specified number of "points". These points can then be "spent" for reinforcement. The cost — so many points per reinforcer — is also specified in the contract.

The main function of tokens, whether they are objects or points, is to bridge the delay between the time when you perform the desired behavior and the time when you can partake of the reinforcer. For many people, the chosen reinforcer is something they can do at the end of the day. They may use a particularly nice supper, or the opportunity to watch TV, or a talk with friends in the evening, as their reinforcer, contingent upon their having performed the target behavior earlier in the day. For all of these reinforcers, tokens can be used during the day to
provide the necessary immediacy.

A man who wanted to substitute being-nice-to-friends for being-rude-to-friends selected as his reinforcer watching TV in the evening. He couldn't be sure when the opportunity would arise during the day to be nice to his friends, and he couldn't rush off to watch TV as soon as he had performed his target behavior, so he used a token system. He carried a 3 X 5 card in his pocket and made a check on it when he performed the target behavior. Then, later in the evening, he would allow himself to watch TV if he had earned the number of points his shaping schedule required for that day. He used his tokens cumulatively: the more points he earned during the day, the more he could watch TV at night. His menu looked like this:

- one token .................. 30 minutes' TV watching
- two tokens .................. 60 minutes
- three tokens ............... 90 minutes
- four tokens ............... as much as I want

Using a token menu like this has an advantage in that it makes it possible to employ a great variety of reinforcers instead of just one or two. Very few activities, such as watching TV, will be equally appealing (reinforcing) every day. One night you might want to watch TV, but on another you might want to go to a movie, and on a third you might want to go to a party. A young woman used a menu like this to deal with that situation.
1 point........ can watch TV up to one hour
2 points ........ can watch TV as much as I want
3 points ........ can watch TV as much as I want to or go
to a movie
4 points ........ can do any of those things, plus can read any kind of book or story I want
5 points ........ can do any of those things, plus can go out with friends if they ask
6 points ........ can do all that, plus can ask friends to go out with me.

An even broader net was cast by a student whose last menu item was this: "Every Saturday morning: anything I want to do requires four points." This kind of system will work if it is possible to create opportunities for the desired behavior but not if you have to wait for opportunities to come to you. For example, if you earn points for studying, you can always finish the required amount of studying on Saturday morning, but if you earn points by being nice to friends, you may not have the opportunity to perform the target behavior because they may not be around to practice on.

A token system makes it easy to increase a behavior slowly. For example, over time, you can gradually require more and more performances of the target behavior, to earn a token. You might start a study program, for instance, by getting one point for every fifteen minutes spent studying.
but, after a few days, increase the amount of time you must study in order to earn a point."

PREMACK PRINCIPLE


"The 'Premack Principle' may be stated as follows: a high probability behavior may be used as the reinforcer for a low probability behavior (Premack, 1965). For our purposes, a high probability behavior may be understood as that activity in which a target will engage in the given situation, if unconstrained. For example, if left to his own devices, in his own home, the target has a high probability behavior of television-watching, and a low probability behavior of studying. The Premack Principle is useful in that it alerts the interventionist to the fact that television is a good potential reinforcer for studying-behavior, if the relationship between the two is made contingent.

Thus we are never without a potential intervention plan, because that target's preferred activity can always be used as a reinforcer — even if it is only sitting and staring at the wall. The difficulties with the use of the Premack Principle in the behaviorally disordered population is, of course, that the preferred activities are typically undesirable. In most cases, the use of material or people
reinforcers produces a behavioral repertoire which is more acceptable. But the following rather extreme case study illustrates that successful intervention may well be possible, even for targets who apparently have "no" reinforcers.

Case # S-13. Burton had been forced out of school because of his bizarre mannerisms, gestures, and posturing. It was generally assumed that he was a severely schizophrenic child, albeit a highly intelligent 13-year-old. He acted belligerently toward his parents and was destructive of home property. He had been known to punish his parents by such behaviors as pouring buckets of water over his head in the middle of the living room, but his high probability behaviors were to publicly assume a semifeetal position, and, alternately, to lock himself alone in his room for long hours. Reading the homework assigned by his visiting teacher was low probability behavior. Neither he nor his parents rated any objects or people as reinforcing. Initially, therefore, the reinforcement of "retiring to his room" was used, contingent upon completing his homework assignment.

Later, he was returned to a special education classroom. Low probability behavior was classwork, and high probability behavior was escaping alone to a corner of the school yard. A contingency was established in which Burton was allowed to leave the class after completion of his assignment. Later, school attendance became a high probability behavior. At that point, he was allowed to attend school only contingent upon more acceptable behavior at home.

The strategy implied in the use of the Premack Principle is illustrated here: by reinforcing the low probability (desirable) behavior, it becomes more frequent, more probable."

REFERENCE

PROMPTS


"Techniques to get a subject to emit new or highly infrequent responses, new combinations and sequences of responses, and responses that may occur in contexts other than the desired one are referred to as prompts. The most common prompt is the verbal request; asking the subject to raise his hand, to find the screwdriver, to point to a word or to answer questions. A second type of prompt consists of arranging the environment so that the emission of the desired response is most probable. This may be done by giving no choice of objects (having no tools other than a screwdriver), by making incorrect choices less visible, farther away or more difficult, by wording questions to reveal the answer, or by asking a question immediately after the correct answer was given the agent, peer, or the subject. Placing a toddler on the potty at the "right time" also exemplifies this type of prompt. A third type of prompt is to assist the subject to make the response. Shaping the mouth so that a particular sound is most apt to occur, placing the fork in the children's hand and guiding his hand toward his mouth, and raising the leg over a small barrier to achieve the proper leg swing are examples of this type of prompt. A fourth class of prompts is to
demonstrate or model the response in hope that the subject will imitate the agent. These prompts often are used in combination; the speech therapist not only shapes the subjects's mouth but also makes the sound, exaggerating his own mouth movements."

