Concrete and Symbolic Thinking

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Yochelson & Samenow, *The Criminal Personality* (1976)

Criminal Personality Element #12?, *Concrete Thinking:*

A conceptual deficiency with respect to responsibility.

Time

Religion

Truth

Honor

Family

Work

Education

Money

Happiness

Obligation

Friendship

Discussed only in concrete terms, regardless of their education. Crime itself has little conceptualization. Each criminal act is separate, requiring additional consideration.

Conceptualization of a family, career, social institutions, foster responsibility.

Religion? A few details from his catechism, some proverbs, Bible stories.

Conceptualization of religion in terms of personal ethics is nonexistent, because it is antithetical to crime.

His focus is limited to a series of concrete events. He will not learn from experience if he perceives only individual events and does not generalize or conceptualize from them.

He can see all the trees (the concrete details) but not the forest (the major themes and concepts). He misses the Big Picture because he is attending only to a few details. Later, when confronted with a similar situation, he focuses rigidly on the concrete details, ignoring the context and makes a faulty decision.

Examples: Money Launderers….Bank Robbers vs. Drug Dealers.

As each concrete event is presented, generalize it to identical or similar experiences. Generalize and conceptualize to a variety of people, events, institutions and life itself.

Money: Money in a criminal’s life comes and goes easily. Tips big, lends big, gives it away ostentatiously. Enhances his sense of power and self-opinion.

Corrective applied: We must help him gain experience in managing money and acquire a personally- and other-beneficial concept of money.

Family: He commits some thoughtless act, supplying all concerned with excuses and rationalizations. Generalize to a thorough and nuanced explanation of family.

Conceptual thinking is developed as the criminal acquires experience in living responsibly. No concept of family because he chose not to have one. No concept of money because he never valued it. No concept of morality because his way of life was opposed to it.

Can do it when they want. Generalizing what I did to his enormous crimes.

Other personality disorders: How much Lack of Generalization do you find there?

He knows the notes, but not the music.

He’s a mile wide, but in inch deep.

**Background**

“Instances of this kind are so plentiful everywhere, that if I add one more, it is only for the pleasant oddness of it. It is of a young gentleman, who, having learnt to dance, and that to great perfection, there happened to stand an old trunk in the room where he learnt.

The idea of this remarkable piece of household stuff had so mixed itself with the turns and steps of all his dances, that though in that chamber he could dance excellently well, yet it was only whilst the trunk was there; nor could he perform well in any other place, unless that or some such other trunk had its due position in the room” (Locke, 1690).

Pavlov:

**Generalization**:

A tone of 1,000 hertz is a conditioned stimulus, many other tones spontaneously acquire similar properties, such properties diminishing proportionally to the intervals of these tones from 1,000, a neurological phenomenon.

Hull (1943) rejected Pavlov, three types of generalization:

**\*\*Stimulus Generalization**: Reaction in the original conditioning becomes connected with a considerable zone of stimuli other than, but adjacent to, the (original) stimulus

**\*\*Response Generalization**

**\*\*Stimulus-Response Generalization**

Diminished emphasis on underlying neurological mechanisms and greater emphasis on observable, behavioral phenomena.

Skinner rejected theoretical or underlying neurological mechanisms and treated generalization as a purely descriptive term. Avoided any treatment of generalization as a process.

**Law of Induction:**

1938, a change in the strength of a reflex may yield a similar change in a related reflex, with the assumption that the common stimulus or response properties account for this relationship. A similar reflex occurs as a concomitant of common properties of stimuli.

Several stimuli may be effective in controlling behavior although the behavior may have been previously brought under the control of only one of these stimuli.

Changes from a descriptive term and explanatory concept to describing an empirical phenomenon.

Gone are the underlying mechanisms and processes (spread of cortical excitation) of Pavlov and the theoretical processes and mechanisms (spread of habit strength) suggested by Hull.

Brown, Bilodeau and Baron (1951), an organism that has been trained (or instructed) to respond to a designated stimulus will also respond under certain specifiable conditions, to formerly neutral stimuli on which no training has been given.

1960s, stimulus generalization became a popular area of research for operant psychologists. Pigeons.

Visual gradients became viewed as empirical, rather than theoretical entities. Demonstrations of generalization gradients became a means of displaying the control exerted by the properties of various stimuli.

**Stimulus control:**

Extent to which the value of an antecedent stimulus determines the probability of occurrence of a conditioned response.

