

Beyond the ABCs:

Using Molar Processes to Understand Flexibility
and Enhance Clinical Practice

Thomas J. Waltz, Ph.D.

(Center for Mental Healthcare Outcomes Research)

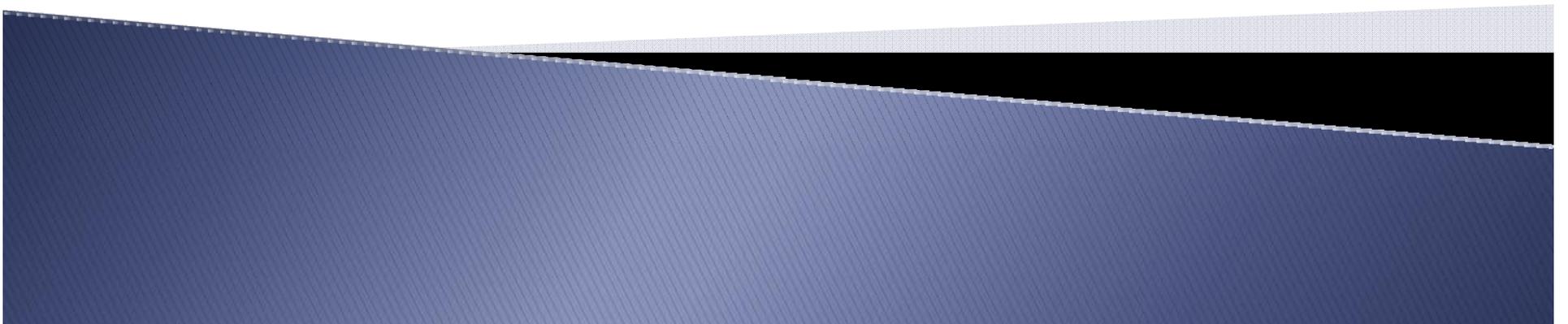
Claudia Drossel, Ph.D.

(SC Mental Illness Research, Education, & Clinical Center)

Central Arkansas Veterans Healthcare System and University of Arkansas for Medical Sciences

Disclosures

- ▶ This workshop is an invitation



Overview

- ▶ Brief Introduction or Review
 - Philosophical Assumptions
 - Behavioral Theory
- ▶ Enhancing ACT with Molar Behavioral Science
 - Matching Law
 - Discounting
 - Variability
 - Momentum
- ▶ Case Discussions

Philosophical Assumptions

The Individual As Man/World

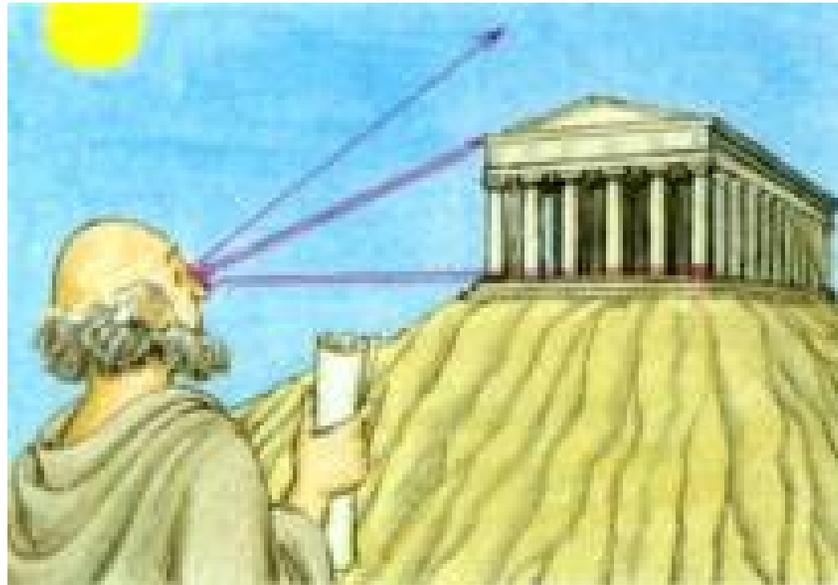
ALAN W. WATTS

(Prefatory Note: The following was originally delivered as an impromptu lecture for the Social Relations Colloquium at Harvard University on April 12th, 1963. Although the subject was not discussed in the lecture itself, its theme is closely related to the expansion of consciousness achieved through psychedelic substances. With proper "set and setting," the psychedelics are very frequently successful in giving the individual a vivid sensation of the mutual interdependence of his own behavior and the behavior of his environment, so that the two seem to become one — the behavior of a unified field. Those who uphold the impoverished sense of reality sanctioned by official psychiatry describe this type of awareness as "depersonalization," "loss of ego-boundary," or "regression to the oceanic feeling," all of which, in their usual contexts, are derogatory terms suggesting that the state is hallucinatory. Yet it accords astonishingly well with the description of the individual which is given in the behavioral sciences, in biology and in ecology.

Theoretically, many scientists know that the individual is not a skin-encapsulated ego but an organism-environment field. The organism itself is a point at which the field is "focused," so that each individual is a unique expression of the behavior of the whole field, which is ultimately the universe itself. But to know this theoretically is not to *feel* it to be so. It was possible to calculate that the world was round before making the voyage that proved it to be so. The

Fascinating work is being done in studying the ways in which the individual as a system of behavior is related to his biological and social environments, showing how his behavior may be explained in terms of those environments. One of the people who has done very important work in this sphere is our distinguished colleague, B. F. Skinner. I cite his work because it brings out these ideas in a marvellously clear, crucial, and provocative way, and because it is evidence for conclusions which he himself does not seem to have realized.

