Developmental Behavior Analytic Therapy (DBAT)

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What is Developmental Behavior Analytic Therapy (DBAT)?

A Case

- *J* was a 22 year old research assistant, who had recently graduated from college with an above average grade point average (GPA)
- While in college, he did not assume ownership of his work.
  - He did his assignments for classes, because he was required to do them, and not because he chose to do them to advance his professional aims
- He lacked motivation, lacked dreams and goals. Following graduation, he took a year off and worked as a research assistant
  - That was more as a default position than to advance his career
  - In the beginning, he was disinterested and was working in a perfunctory manner
- He wanted to attend graduate school, but he was unsure in what field
  - He was vague about his long term career goals.

- His work habits were poor
  - Productivity was very low
  - Did not have a clear sense of a time frame to accomplish his goals. His work goals were not being prioritized
    - He was very risk aversive
- He doubted his abilities, and was not confident that he could get into a graduate school
  - Avoided activities such as studying for the Graduate Record Examination (GRE), presenting and publishing He knew very little about the politics involved in academia, as he seemed oblivious to the political nature of the world
  - Did not think about social relationships in a very mature way
  - Was able to take the perspective of others, yet often failed to see the interconnections between different variables
  - Thought that doing just what was required in everything was enough.
  - Did not realize that such behavior might interfere in achieving his goals by keeping him from going further in his education

Introduction

- First behavioral analytic therapy with developmental underpinnings
- Incorporates
  - Behavioral developmental stages
  - Value of reinforcement of a behavior into its workings
- Based on
  - Model of Hierarchical Complexity
  - Operant Conditioning
- Aims to change problematic behaviors by helping individuals
  - To raise their behavioral developmental stage to solve those particular problem behaviors
  - To alter their values of reinforcement for the desired behaviors
- Effective in treating behavioral problems, but does not claim to alter an individual's biological susceptibility to behavioral problems

Theory Behind DBAT

- Behavioral developmental stages and valuation of consequences of behavior interact predicting behavior
- Behavioral problems are affected both by *stage* and *value of consequences*
- **Model of Hierarchical Complexity**
  - A measurement theory that analyzes the developmental difficulty of tasks represented by the *Orders of Hierarchical Complexity*
  - Represents the behavioral developmental stages at which an individual is performing while completing a task
  - Has 16 Orders
- **Value and Its Discounting: Four forms**