PUNISHMENT


"Informal definitions of punishment are not lacking. At one extreme is the subjective type of definition whereby punishment refers to an unpleasant subjective state, as in the "annoying after effect" of Thorndike (1911). The difficulty in measuring the subjective states, however, forces us to look elsewhere. A second type of definition of punishment is implied in designating punishment as a drive variable, as in Dollard and Miller (1950). Since this type of definition is based on inferences about behavior, it would be preferable as an initial step to look at the behavior itself for our minimal definition. An unequivocal aspect of punishment seems to be that punishment reduces a behavior when the punishment is arranged as a consequence of that behavior. Hence, our minimal definition will be a consequence of behavior that reduces the future probability of that behavior. Stated more fully punishment is a
reduction of the future probability of a specific response as a result of the immediate delivery of a stimulus for that response. The stimulus is designated as punishing stimulus; the entire process is designated as punishment."

REFERENCES


REINFORCEMENT

REINFORCER, GENERALIZED


"Reinforcement is the most important process by which behavior is generated and maintained. Most of an organism's behavior exists because of the effect on the environment, perhaps with the exception of the psychotic whose repertoire reflects the absence of behavior maintained with positive reinforcement. Reinforcement differs from the colloquial reward in its specificity; it is the immediate environmental consequences of a specific performance. The major effect of reinforcement needs to be distinguished from the classical or Pavlovian-type conditioning where the conditioned response is some elicited reflex,
usually autonomic. The increase in the frequency of occurrence of the performance that is reinforced is the property of reinforcement that permits the tremendous variety and subtly that occurs in the field of "voluntary" behavior as opposed to reflex and autonomic behavior.

Most reinforcements of everyday life are social rather than involving immediately important biological conditions. These social-maintaining-events operate as reinforcements because they are in a chain of events leading ultimately to a more basic consequence. Money provides an example of a conditioned reinforcer - par excellence - which derives its effect because its possession is a condition under which other performances will produce basic environmental effects. The important social consequences of money occur because the reinforcing properties of money nearly always depend immediately or ultimately upon the behavior of other individuals. Similarly, a smile can reinforce behavior because an individual who is smiling is more likely to supply subsequent reinforcements than one who is not.

As with money, many reinforcements in human behavior can be effective in the absence of any specific deprivation, unlike most reinforcements demonstrated in animal experiments. These "generalized" reinforcements maintain much of human behavior, and have large order of magnitude of effect because their reinforcing power comes from a va-
riety of reinforcements and deprivations and does not depend upon a current level of deprivation. This is especially true of nearly all reinforcements mediated by other organisms, because the mediation by another organism, in general, permits the application of a wider range of reinforcements. Other examples of generalized reinforcers include paying attention, affection, saying "right", or "correct", smiling, etc. These are important reinforcements because they are usual conditions under which another organism will reinforce a behavior of an individual."

REINFORCEMENT, ACCIDENTAL
SUPERSTITION


"Given certain features of the process of operant conditioning — that it takes place when response and reinforcer are in temporal contiguity, that the contiguity need only be approximate, and that conditioning is fast relative to extinction — we can predict, on purely deductive grounds, that responses may occasionally be conditioned by reinforcers that are actually occurring at random. This phenomenon, termed superstition, has been demonstrated empirically in animals. If a hungry animal
is intermittently given food, independently of what it is
doing, it will nevertheless come to engage in some stereo-
typed act. In the original demonstration of animal super-
stition, the experimenter left to chance which act would
be accidently reinforced. In a subsequent demonstration,
however, it was shown that by first training an animal to
engage in some act and then giving food randomly, the ex-
perimenter could select a particular form for the super-
stition. The presentation of food to an animal possessing
a dominant form of response served simply to augment and
maintain the dominance. It was further pointed out that
when particular aspects of a response are explicitly re-
inforced, other, non-instrumental aspects are likely to
be inadvertently reinforced as well. For example, a
pigeon that is explicitly taught to peck a disk at a cer-
tain location and with a certain minimal force, also learns
incidentally to peck at a particular rate and with a nar-
rowly defined topography. As long as these non-instru-
mental aspects of the behavior are in temporal contiguity
with the reinforcer and are conditionable dimensions of
behavior, they will become just as stereotyped as the
essential aspects of the behavior.

In extrapolating these ideas to human behavior, we find
first of all, that human superstition are most closely
paralleled by accidentally-reinforced response-dominances.
Because most human superstitions are conventional modes of
responding, — modes that are, by one means or another, taught to new members of a culture by the older members — people in a particular culture will share predispositions toward particular superstitions rather than toward others. Secondly, although there is a human parallel to the simple superstitions of animals it is probably not what we usually call superstition. The superstitions of an animal are intrinsically idiosyncratic and entirely dependent upon the personal history of that animal. In human behavior, such idiosyncratic forms of responding are usually termed compulsive or obsessive. Finally, the so-called style evident in some kinds of human behavior seems to be based in part on the accidental reinforcement of non-instrumental aspects of instrumental behavior. For example, the distinctiveness of an individual person's handwriting involves the nonessential features of penmanship and is probably by accidents of reinforcement."

REINFORCEMENT, INTERMITTENT


"In general, behavior which acts upon the immediate physical environment is consistently reinforced. We orient ourselves toward objects and approach, reach it, and seize them with a stable repertoire of responses which have
uniform consequences arising from the optical and mechanical properties of nature. It is possible, of course, to disturb the uniformity. In a "house of mirrors" in an amusement park, or in a room designed to supply misleading cues to the vertical, well-established responses may fail to have their usual effects. But the fact that such conditions are so unusual as to have commercial value testifies to the stability of the everyday world.