Measured as a change in response probability that results from a change in stimulus value. The greater the change in response probability, the greater the degree of stimulus control.

In current parlance, “generalization” tends to be used loosely to refer to the emission of trained behaviors in non-training settings. These behaviors could range from simple behaviors of a child to complex verbal and cognitive behaviors of an adult.

**Generalization:**

Occurrence of relevant behavior under different, non-training conditions (across subjects, settings, people, behaviors, and/or time) without the same conditions as in training.

Change across diverse stimulus conditions, responses and time without comprehensive programming.

Occurs when that behavior occurs outside of the learning environment. Happens across Settings, Time and People. Occurs without relearning.

**Response Maintenance:**

Continuation of a learned behavior after the intervention has been removed. If Jamie continues to complete her homework at the criteria level, then response maintenance has occurred.

**Setting/Situation Generalization**:

When the behavior of interest occurs in a setting other than in the one that it was taught (instructional setting).

**Response Generalization:**

Extent to which the learner can issue a behavior that is equal to the behavior that was taught. Stimuli that occasion novel responses. Learn how to use a telephone and generalize that to how to use a walkie talkie.

**Over-generalization:**

A behavior under stimulus control is too broad. “Undesired response generalization” and results when a learner’s training results in generalization that causes poor performance or undesired results. A child learns to open the door when the doorbell rings, if he also opens the door to another ring, that would be over-generalization.

**Stimulus Generalization**:

Inability to discriminate between different stimuli. A child calls her father “daddy” and then calls all men “daddy”. She has not successfully discriminated her father from all men. Different stimuli that evoke the same response.

**Stimulus Discrimination**:

When stimuli evoke a different response. If you can tell a poisonous snake from a non-poisonous one.

**External validity**:

To what populations, settings, treatment variables, and measurement variables can this effect be generalized? Based upon inductive inferencing - generalizing from samples of persons and settings to populations of samples and persons.

**Generalizability #2:**

Extent to which a treatment effect observed in one setting will be reproduced in dissimilar settings. The generalization from an observation to other classes of observations, or the reliability of a measure. Emphasis is on the dependent variable, not on the relationship between independent and dependent variables. Thus, generalizability differs from external validity and generalization.

**Transfer:**

Acquired almost as many meanings over the years as generalization. Thorndike and Woodworth (1901), transfer of training across mental functions. Controlling stimuli are produced by the individual as verbal representations, abstractions of physical stimuli or concepts.

**Transfer and Generalization**:

**Transfer**, accounting for the effects of training under one set of conditions

**Generalization**, performance under other conditions.

The terms differ with respect to how you conceptualize the controlling stimuli.

**Transfer,** control is verbally- or conceptually- mediated. Self-control training where rules or general principles are taught and applied by the client in a variety of settings.

**Generalization**, contingency management programs (classroom management programs, token economies) where contingency-shaped behavior is brought under the control of stimuli that vary along one or more dimensions. Stimulus control and variables which influence it.

**Extinction Testing**:

Subjects are randomly presented stimuli, with no responses being reinforced. Generalization gradients are plotted.

**Probe testing**:

Presentation of test stimuli between reinforced trials. Responding during presentation of the test stimuli is not reinforced.

However, responding during training stimulus presentations is maintained throughout testing and response strength to test stimuli is maintained.

Generalization gradients are then plotted in the same fashion as with extinction testing.

**Theory**

Traditionally, generalization was thought to be a passive phenomenon. Generalization was not seen as an operant response that could be programmed, but as a description of any behavior-change process.

A teaching operation repeated over time and trials inevitably involves varying samples of stimuli, rather than the same set every time. Evokes and reinforces varying samples of behavior, rather than the same set every time.

Predictable that newly-taught responses would be controlled not only by the stimuli of the teaching program, but by others somewhat resembling those stimuli. Thus, generalization was something that happened, not something produced by procedures specific to it.

Thus, discrimination that was understood as an active process and a technology of its procedures was developed and practiced extensively.

Generalization was considered the natural result of failing to discriminate adequately and remained a passive concept.

To actively program generalization, rather than passively to expect it as an outcome of certain training procedures, requires emphasis and effective techniques.

**Techniques**

**Train and Hope**

Most frequent. After a behavior change is achieved, any generalization across responses, settings, experimenters, and time, is documented or noted, but not actively pursued.