a) Value of the reinforcing consequence of behavior

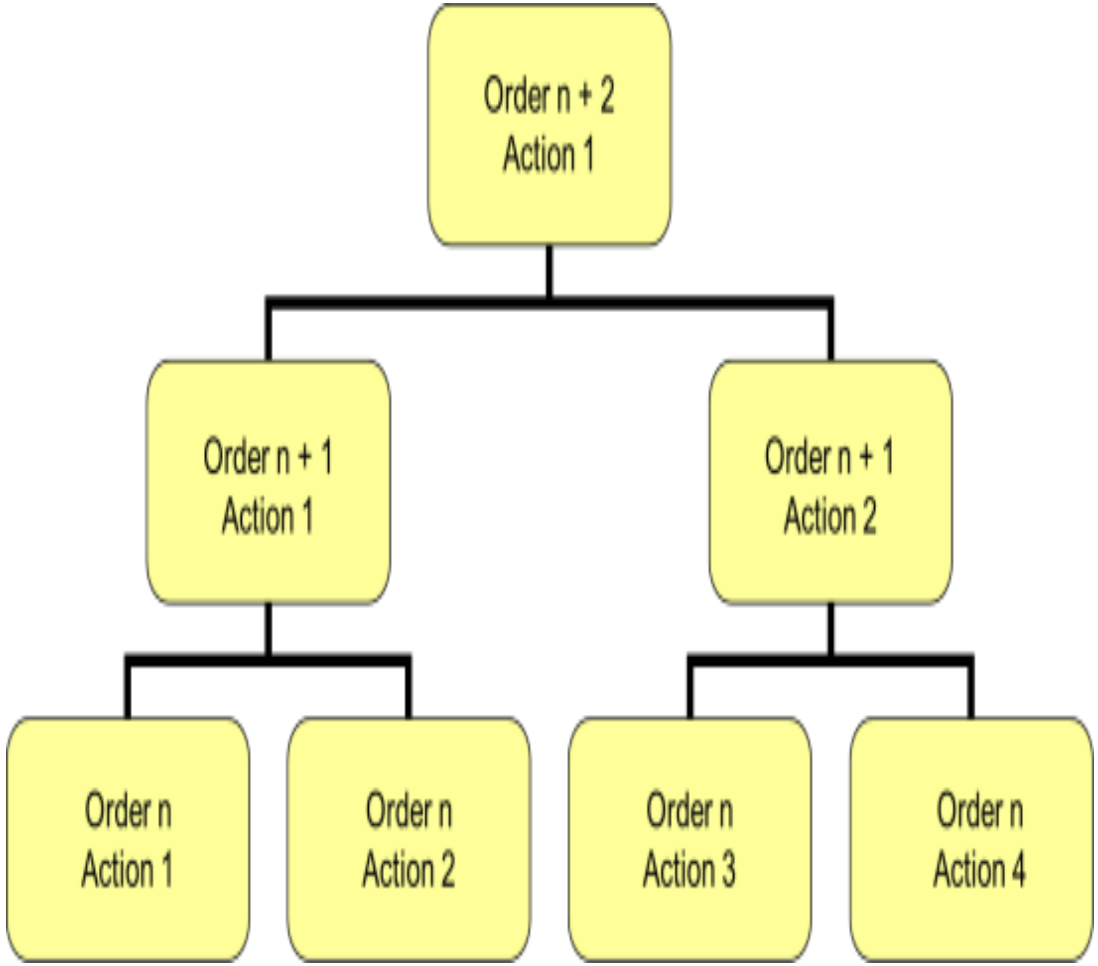
b) Discounting

c) Risk

d) Cost

Three Axioms of The Model of Hierarchical Complexity

- Higher order actions are:
  a. Defined in terms of tasks actions from the **next lower** order of hierarchical complexity
  b. Defined as the higher order task action that **organizes** two or more less complex actions
  c. The ordering of the lower task actions have to be carried out **non – arbitrarily** way



16 Orders of Hierarchical Complexity

Order Number	Order Name	Order Number	Order Name
0	Calculatory	8	Concrete
1	Sensory and Motor	9	Abstract
2	Circular Sensory-motor	10	Formal
3	Sensory-motor	11	Systematic
4	Nominal	12	Metasystematic
5	Sentential	13	Paradigmatic
6	Prepoperational	14	Crossparadigmatic
7	Primary	15	Meta Crossparadigmatic

The Order of Hierarchical Complexity

- The sequences of Hierarchical Complexity begin with simpler behaviors and progress to more complex behaviors
- **Orders**
  - The different layers in a hierarchical sequence of task complexity are referred to as “orders”
- **Orders of Hierarchical Complexity (OHC)** are used to assess the predicted difficulty of behavior tasks
  - The OHC is a equally-spaced unidimensional ordinal scale
  - The OHC measures difficulty independent of domain and content
- **Stages**
  - The **successful completion** of a task of a given order is referred to as “stage”
- The higher the order of hierarchical complexity, the more the difficulty of the task

- The ***Order Of Hierarchical Complexity*** is obtained by counting the number of hierarchical steps
  - Each step consists of a coordination of next lower order actions
  - Each lower order action consists of even lower order actions
    - Hence there will be three hierarchical steps in an Order 3 task
- The lowest order actions a set of elementary Order 1 actions

Value and Its Discounting: Four forms

First, value of the reinforcing consequence of behavior

- Measured by sensitivity to that reinforcement
  - Sensitivity can be measured by presenting choices of reinforcement to people and having them rate the value of the reinforcement
- The perceived value of reinforcement of a behavior affects the frequency of that behavior
  - If the value of the reinforcement of a behavior is high, the likelihood of that behavior occurring is greater
  - Whereas, if the value of reinforcement of a behavior is low, the likelihood of that behavior occurring is low
  - For example, consider achieving good grades as the reinforcement obtained through the behavior of good study habits. If getting good grades is of high value to a student, the likelihood of the student maintaining the good study habit is greater. However, if getting good grades is not of high value to a student, the likelihood of the student developing and maintaining a good study habit is low

Value and Its Discounting: Second Form

Discounting

- The process by which a reinforcement loses its value or effectiveness with delay between the behavior and the consequential reinforcement
- Discounting decreases the likelihood of the behavior occurring as the value of the reinforcement decreases due to delay between the behavior and consequential reinforcement
- For example, consider a person *S* who chooses to party with his friends one night instead of using that time to prepare for his job interview the next day
- In this case, he discounted the reinforcement he might get by preparing for his job interview and possibly getting the job
- He chose the immediate pleasure he would get from partying with his friends over the possible delayed reward he would get by preparing for his interview and doing well in it