A large part of behavior, however, is reinforced only intermittently. A given consequence may depend upon a series of events which are not easily predicted. We do not always win at cards or dice, because the contingencies are so remotely determined that we call them "chance". We do not always find good ice or snow when we go skating or skiing. Contingencies which require the participation of people are specially likely to be uncertain. We do not always get a good meal in a particular restaurant because cooks are not always predictable. We do not always get an answer when we telephone a friend because the friend is not always at home. We do not always get a pen by reaching into our pocket because we have not always put it there. The reinforcements characteristics of industry and education are almost always intermittent because it is not feasible to control behavior by reinforcing every response.

As might be expected, behavior which is reinforced only intermittently often shows an intermediate frequency of oc-
currence, but laboratory studies of various schedules have revealed surprising complexities. Usually such behavior is remarkably stable and shows great resistances to extinction. An experiment has already been mentioned in which more than 10,000 responses appeared in the extinction curve of a pigeon which had been reinforced on a special schedule. Nothing of the sort is ever obtained after continuous reinforcement. Since this is a technique for "getting more responses out of an organism" in return for a given number of reinforcements, it is widely used. Wages are paid in special ways and betting and gambling devices designed to "pay off" on a special schedules because of the relatively large return on the reinforcement in such a case. Approval affection, and other personal favors are frequently intermittent, not only because the person supplying the reinforcement may behave in different ways at different times, but precisely because he may have found that such a schedule yields a more stable, persistent, and profitable return."

**REINFORCEMENT, SCHEDULES OF**


"The most common systematic arrangements of response-reinforcement contingencies have been carried out in the laboratory under schedules that vary the proportion of
reinforced responses or the time intervals after which reinforcement can be obtained. These schedules have been shown to modify the probability of the occurrence of a given response and the characteristic sequence and form of the selected behavior. Ferster and Skinner (1957) provide an extensive description of effects of various reinforcement schedules on the speed of acquisitions of a response, the strength at which it is maintained, and the decrease or decay of an established response. Discriminative stimuli often signal which specific schedule is in effect for a given response. In social behavior such discriminations are often associated with the characteristics of the persons controlling the reinforcing event. Children will respond at different rates for a father who is known to be conservative in rewarding behavioral output than for a mother whose praise and approval flows generously for each small accomplishment of her child. The predominance of intermittent reinforcement schedules, with less than 100% reinforcement, and of constant shifts in schedules introduces considerable variability in social behaviors. Often a person acts inappropriately because he may not know the particular schedule on which other people base reinforcement of his behavior.

Schedules of reinforcement may overlap in complicated ways. Multiple schedules may be determined not only by the person's momentary behavior but also by the output and
nature of the preceding responses. In animal research it has been clearly demonstrated that discriminative stimuli signalling which alternative schedule is in effect immediately modify a laboratory animal's rate of response. Shift in schedules of concurrent existence of multiple schedules usually are not directly signaled in ordinary human interactions. The numerous experiments on the effects of reinforcement schedules provide a basis for regulation of response rate in human behavior modification and also serves as a reminder of the changeability and complexity of the response-reinforcement relationship in the assessment of human behavior. Maintenance of a given response rate not only is determined by its consequence but also by the particular schedule under which the consequence is administered."

REFERENCE


REINFORCEMENT, SOCIAL


"Many reinforcements require the presence of other people. In some of these, as in certain forms of sexual and pugilistic behavior, the other person participates merely as an object. We cannot describe the reinforcement
without referring to another organism. But social reinforcement is usually a matter of personal mediation. When a mother feeds her child, the food, as a primary reinforcer, is not social, but the mother's behavior in presenting it is. The difference is slight — as one may see by comparing breast-feeding with bottle-feeding. Verbal behavior always involves social reinforcement and derives its characteristic properties from this fact. The response, "A glass of water, please," has no effect upon the mechanical environment, but in a appropriate verbal environment it may lead to primary reinforcement. In the field of social behavior special emphasis is laid upon reinforcement with attention, approval, affection, and submission. These important generalized reinforcers are social because the process of generalization usually requires the mediation of another organism. Negative reinforcement - particularly as a form of punishment - is most often administered by others in the form of unconditioned aversive stimulation or of disapproval, contempt, ridicule, insult, and so on.

Behavior reinforced through the mediation of other people will differ in ways from behavior reinforced by the mechanical environment. Social reinforcement varies from moment to moment, depending upon the condition of the reinforcing agent. Different responses may therefore achieve the same effect, and one response may achieve different ef-
fects, depending upon the occasion. As a result, social behavior is more extensive than comparable behavior in a nonsocial environment. It is also more flexible, in the sense that the organism may shift more readily from one response to another when its behavior is not effective."

REINFORCER, NEGATIVE (S⁻)

STIMULUS, AVERSIVE (S⁻)


"Negative reinforcement is employed in personal control in the aversive cry of the child and the nuisance value of the behavior of an adult. Control as achieved by making the withdrawal of these aversive stimuli contingent upon the response to be strengthened. Forgiveness and acquittal are similarly reinforcing. The bully who pommels another boy until he cries "Uncle!", the police who employ the third degree to obtain a confession and the nation which makes war until the enemy surrenders, exemplify the same use of aversive stimulation. Conditioned aversive stimulation used in the same way is exemplified by the "dare" or by other ways of shaming someone into acting."