Philosophical Assumptions



Philosophical Assumptions

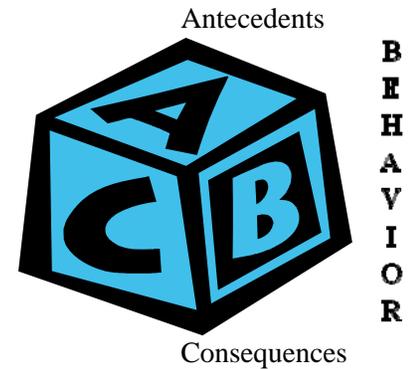
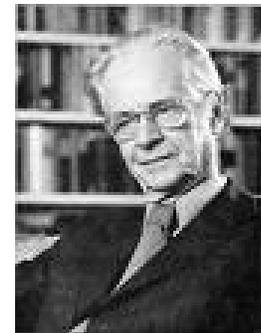
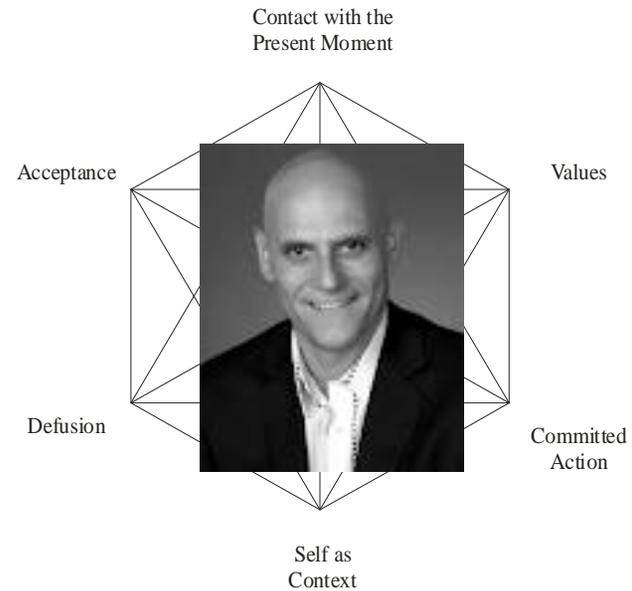
- ▶ Traditional View



Philosophical Assumptions



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Philosophical Assumptions

- ▶ Contextual Behavioral Science
 - Non-mediational theory
 - Reciprocal behavior-environment system
 - Temporally extended unit of analysis

Philosophical Assumptions

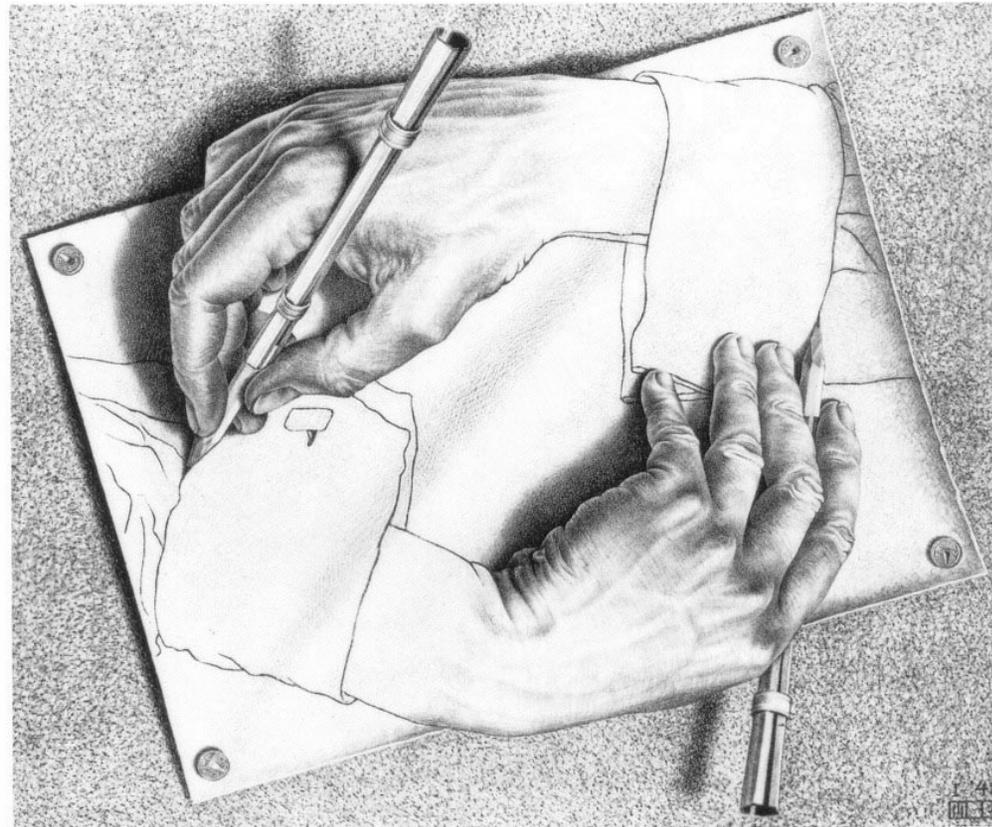
- ▶ Non-mediational theory
 - Detects orderly behavior–environment relations
 - Accounts for phenomena in terms of behavior–environment relations (‘situated action’)
 - Deals with all aspects of human experience
 - Does not give privileged explanatory status to cognitions, emotions, or behavior

Philosophical Assumptions

- ▶ Reciprocal behavior–environment system
 - Behavior and environment constitute a nested, interlocking system
 - All aspects of the person (cognition, emotion, biology, and behavior) potentially enter into the analysis
 - “Self”
 - Unique path of history and circumstances across time and contexts