Value and Its Discounting: Third Form

Risk

- It is represented by how sensitive an individual is to a change in delay of reinforcement or punishment
- To obtain a desired behavior, the perceived risk may have to be increased or decreased depending on how the risk affects the behavior
- High perceived risk leads to avoidance of behavior
  - Consider students who avoid taking writing intensive classes. They perceive the risk of their papers being critically evaluated by the teacher to be very high. Although this may hinder them from attaining their undergraduate degree, because their perceived risk of taking a writing intensive class is very high, they avoid the behavior. In this case, the perceived risk has to decrease
- Low perceived risk leads to continuation of behavior
  - Consider another example of hoarders who have their yards full of garbage, old cars, broken compressors, and old building material. The perceived risk of bothering the neighbors so that they call the health department by collecting unnecessary goods is low. Thus they continue to hoard goods and cause trouble in the neighborhood. In this case, in stopping them from hoarding goods, the perceived risk has to increase.

Value and Its Discounting: Third Form

Cost

- Represents the change in value of reinforcement
- Costs are negative consequences of problem behavior or the lack of behavior
- Problem behaviors persist as people misjudge the cost of such actions or inaction

Interaction between Stage and Value

- The stage of understanding of the *contingencies* between
  - One's own behavior and
  - The consequences of that behavior may affect which behaviors one engages in
- High reinforcement value of an outcome affects stage
- Low reinforcement value may prevent individuals from performing at a high stage

Behavioral Problems Affect Stage And Value

- Behavioral problems either freeze or decrease the behavioral developmental stage at which individuals function

Case *J* From a Developmental Perspective

- *J*'s **behavioral developmental formal stage** 10 contributed to his lack of understanding the nuances of relationships with other people
  - This prevented him from successfully pursuing his career goals
- In order for *J* to understand the relationships to pursue the goals, *J* needed to **move to Systematic Stage 11**
  - At Stage 11, J would understand political relationships among people, culture and the environment
- Because the reinforcement of systematic stage responses, *J* learned the necessary steps to achieve his goal was not an immediate one
  - The **value of the reinforcement** he got from those desirable behaviors he engaged in such behaviors

The Therapy Terminologies

- *Advisee*: Individual who needs help in altering their behaviors in order to lead a more satisfying life.

- *Developmental Behavioral Analyst*: A trained individual applying DBAT to help the advisee

- *Problem behaviors*: Behaviors hindering the advisee/trainee from living a satisfying life. Behavior that is aimed to alter by both the advisee/trainee and the developmental behavioral analyst.

Overview of the Therapy Procedures

1) **Building an alliance**
   a. Ask advisee to describe how they feel
   b. Take into consideration what the advisee wants
   c. Make the advisee feel heard and understood
2) **Presteps in intervention**
   a. Identify problem behaviors
   b. Recognize stage of problem behavior
   c. Assess the effect of delay discounting and perceived risks on problem behavior
   d. Set target behavior
   e. Target small behavioral change to win the advisee/trainee's trust
   f. Identify necessary skills or subtasks to overcome problem behavior

3) **Intervention**

a. Setting boundaries

b. Setting contingencies

c. Help the advisee recognize the cost of the problem behavior

d. Measure sensitivity to reinforcement

e. Increase rate of responding in one area to increase rate of action in another

f. Other supplemental therapies/training

The Study

Method

Participants

- Four male advisees aged 22, 50, 53 and 72
- Two female advisees/trainees aged 9 and 65
- Five of the advisees suffered from one or more of the following disorders: Oppositional defiant disorder, borderline personality disorder, obsessive compulsive disorder, dependent personality disorder and depressive disorders.

Procedure

- Problem behaviors were identified and scored using the HCSS (Hierarchical Complexity Scoring Scheme)
- Target behaviors were set and scored as well
- DBAT was applied
- Behaviors after intervention were observed and then scored

The Study

Results

- Five advisees achieved their target behaviors
- They also moved up at least one stage in their problem behaviors
- One advisee remained in initial phases of the therapy

Stages of Advisees Before and After Intervention

Advisees	Stage		Number of stages changed
	Before Intervention	After Intervention	
A	Primary	Primary	0
B	Formal	Systematic	1
C	Abstract	Formal	1
D	Abstract	Formal	1
E	Primary	Concrete	1
F	Concrete	Formal	2