REINFORCER, POSITIVE (S⁺)

Watson, D. L. & Tharp, R. G. Self-directed behavior; Self-
"A positive reinforcer is anything that will increase the occurrence of the behavior that it follows. Reinforcers can be things, people, or activities. A "thing" reinforcer might be a doughnut, a five-dollar bill, a new dress, a fancy shirt, a stereo record - anything you want or would like to have. A "people" reinforcer would be something like being able to go on a date with your girl friend, talk to your boy friend on the phone - spend time with anyone you enjoy. An "activity" reinforcer is any event that you enjoy - playing a game, going to a movie, and so on. Sometimes you treat yourself to a movie. Or you buy a good meal at a restaurant. Maybe you "do nothing" - talk with friends, loaf. Usually these kinds of potential reinforcers are not limited to any one behavior or situation. You may just feel like going out for a few beers. Any kind of special occasion like this can be used as a reinforcer. The task is simply to connect the occurrence, contingently, to the target behavior.

The range of reinforcers is potentially as wide as the range of objects in the world, as wide as the range of human activities.

(...) To demonstrate the variety that is possible, a partial list of the reinforcers used by our students follows:
taking bubble baths
making love
going to a movie or a play
going to the beach
mountain climbing
smoking pot
smoking cigarettes
spending time at a favorite hobby
spending money
playing records
listening to the radio
eating favorite foods
going out "on the town"
playing sports
getting to "be the boss" with a girl friend or boy friend
spending extra time with a friend
"spoiling" or "pampering" oneself
reading pornography
reading mystery stories
taking long breaks from work
putting on makeup
not going to work
"doing anything I want to do"
going to parties
being alone
"doing only the things I want to do, all day long"
"not doing my duty sometimes"
goofing off
watching TV

RELAXATION


"The method of relaxation taught is essentially that of Jacobson but the training takes up only about half of each of about six interviews — far less time than Jacobson devotes. The patient is also asked to practice at home for a half-hour day.

The first lesson begins with the therapist telling the patient that he is to learn relaxation because of its beneficial emotional effects. He is then directed to grip the arm of his chair with one hand to see whether he can distinguish any qualitative difference between the sensations produced in his forearm and those in his hand. Usually he can, and he is asked to take note of the forearm sensation as being characteristic of muscle tension. He is also enjoined to remember the location of the flexors and extensors of the forearm. Next, the therapist grips the patient's wrist and asks him to pull, making his aware of the tension in his biceps; and then, instructing him to push in the opposite direction, draws his attention to
the extensor muscles of the arm.

The therapist now again grips the patient's wrist and makes him tense the biceps and then relax it as much as possible, letting go gradually as the therapist's hand comes down. The patient is then told to "keep trying to go further and further in the negative direction" and to "try to go beyond what seems to you to be the furthest point". He may report sensations like tingling and numbness which often accompany relaxation. When it appears that the patient has understood how to go about relaxing he is made to relax simultaneously all the muscles of both arms and forearms.

As the second lesson in relaxation, the patient is told that from the emotional point of view the most important muscles in the body are situated in and around the head, and that we shall therefore go on to these next. The muscles of the face are the first to be dealt with, beginning with the forehead. This location lends itself to demonstrating to the patient the steplike manner in which tension is decreased; and I do this by contracting the eyebrow-raising and the frowning groups of muscles in my own forehead very intensively simultaneously, and then relaxing by degrees. The patient is then made aware of his own forehead muscles and given about ten minutes to relax them as far as possible. Patients frequently report spontaneously the occurrence of unusual sensations.
in their forehead, such as numbness, tingling, or "a feeling of thickness, as though my skin were made of leather". These sensations are characteristic of the attainment of a degree of relaxation beyond the normal level of muscle tone. At this session attention is drawn also to the muscles in the region of the nose (by asking the patient to wrinkle his nose) and to the muscles around the mouth (by making him purse his lips and then smile). After a few minutes he is asked to bite on his teeth tensing his masseters and temporales. The position of the lips is an important indicator of successful relaxation of the muscles of mastication. When these are relaxed, the lips are parted by a few milimeters. The masseters cannot be relaxed if the mouth is kept resolutely closed.

As the third lesson, attention is drawn to the muscles of the tongue, which may be felt contracting in the floor of the mouth when the patient presses the tip of his tongue firmly against the back of his bottom incisor teeth. Thereafter, with active jaw-opening, infra-hyoid tensions are pointed out. All these muscles are then relaxed. At the same session, the tensions produced in the eye muscles and those of the neck are noted and time given for their relaxation.

Fourth lesson deals with the muscles of the shoulder girdle the fifth with those of the back, thorax and abdomen
and the sixth with those of the thighs and legs. A procedure that many patients find helpful is to coordinate relaxation of various other muscles with the automatic relaxation of the respiratory muscles that takes normal exhalation."

REFERENCE


RELIABILITY


"The reliability index is to some degree a function of how it is calculated. Suppose we have data from two observers showing the frequency of a class of events taken over 1 hr. Unless the sums obtained by each observer are equal, the smaller sum is divided by the larger to obtain a percentage of agreement. If the sums are identical the reliability index would be 100. This method is often used when the investigator is interested in frequencies per se., since the measures obtained gives only the amount of agreement over the total number of events observed. It does not indicate whether the two observers were recording the same event at exactly the same time. Thus, it might be possible that one observer was recording few behaviors
during the first half hour and many during the second, while the second observer was doing just the opposite. To ascertain whether this is the case, one could divide the period of observation into small segments and calculate the reliability of each. Agreements over progressively smaller segments give confidence that the observers are scoring the same event at the same time. One may assess the agreement over brief intervals such as 5 or 10 sec. Reliability is calculating by scoring each interval as agree or disagree (match or mismatch) and dividing the total number of agreements by the number of agreements plus the number of disagreements. Note that one may score several agreements or disagreements in an interval if a number of events are being recorded simultaneously as shown in Tables 1 and 2, on page 121. In this case the interval is broken down according to the number of different events recorded, with each event scored as a match or mismatch.