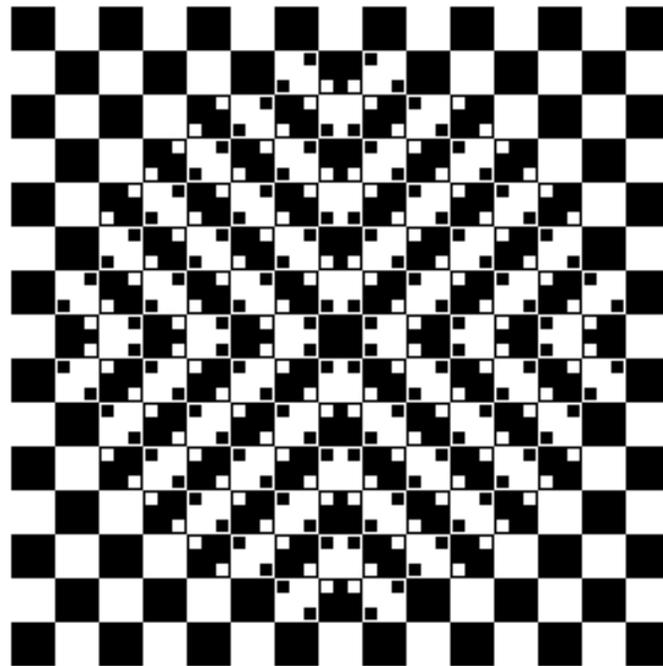
Philosophical Assumptions

- ▶ Reciprocal coaction



Philosophical Assumptions

- ▶ Order on a temporally extended scale

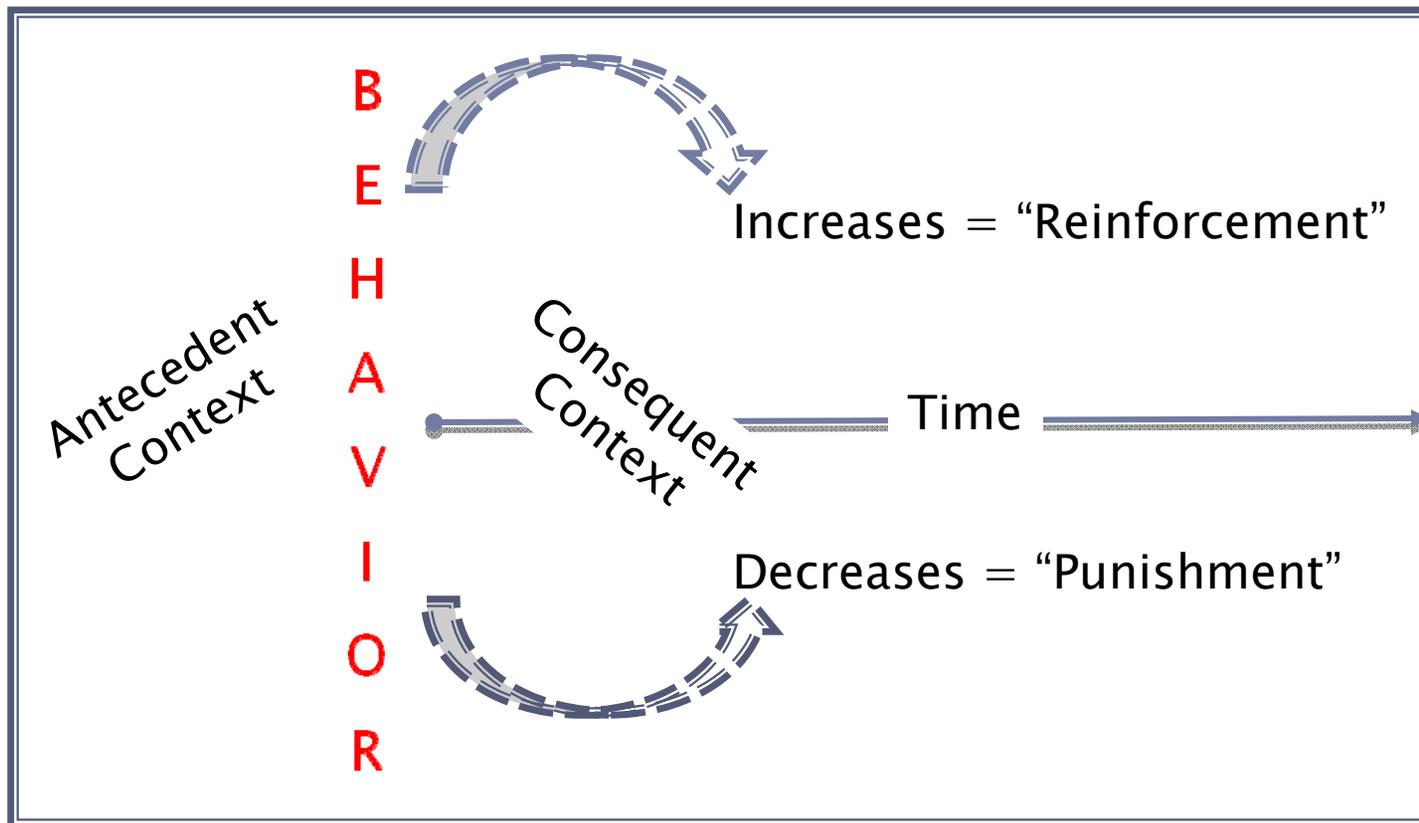


Philosophy → Behavioral Theory

- ▶ Order on a temporally extended scale
 - In which situations does behavior (cognition, emotion) occur most frequently?
 - What are its most common consequences?
 - How does it usually serve the client?
- ▶ Examples of functional repertoires:
 - Manding (invariant consequences)
 - Tacting (invariant antecedent events)

Behavioral Theory

- ▶ Familiarity with ABCs



Behavioral Theory: Molar View

- ▶ Kazdin, 1983: There is a lack of attention to the possibility that larger constellations of behavior may need to be assessed and treated.
- ▶ Rachlin, 2003: When small behavioral units (individual responses) resist behavioral analysis – that is, when individual responses have no clear reinforcing consequences – [...] take a step backward, and look for [...] the long-term patterns into which the smaller unit fits.

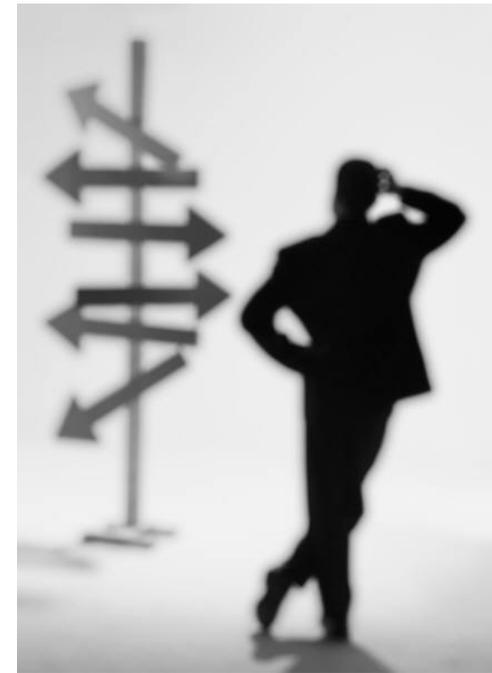
Beyond the ABC's

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From Theory to Science

- ▶ Operants = relations = contingencies between behavior and context over time
- ▶ Choosing = multiple, nested contingencies “tugging” at the fabric of behavior
- ▶ Operants = choice behavior
 - Choice is not either/or but an ongoing process



Behavioral Science: Matching

- ▶ How do we choose?