It is hoped that some generalization may occur, which will be welcomed yet not explicitly programmed. The generalization exhibited is hoped sufficient to meet the therapeutic goals of the client/program.

**Sequential Modification**

More systematic approach. A particular behavior change is achieved, and then assessed. If generalization is absent or deficient, procedures are initiated to accomplish the desired changes by systematic sequential modification (responses, subjects, settings, or experimenters).

Characterizes much of the actual practice of many behavior analysts. Systematized experimental procedure that formalizes and allows evaluation of therapeutic endeavors.

Tactic of scheduling behavior-change programs in every condition to which generalization is desired.

**Natural Maintaining Contingencies**

Most dependable of all generalization programming mechanisms: transfer of behavioral control from the teacher-experimenter to stable, natural contingencies where the subject lives.

Choose behaviors to teach that normally will meet maintaining reinforcement after the teaching. Become more prominent agents of their own behavior change.

**Train Sufficient Exemplars**

Teach an exemplar of the generalization lesson, another, and then another, until induction (generalization) occurs, using diversity of exemplars. Reflects the dimensions of the desired generalization.

**Train Loosely**

Teaching conducted with little control over the stimuli presented, maximizing transfer to other situations and forms of the behavior. Researchers always have attempted to maintain control and standardization of their teaching procedures, to allow for easy subsequent interpretation of results.

Changing to less rigid programming. When the goals and procedures of training are more widespread, so are the outcomes.

Allow variety in the conditions of training so that the client will not readily discriminate performance to a particular set of circumstances.

What has been frequently documented is the fact that focused training frequently has focused effects.

**Use Indiscriminable Contingencies**

Intermittent schedules of reinforcement are resistant to extinction. Resistance to extinction may be a form of generalization across time. If contingencies of reinforcement or punishment are indiscriminable, then generalization is improved.

Prevent the ready discrimination of contingencies.

**Program Common Stimuli**

If it is supposed that generalization will occur, make the experimental setting like the desired setting.

**Mediate Generalization**

A theoretical mechanism explaining generalization of highly symbolic learning. The most commonly used mediator is language.

However, verbal mediation can easily fail, especially in those situations in which the verbal mediators have little meaning (tightly restricted discriminative value) for the subjects.

**Train “To Generalize”**

If generalization is a response itself, then a reinforcement may be placed on it, the same as with any other operant. Learn one thing, taught to “see” another example of “the same thing.”

Instructions facilitate generalization. If a behavior is taught and generalization is not displayed, the least expensive of all techniques is to tell the subject about the possibility of generalization and then ask for it. “Instructed Generalization.”

***Exploit Current Functional Contingencies***

When reinforcement, punishment and extinction are working without artificial manipulation, exploit and use it. Many of these contingencies are positive and have been referred to as **natural communities of reinforcement.** Touching a hot stove.

**Natural consequences**

Teach behaviors that are likely to come into contact with powerful reinforcing consequences that do not need to be programmed by a therapist or behavior change agent.

**Recruit natural consequences**

Perhaps a behavior is not occurring at a sufficient frequency or with adequate skill. The dormant environment may be recruited to provide some potent consequences.

Some people have powers of observation inadequate to notice and pay off as desired.

**Modify maladaptive, rewarding consequences**

Inappropriate behaviors may be maintained by powerful consequences. Curtail these consequences, the termination of reinforcement will be an effective extinction contingency. Frequency of the maladaptive behavior will decrease.

Intervene to eliminate the maladaptive contingencies maintaining inappropriate behavior so that more appropriate behaviors can be developed through natural or temporarily artificial consequences.

**Reinforce occurrences of generalization**

Any occurrence of generalization that is desired and valued should be reinforced.

Take advantage of randomness and good fortune, and if possible, set up the conditions for generalization and reinforce it when it occurs.

**Stimulus Exemplars**

A condition related to the circumstances of training. The Trainer. The Setting.

If generalization obtained is related to the conditions of training, then more generalization is more likely with that trainer or in similar settings.

**Self-mediated physical stimuli**

A stimulus that is maintained and transported by the client. Use of a notebook that specifies how to perform in a certain setting.

The sophistication of the self-mediated stimuli may be as straightforward as the proverbial string on the finger or very complex…

**Self-mediated verbal and overt stimuli**

These tactics are verbalization, language and thought. Produced by the client across relevant settings.

**Treatment With Criminals**

1. Education/Group Setting
2. Disputation/Group Setting
3. Generalization of Skills/Performance

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