The reliability index may also be influenced by the frequency of response under study. When a behavior is displayed at a very low rate, the observer will record few instances of occurrence and many of nonoccurrence. In this situation the observers could disagree on the occurrence of the behavior yet still show high reliability.
due to their agreement on the large number of intervals where no behavior was recorded. A similar problem exists with regard to high-frequency behaviors. Here, however, the observers may disagree on the nonoccurrence of the behavior and agree on occurrence, because of the frequency of the latter. The problem may be resolved by computing not one but two reliability coefficients, one for occurrence and one for nonoccurrence.

In some cases the requirement of perfect matching of intervals may be relaxed slightly. Thus, behaviors recorded within one interval (specially if the interval is short) may also be considered as instances of agreement for reliability purposes. A technique of noncontinuous observing may also increase reliability (O'Leary, O'Leary, and Becker, 1967). In this procedure the observers record for shorter portions of time. For example, instead of taking continuous 10-sec observations, the observer might record for 10 out of every 15 sec or for 20 out of every 30 sec. During the period in which the observer is not attending to the child, he should be recording the behavior just observed.

The use of a second observer does not insure high reliability of recording; it is possible for both observers to agree on the scoring of certain events and at same time be incorrect (Gewirtz and Gewirtz, 1964). Both observers might record some events which should not be noted and
ignore others which should. Hence, a third observer might be used on occasion to determine if this possibility exists."

Table 1

Sample line from a data sheet of nursery school girl who changed activities with high frequency.

|    |    |    |    |    | x  | x  |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| P  | P  | P  | P  | P  | E  | E  | E  | E  |    |    |    |    |    |    |    |    |    |    |    |    |    |

Table 2

Sample Line from a Data Sheet of Nursery School Boy Displaying Aggressive Behaviors

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"In Table 1, which is a segment of a data sheet for a nursery school girl who changed activities with high frequency, entries were made in the boxes in the top row to indicate occurrences of vocalizations (V). Entries were made in the middle row to show proximity (P) or physical contact (T) with another person, and in the bottom row to indicate contact with objects (E) or with children and whether the interaction was parallel play (A) or shared
play (C). Other marks and symbols are added in accordance with the problem studied. For example, each single bracket in Table 1 indicates leaving of one activity and embarking on another. During the 6-min period in which records were taken (24 15-sec intervals), the child changed her activity 12 times. During that time the teacher gave approval five times contingent upon her verbal or proximity behavior as indicated by X's above the top line (10, 11, 16, and 18). A tally of the data indicated that she spent most of the 6-min period alone or in close proximity to another child, sometimes on the same place of play equipment. During three intervals (16, 17, and 18) she talked (V), touched (T), and engaged in physical interaction with another child (C). Even though rate of activity change, and not peer interaction, was the subject of the study, the other data on social behavior provided interesting information: decline in rate of activity change was related to an increase in rate of appropriate peer behavior.

This code can be readily modified to handle more complex interactions. For example, it was used to record the behavior of a nursery school boy who shouted epithets, kicked, and hit other children. Ordinarily these aggressive acts would appear in the record sheets undifferentiated from a nonaggressive interaction. To differentiate them from other behaviors the symbol letter was circled if the behavior met the criteria of an aggressive act. As shown in Table 2, intervals 13, 22, and 23 contain a "V" with a circle, which indicates aggressive verbalizations, while intervals 19 and 20 contain a "T" with a circle, which indicates physical "attack" (actual hitting, kicking, or pinching). Another bit of information was incorporated in the recording system. The letter "B" was entered in the fourth row to indicate that the child was playing with or being aggressive to a specific nursery boy named Bill. This additional notation was made midway in the study when teachers observed that the subject and Bill usually behaved aggressively toward each other. Data collected before this change served as a baseline against which to judge the effects of changing social contingencies. Subsequently, teachers gave approval contingent on nonaggressive interactions between these boys as shown by the X's above intervals 6, 7, 8, 11, 12, 17, 18, 26, 27, and 29.

REFERENCES


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RESPONSE


"The behavioral definition of a response has often been confused with a purely physicalistic definition of a body movement. Contemporary behaviorists include the full range of human motor and verbal responses as a legitimate object of study for psychology. However, two important methodological limitations are observed. First, social and verbal responses are considered responses in their own right, not as substitutes for mental events, descriptions of internal states, or expressions of other inferred processes. For example, a man's report of some inaccessible event within his skin, such as his state of hunger or anxiety, is considered to be multiply determined. It may be under control of some physiological events or it may be under control of the audience to whom the subject addresses these remarks. At any rate, it remains a verbal response regardless of the actual congruence with other events that it purports to describe.

Second, behavioral processes that are normally covert, such as thinking, perceiving, controlling oneself, or deciding, are events that are subject to experimental anal-
ysis only when the responses can be brought under experimental control, at least under special conditions in the laboratory. Skinner (1953) discussed the difficulties of dealing with private events of this type in a natural science, but recent research has demonstrated the feasibility of exploring such phenomena with the tools of modern psychology. Since many social and clinical behaviors involve normally covert responses, additional care must be taken with these responses only when they can be directly measured, observed, or defined in such a way that there need be no recourse to hypothetical intervening events that are not demonstrable.

Whether the behaviors examined are ordinarily overt or covert, responses are defined by the experimental operations performed to measure and manipulate them. From the totality of a naturalistic act the experimenter abstracts one property to record as the indicant of the response in question. The response is entirely defined by this measurement operation in experimental research. The difficulty posed for clinical behavior modification is in achieving similar clarity of response specification."