Matching

$$\frac{\textit{Behavior}_A}{\textit{Behavior}_A + \textit{Behavior}_E} = \frac{\textit{Reinforcement}_A}{\textit{Reinforcement}_A + \textit{Reinforcement}_E}$$

Matching

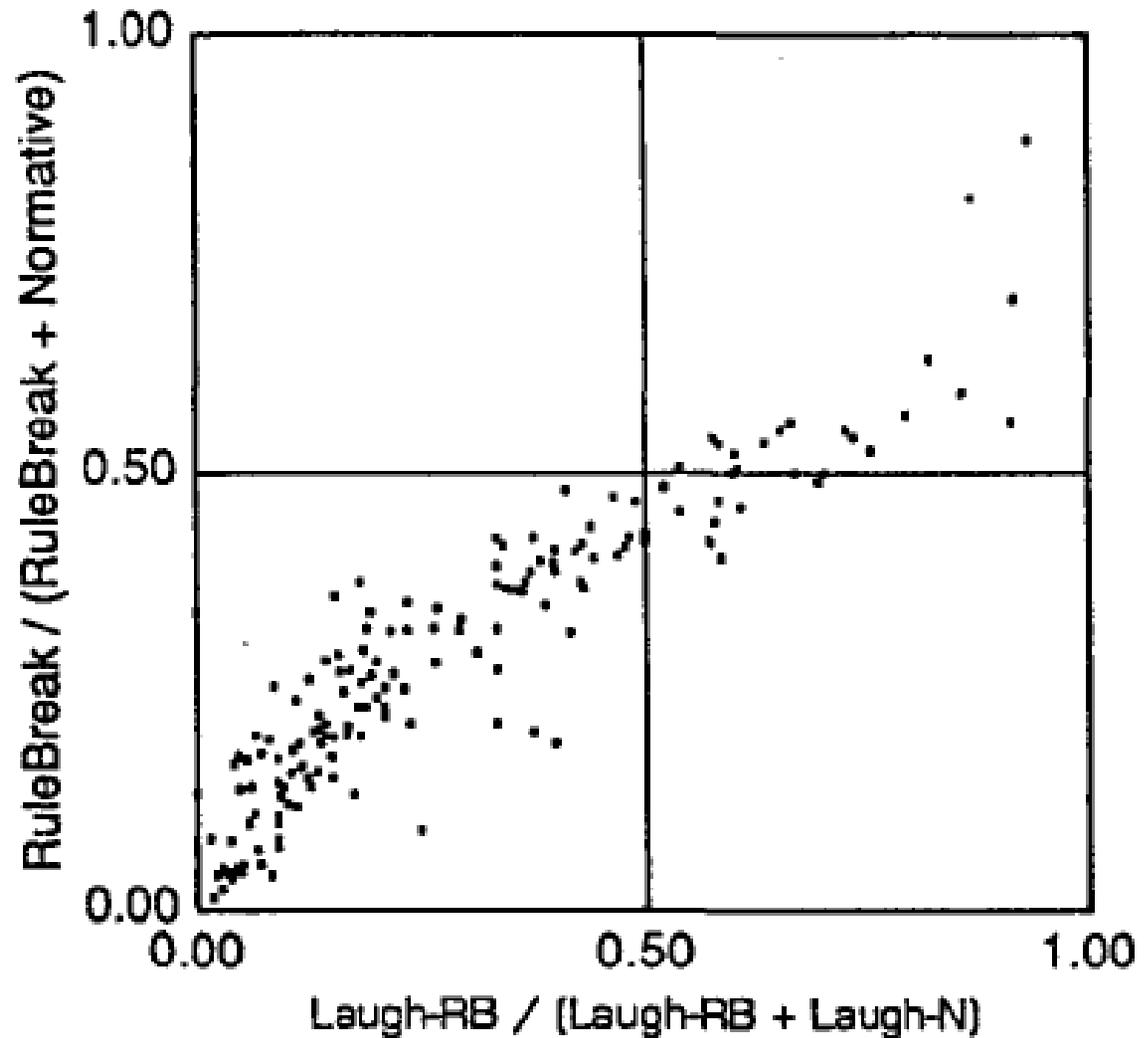
$$\textit{Behavior}_A \approx \frac{(k) \textit{Reinforcement}_A}{\textit{Reinforcement}_A + \textit{Reinforcement}_E}$$

$$\textit{Behavior}_A \approx \frac{(k) \textit{Reinforcement}_A}{\textit{Reinforcement}_A + \textit{Reinforcement}_E}$$



"I could sit here all day thinking about my problems."

Matching (Dishion et al., 1996)



Matching in ACT

▶ DEFUSION

- Social support for ineffective behavior related to my story (“fusing”)

VERSUS

Social support for disengaging from the struggle to control private events and doing something else (“being flexible”)

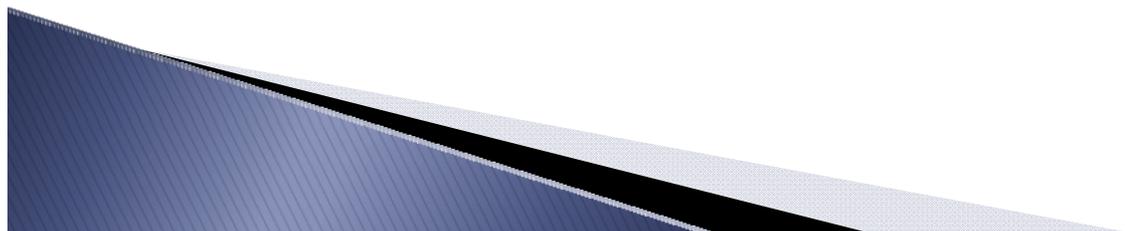
More Matching in Practice

- ▶ Pleasant Event Schedules
 - Teenagers: Adolescent Reinforcement Survey Schedule (Bulow & Meller, 1998)
 - Undergrad students: Pleasant Event Schedule (Correia et al., 2003) – binge drinkers versus comparison group
- ▶ Contingency management

Bulow & Meller (1998)

Table 1. Stepwise Canonical Discriminative Function Analysis of Herrnstein's Law, With Pearson Correlations and Variances for the Dependent Variable, Frequency of Sexual Activity

<i>Predictor Variables</i>	<i>Can. r</i>	<i>F</i>	<i>% Class</i>	<i>Pearson r</i>	<i>r²</i>
Herrnstein's Law	.66	55.927*	59.93	.64	.41
Herrnstein's Law	.68	41.35*	58.59	.64	.41
Age	—	6.88*	—	.26	.07
Living situation	—	5.64*	—	.23	.05
Previous pregnancies	—	6.57	—	.30	.09
Ethnicity	—	0.64	—	.01	.00
Socioeconomic status	—	1.42	—	-.10	.01



Matching (Bulow & Meller, 1998)

$$\text{Frequency of sexual behavior} \approx \frac{(k) \text{ Reinf related to sex}}{\text{Reinf related to sex} + \text{Other}_E}$$

$$\text{Frequency of Sexual Behavior} \approx \frac{(k) \text{ Reinf related to sex}}{\text{Reinf related to sex} + \text{Other reinf}}$$

Matching (Correia, 2003)

$$\text{Frequency of binge-drinking} \approx \frac{(k) \text{ Reinf related to ETOH}}{\text{Reinf related to ETOH} + \text{Others}}$$

$$\text{Frequency of Binge-drinking} \approx \frac{(k) \text{ Reinf related to ETOH}}{\text{Reinf related to ETOH} + \text{Other reinf}}$$

Matching in ACT

Frequency of value-oriented B $\approx \frac{(k) \text{ Reinf related to Value}}{\text{Reinf related to Value} + \text{Others}}$

Frequency of value-oriented B $\approx \frac{(k) \text{ Reinf related to Value}}{\text{Reinf related to Value} + \text{Other reinf}}$

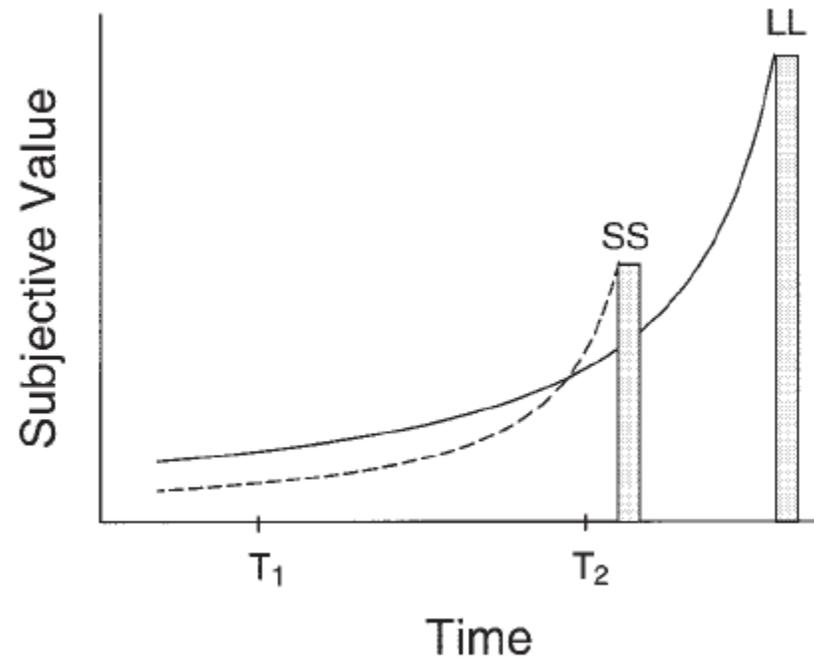
VALUES CLARIFICATION

Increase the number and variety of
OUTCOMES related to BEHAVIOR

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Behavioral Science: Discounting