REFERENCE

RESPONSE, CONDITIONED (CR)
RESPONSE, UNCONDITIONED (UCR)
STIMULUS, UNCONDITIONED (UCS)


"A series of studies by Solomon and Wynne (1953) investigated avoidance responses in dogs, using high intensity shock as the UCS, with a shuttle box divided into two compartments by a removable barrier used to control the CS and UCR. A dog was placed in one compartment, the CS was presented, the upper part of the barrier was removed, and ten seconds later shock was administered. Solomon and Wynne found that for the first few trials, the animals attempted to escape (UCR) only when shocked, but that soon the dogs were executing avoidance responses (CR), and with increasing speed. It is significant that response latency continued to decrease even after the animal managed to avoid shocks. Even with as many as six hundred trials, animals showed no sign of extinction. If a dog was prevented from jumping across the barrier, it showed intense emotional reactions."

REFERENCE

"Under special conditions, satiation, the excessive consumption of positive stimuli, can be an aversive state. The effect of forced food-intake is an example of this situation. In clinical use, Ayllon (1963) found satiation successful in eliminating a disturbing symptom, towel-hoarding, in a institutionalized schizophrenic by what amounted to stuffing her room full of towels. Extinction can be considered aversive if omission of reward is an effective stimulus in attenuating behavior. Time out is a parallel operation; in this procedure, access to all positive reinforcement is blocked for a given period of time, contingent upon occurrence of some undesired behavior. The difference between extinction and time out is mainly that in the latter reinforcement is also withheld for all competing responses. Consider a child who displays frequent temper tantrums at the grocery store toy counter. An extinction procedure would focus on discovering and eliminating the positive reinforcers maintaining this behavior. A time out procedure, on the other hand, not only eliminates the positive reinforcement maintaining the tantrums (for example, mother's attention or purchase of a toy) but temporarily also removes the opportunity to obtain any
other positive reinforcers. Mother might isolate the child for a brief time in the car outside, removing all opportunities for him to gain her attention and praise as well as to engage in other pleasant activities in the store. (...) extinction and time out are contingent upon temper tantrums and tend to reduce their frequency. Both are aversive for the child in the sense that positive reinforcers are removed. But time out is like a generalized reinforcer: it removes not only the toy and attention that tantrums formerly earned, but all other positive reinforcement as well.

Response cost involves not just the absence of positive reinforcement but its direct removal, and thus is most easily done with secondary reinforcers such as money, points, and so on. Here a response is followed by removal of reinforcers previously held by the person. For example, a mother might impose a fine on her child by taking away the nickel she had given him earlier. Response cost can also be manipulated by escalating the cost or effort required to obtain a given quantity of reward. The price of a food pellet for an animal may be increased by requiring a larger number of responses, greater pressure on a lever, or raising the quality criteria of a discrimination. This procedure has different effects than the first ("fining") method, although both ultimately result in severe response decrements."
SELF-CONTROL


"The term self-control is used to describe a response repertoire in which an individual can make responses to increase or decrease a response probability that is perceived as injurious to the individual himself or to others. It is said that an individual lacks SC if he is not able to change the probability of undesirable responses. It is said that he has good SC if he is able to make responses to inhibit undesirable responses which are likely to occur under certain conditions.

It can be said of a heavy drinker, for instance, that he lacks self-control because he is not able to make responses to reduce the frequency of his drinking behavior. A student who says he just can't make himself sit down and study is simply not able to increase the frequency of study responses (i.e., sitting at his desk and reading a text). In other words, he has no self-control in that situation. If an obese individual is presented with great amounts of delectable food at a party but eats little or none of the food, observers at the party may remark that,
at the moment, the obese person is exerting good self-control.

In each of these examples, self-control is conceptualized as the response of an organism made to control the probability of another response. Concepts such as volition, inner direction, and will power are not viewed as scientifically useful since they are not as testable as hypotheses couched in terms of controlling response probability."

**SHAPING**


"A major corollary of reinforcement is a procedure by which a reinforcing agency produce progressively complex forms of behavior by small increments from a preceding simpler form. A commonly used animal-demonstration experiment illustrates the process. If we wish to teach a pigeon to peck at a small disc on the wall of his chamber, we first establish a reinforcer by presenting grain to the bird whenever the grain hopper is illuminated. The bird soon comes to approach the hopper only when it is illuminated and it is then possible to use the lighted hopper as a reinforcement. The bird faces in the direction of a small disc, is reinforced, and the effect is an im-
mediate increase in the tendency to face the disc. Reinforcement is then withheld until the bird nods slightly in the direction of the disc, and the reinforcement of this slightly more complex form increases its frequency. When the bird is nodding in the direction of the disc, the variation in the magnitude of the nod is noted and the reinforcement is shifted in the direction of those nods bringing the bird's head closer to the disc. By continuing the process, the pigeon can soon be made to strike the disc.

The same process occurs in the development of human behavior, particularly in the formative years. The process by which complex forms are generated is relevant to the therapy situation whenever a patient is lacking parts of the complex repertoire necessary to achieve reinforcement from the complicated social environment. Simply telling a patient what kind of performance is necessary for reinforcement will seldom generate the required complex performance. The situation is analogous to the golfer who would like to drive the ball 250 yards. The necessary performance must be acquired in small steps, beginning with an existing repertoire and approximating the final performance with intermediate, temporary reinforcements.

The therapist is in a position to "shape" behavior in a patient by beginning with a performance already in his repertoire and exposing him to selected portions of his
environment designed to generate the new, more complex form. The therapist can select an environment to the patient in which a reinforcing agent is operating will reinforce with a high degree of probability a variation in the patient's performance in the direction of the desired, more complicated form.