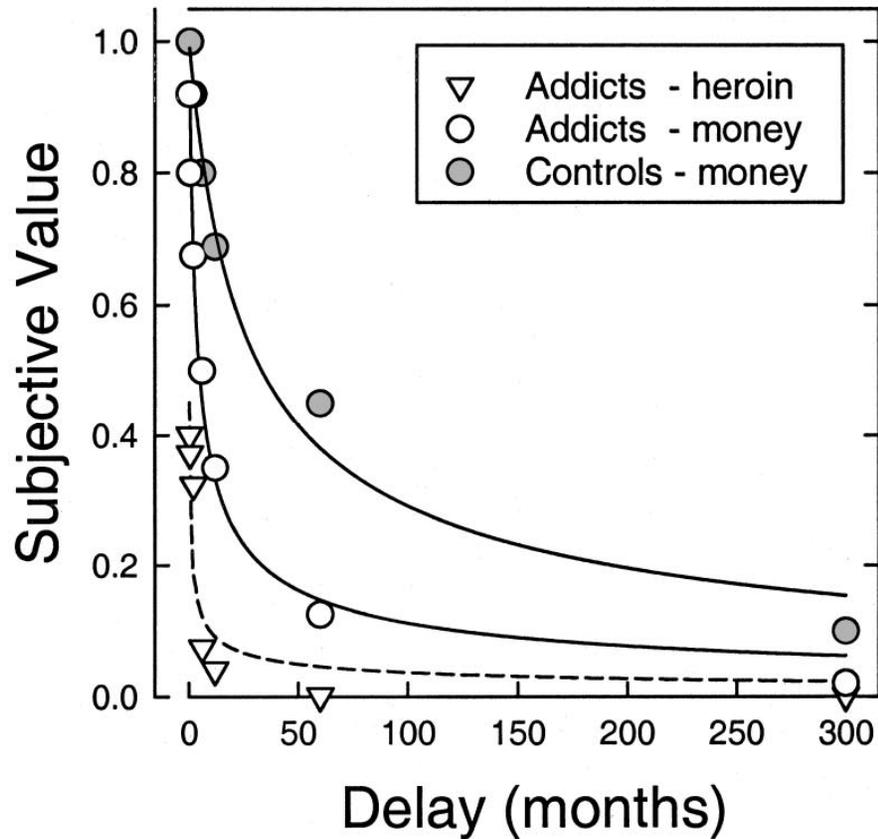


- ▶ SS: Smaller (certain) – Sooner
- ▶ LL: Larger (uncertain) – Later

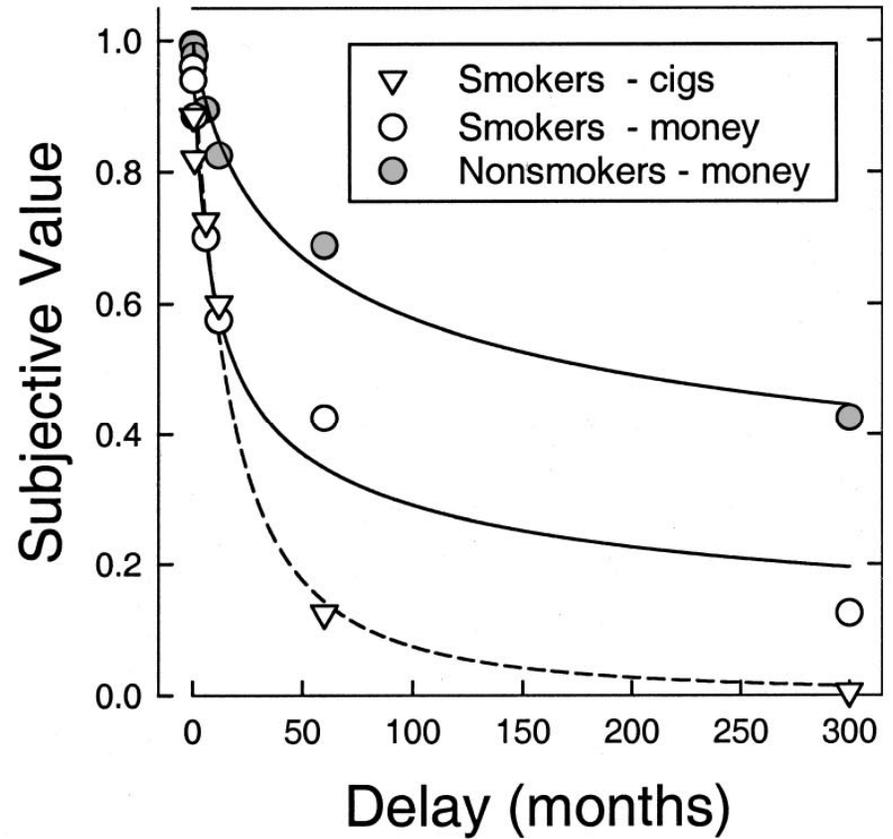
Discounting

- ▶ Health-related behaviors
 - Medication adherence (e.g., diabetes, glaucoma)
 - Diet and exercise
 - Drug or alcohol consumption

Discounting



(Madden et al. 1997)



(Bickel et al. 1999)



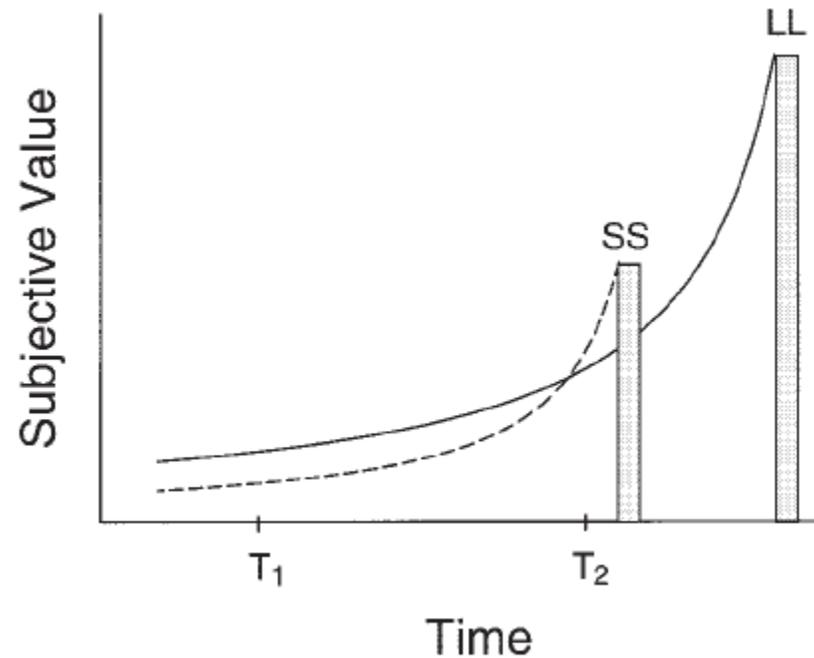
Influencing Discounting

- ▶ In animal studies
 - Punishment doesn't work.
 - Waiting does.



The Sirens imploring Ulysses to stay.

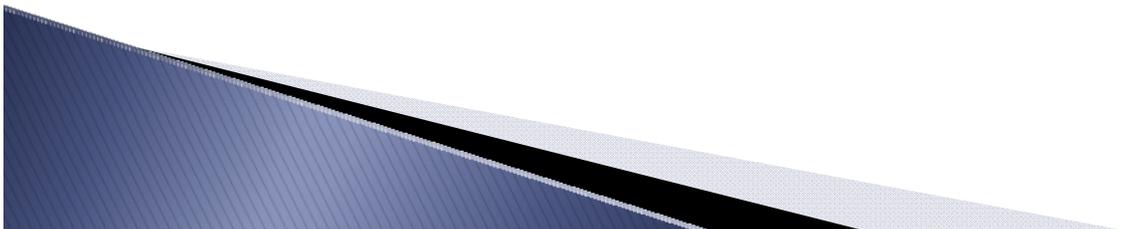
Behavioral Science: Discounting



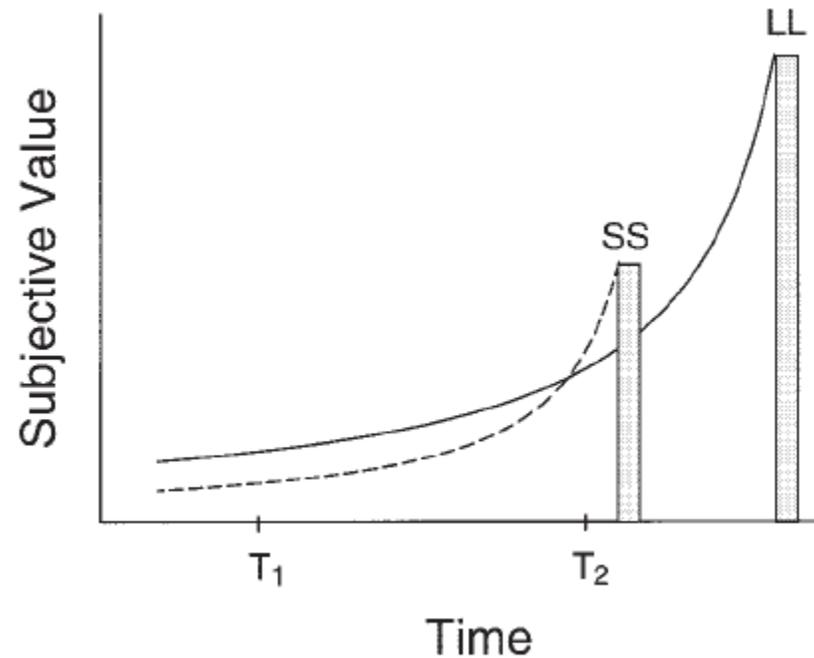
- ▶ SS: Smaller (certain) – Sooner
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Influencing Discounting

- ▶ Postponing the choice
- ▶ Building a history of obtaining LL or LU
 - Training to wait with a delay–fading procedure
 - Equal delays, then making the smaller alternative available sooner
- ▶ Commitment
 - Creating social contingencies to forego SS
 - Providing opportunity for removing SS alternative
- ▶ Identify components of LL/LU that can be contacted immediately and compete w/ SS



Influencing Discounting



- ▶ SS: Smaller (certain) – Sooner
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Influencing Discounting

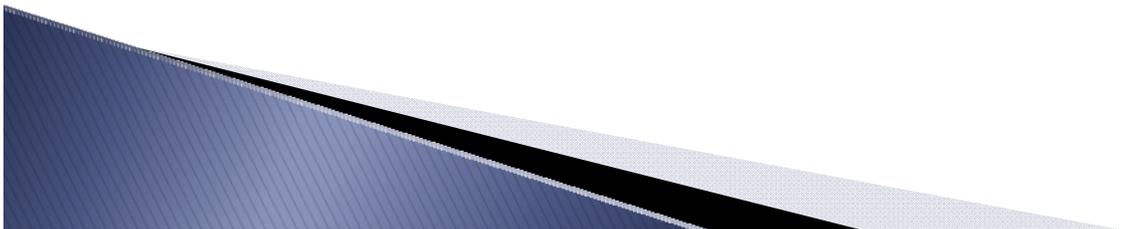
- ▶ Increase the relative value of clinically important outcomes
 - Increase contextual control for the outcome
 - Notice and build patterns
 - Set social standards
- ▶ Decrease the impact of the “impulsive space”
 - Promote distress tolerance skills
 - Build competing skills
 - No attempts to change local verbal behavior

ACT-related Interventions

- ▶ Increase the relative value of clinically important outcomes
 - Values Clarification
 - Reinforcer bundling
 - Augmental function increasing reinforcer magnitude of individual instances of value-congruent behavior
 - Patterns of Committed Action
 - Self-monitoring

ACT-related Interventions

- ▶ Decrease the impact of the “impulsive space”
 - RFT
 - “Hot Thoughts” increase probability of discounting delayed, probabilistic outcomes
 - Contacting contingencies
 - Noticing, observing
 - Self-as-locus
 - Defusing
 - Accepting



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Variability

- ▶ Dimension of operant behavior
 - Behavior becomes more variable when the situation changes (i.e., extinction conditions)
 - Problem-solving
 - Essential for shaping novel behavior
- ▶ Lack is a sign of trouble
 - Autism
 - Depression
 - High experiential avoidance
- ▶ Can be increased
 - Hopkinson & Neuringer (2003); Oya, Nakase & Muto (2012)

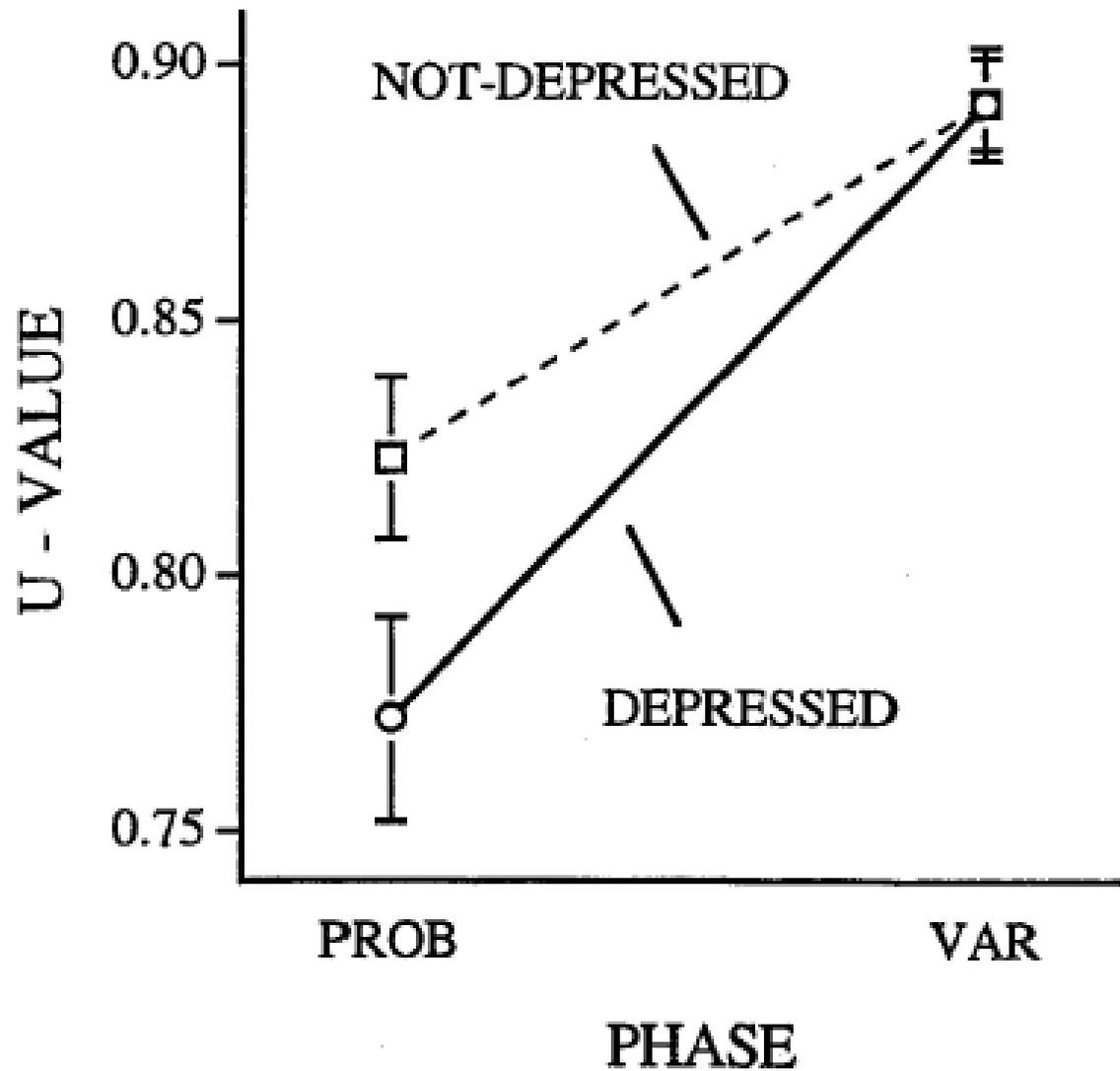
Variability: Dimension of Operant Behavior