For example, consider the hypothetical case of an individual who has never acquired the performance necessary for facile enough social contact. The patient's current repertoire contains enough verbal behavior to permit him to talk to the therapist. A first step in this hypothetical case might be to send the patient to a college campus one morning and have him say "Good morning" to several people he passes. The environment of the campus is chosen to almost guarantee the reinforcement of this response. This kind of exercise would also illustrate to the patient general verbal processes in human behavior where it is possible to command a verbal response from an audience. In a similar vein, the complexity of the verbal repertoire of the individual could be increased further. Commands, such as "Could you please tell me the time", also produce almost inevitable responses in most situations; and if the rate of development of the new behavior is made small enough from the preceding forms which the patient is emitting successfully, there would be no difficulty from non-reinforcement because of inaudible remarks, mumbling, or
other distortion of the behavior which would prevent the reinforcement."

STIMULUS, HIERARCHY


"Mrs. A., aged 24 years, had been married for two and one half years, during which time she claimed to have had coitus on less than two dozen occasions. She always experienced violent dyspareunia during intercourse as well as "disgust and anxiety at the whole messy business". She could tolerate casual kissing and caressing without anxiety and at times found these experiences "mildly pleasant". The background to her problem was clearly one of puritanical upbringing, in which much emphasis was placed on the sinful qualities of carnal desire. Mrs. A's husband had endeavoured to solve their difficulties by providing his wife with books on sex techniques and practices. Mrs. A. had obligingly read these works but her emotional reactions unchanged. She sought treatment of her own accord when she suspected that her husband had developed an extramarital attachment.

After diagnostic interviews and psychometric tests, systematic desensitization was administered according to the following hierarchy:
1) Dancing with and embracing husband while both fully clothed.
2) Being kissed on cheeks and forehead.
3) Being kissed on lips.
4) Sitting on husband's lap, both fully dressed.
5) Husband kisses neck and ears.
6) Husband caresses hair and face.
7) Shoulders and back being caressed.
8) Having buttocks and thighs caressed.
9) Contact of tongues while kissing.
10) Embracing while semi-clothed, being aware of husband's erection and his desire for sex.
11) Breasts being caressed while fully clothed.
12) Naked breasts being caressed.
13) Oral stimulations of the breasts.
14) Caressing husband's genitals.
15) Husband's fingers being inserted into vagina during precoital love play.
17) Having intercourse in the nude under the bed covers.
18) Having intercourse in the nude on top of a bed.
19) Having coitus in the nude in a dining room or living room.
20) Changing positions during intercourse.
21) Having intercourse in the nude while sitting on husband's lap.
Variations in the brightness of lighting played a prominent part in determining the patient's reactions. After four desensitization sessions for instance, she was without anxiety able to visualize item 8 (having her buttocks and thighs caressed) if this was occurring in the dark. It required several additional treatments before she was able to tolerate this imagined intimacy under conditions of ordinary lighting."

SYMPTOM


"The learning model attacks deviant behaviors directly. Emphasis on behavior in its environmental context orients the learning approaches toward changing a person's observable actions, instead of attempting modification of hypothesized personality structures, such as traits or impulses. This strategy results in an assault on deviant responses or symptoms, not underlying mental disease processes that are said to cause symptomatic behavior. The word "symptom" is used in this text for convenience; it simply indicates any target response selected for change. In our usage, it does not imply a surface indicant of underlying causes or a disease state. Recognition that the environment plays a crucial role in determining behavior implies that the appearance of symptoms may be restricted
to an identifiable range of situations and is not invariably characteristic of the person's behavior."

THERAPY, AVERSION


"Aversion therapy or avoidance therapy is, in broad, a mode of application of the reciprocal inhibition principle to deconditioning motor habits or thinking habits. Thus, its uses are largely in the treatment of obsessions, compulsions, fetishes and habits of attraction to inappropriate objects, e.g. sex objects of the same sex. It also has some value in the control of drug addictions, but as will be pointed out, in a way that is not based on fundamental knowledge of drug habits.

Aversion therapy is not often the behavioral treatment of first choice, except perhaps in certain cases of drug addiction. Usually the compulsive or other behavior to which aversion therapy might be applied is found to have a basis in neurotic anxiety, which should, as a rule, be deconditioned first. If this is done, the compulsive behavior may disappear, having required no special attention. On the other hand, even when aversion therapy succeeds in removing a compulsion, deconditioning of anxiety is still likely to be needed. The continued presence of the neurotic anxiety can provide a basis for "symptom substi-
tuition". As an example - some years ago I was consulted about a woman whose compulsive eating had been overcome by aversion therapy and who had thereafter become severely depressed. Her neurotic anxiety habits had not been removed, and the depression was the evident result of her having been deprived of her anxiety-reducing activity of eating.

The essence of aversion therapy is to present, in the context of an undesired response, the stimulus to a strong avoidance response, the most typical stimulus being strong electric shock. In eliciting the strong avoidance response, the shock is likely to inhibit the undesirable response. Whenever it does so, there will be a diminution next time in the evocation of the latter response by the stimulus that evoked it. In other words, a measure of conditioned inhibition of that response will be established - a weakening of the habit - of the bond between the response and its stimulus. At the same time, that stimulus is likely to be to some extent conditioned to the response constellation which the shock evoked."

THERAPY, IMPLOSION


"Another line of investigation relevant to the contribution to desensitization of graded stimuli is the work

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of Stampfl and his colleagues (1967) in their use of an intensive extinction procedure called implosion therapy. Stampfl, like Wolpe, assumes that neurotic symptoms are learned avoidance responses maintained by anxiety reduction. Stampfl, however, interwaves this assumption and his extinction procedure with traditional psychodynamic formulations. The contents of scenes to be imagined contain many psychoanalytic interpretations of the symptoms. But the most important difference between implosion and desensitization lies in the fact that counter-conditioning of relaxation and a graded hierarchy are not used. In fact, the most intense level of fear-arousing situation is immediately presented. Stampfl rests the implosion model on the original Pavlovian extinction principle, which describe the reduction in response (CR) as a result of presentations of the CS without the UCS. The extinction of an emotional response is expected to proceed most quickly when the stimulus conditions in extinction are most similar to those associated with the original acquisition situation (Stampfl and Levis, 1967). Therefore, the patient is presented with scenes designed to evoke a maximal level of anxiety and is asked to experience them with genuine emotion and effect. The procedure is repeated until a diminution of anxiety is noted. Hogan’s (1966) description of a typical session implies some grading of CS, but not to the
degree involved in desensitization. The intensity of the CS is portrayed well beyond the level reached in any desensitization hierarchy.

A person afraid of snake would be requested to view himself picking up and handling a snake. Attempts would be made to have him become aware of his reactions to the animal. He would be instructed to feel how slimy the snake was. Next, he would be asked to experience the snake crawling over his body and biting and ripping his flesh. Scenes of snakes crushing or swallowing him, or perhaps his falling into a pit of snakes would be appropriate implosions.

Similarly, an acrophobic would be requested to imagine himself falling off a high building or cliff, or perhaps be instructed to picture himself falling through space and in complete darkness. Ideally, the person should feel the impact of his body with the ground and view his crushed broked body. It is important that the therapist emphasizes how the person looks and feels throughout the scenes. If the client should recall an actual traumatic experience, the clinician should center succeeding imagery around that experience."

REFERENCES


THERAPY, REPLICATION


"Although not directly derived from vicarious learning research, techniques that are related, in principle, to observational learning methods have collectively been subsumed under the term replication therapy. Most of these methods share the following common features: the therapists arrangement of contrived situations, his use of verbal instructions, his deliberate control of the stimulus conditions to modulate intensity of evoked anxiety responses, and the opportunity for the patient to rehearse modeled responses. By partly or completely replicating problematic situations in the clinical setting, the therapist helps the patient to discover and try out new behaviors to improve his effectiveness. These new responses are open to selective reinforcement by the therapist or by a patient group. Many traditional techniques, such as psychodrama and fixed role therapy, as well as new approaches, such as behavior rehearsal techniques, utilize the mechanisms of vicarious learning for therapeutic purposes. The potential of deliberate application of vicarious learning methods for
training patients in improving their effective social interactions has barely been tapped. Even though the precise mechanisms of vicarious learning are not yet fully understood, the pragmatic utility inherent in modeling and shaping of imitative responses for removal of psychological difficulties promises to provide yet another important tool in the clinician's storehouse of therapeutic operations."
APPENDIX


PUNISHMENT


BASELINE

BASELINE, MULTIPLE

PROCEDURE, REVERSAL


RELIABILITY


PROMPTS


ASSERTIVE TRAINING

SELF-CONTROL

EXTINCTION


REINFORCEMENT

REINFORCER, GENERALIZED

SHAPING


GENERALIZATION


REINFORCEMENT, ACCIDENTAL

SUPERSTITION


BEHAVIOR, AVOIDANCE

BEHAVIOR, COVERT

BEHAVIOR, ESCAPE

CONTINGENCY CONTRACT

COVERANT

LEARNING, AVOIDANCE

LEARNING, ESCAPE

REINFORCEMENT, NEGATIVE

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REINFORCEMENT, POSITIVE


ANXIETY
CONSEQUENCE
DISCRIMINATION
EFFECT, LAW OF
EVENT, CONSEQUENTIAL
FADING
IMAGERY, AVERSIVE
IMITATION
LEARNING, VICARIOUS
MODEL
MODELING
MOLDING
REINFORCEMENT, SCHEDULES OF
RESPONSE
RESPONSE, CONDITIONED
RESPONSE, UNCONDITIONED
RESPONSE COST
SENSITIZATION, COVERT
STIMULUS, UNCONDITIONED
SYMPTOM
THERAPY, IMPlosion
THERAPY, REPLICATION
TIME OUT

ANALYSIS, BEHAVIORAL

DIAGNOSIS

MODEL, BEHAVIORAL


CHAIN

REINFORCER

REINFORCER, CONDITIONED

REINFORCER, PRIMARY

STIMULUS, CONDITIONED

STIMULUS, DELTA

STIMULUS, DISCRIMINATIVE

STIMULUS, ELICITING


STIMULUS, HIERARCHY


ASSESSMENT


EVENT, ANTECEDENT

PHOBIA


CONDITIONING, INSTRUMENTAL
CONDITIONING, OPERANT
DEPRIVATION
FEED BACK
REINFORCEMENT, DIFFERENTIAL
REINFORCEMENT, INTERMITTENT
REINFORCEMENT, OPERANT
REINFORCEMENT, SOCIAL
REINFORCER, NEGATIVE
SATIATION
STIMULUS, AVERSIVE


COMMUNITY, MENTAL HEALTH
CONTROL, ENVIRONMENTAL
PREMACK PRINCIPLE


MODEL, MEDICAL
MODIFICATION, BEHAVIOR
THERAPY, BEHAVIOR

BEHAVIOR, INCOMPATIBLE

BEHAVIOR, OPERANT

BEHAVIOR, RESPONDENT

BEHAVIOR, TARGET

CONTINGENCY

CONDITIONING, CLASSICAL

CONDITIONING, PAVLOVIAN

CONDITIONING, RESPONDENT

INTERVENTION PLAN

POINT SYSTEM

REINFORCER, POSITIVE

SELF-MODIFICATION

TOKEN MENU

TOKEN SYSTEM


DESENSITIZATION, SYSTEMATIC

RELAXATION

Wolpe, J. *The practice of behavior therapy*. Pergamon, 1969

COUNTER CONDITIONING

FLOODING

PARADOXICAL INTENTION

RECIPROCAL INHIBITION and THERAPY, AVERSION.