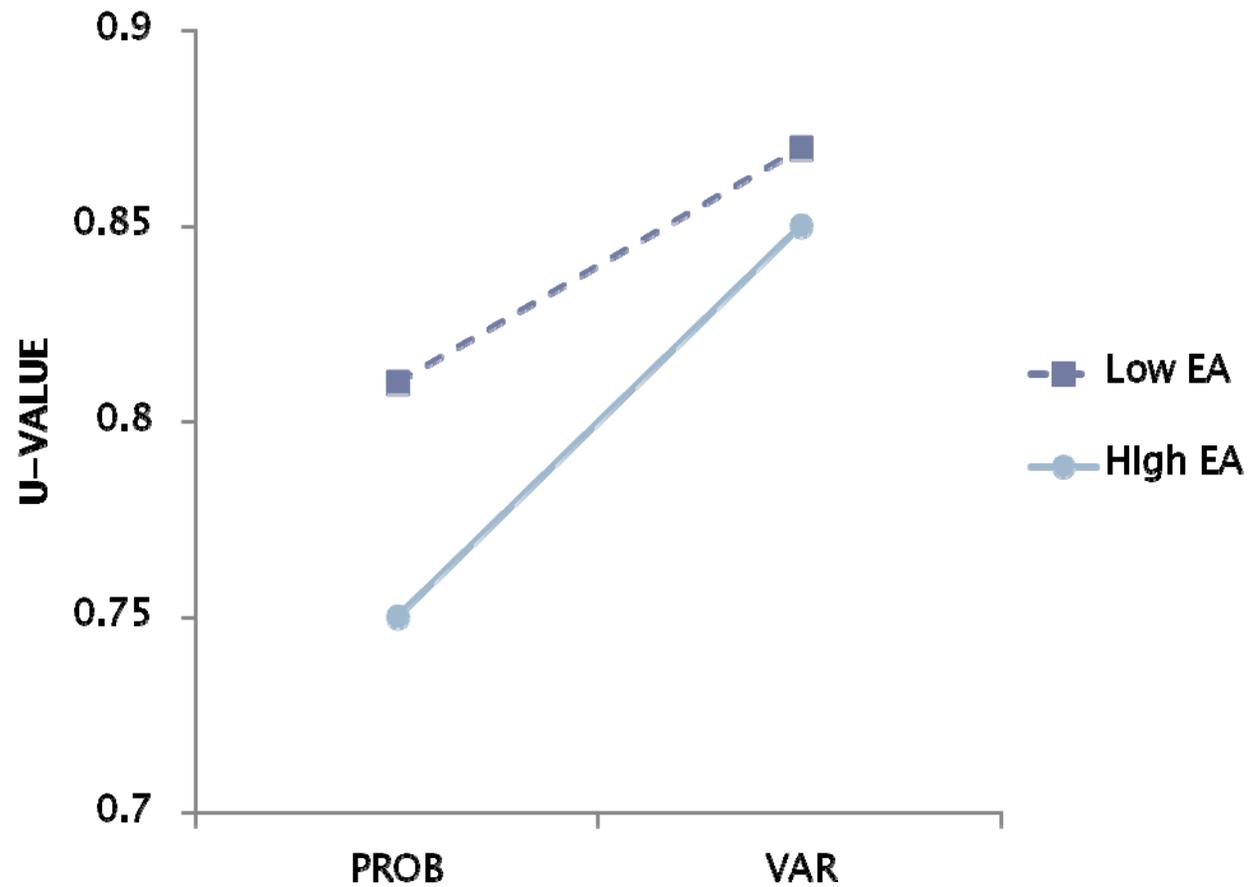
Stokes, P. D. (1999). Learned variability levels: implications for creativity. *Creativity Research Journal*, 12, 37-45.

Increasing Variability (Schwartz, 1982)

- ▶ Extinction
- ▶ Contingency on particular sequences → “stereotypy” emerges around those particular sequences
- ▶ Instruction
 - “Do whatever you want” + no contingency on variability → stereotyped responding
 - Replication of animal research
 - “Find the rule” + contingency on variability → greater variability BUT NOT w/ history
- ▶ Similar to Hayes et al. (1986): “Go fast/slow”



Hopkinson, J. & Neuringer, A. (2003). Modifying behavioral variability in moderately depressed students. *Behavior Modification*, 27, 251-264.



Oya, A., Nakase, K., & Muto, T. (2012). Characteristics of behavioral variability in students with high experiential avoidance. Poster presentation (#2-52), ACBS Annual World Conference X, Washington DC.

Restricting Variability

- ▶ Current or past environments supporting narrow repertoires
- ▶ Strict, narrow rules
 - Contingencies for following these rules
 - History of above
- ▶ Overly broad rules (“Do whatever you want”) without contingencies on varying behavior
 - “Bootstrapping problem” – you can do anything?
 - Versus behavioral trajectory contacting contingencies that support variability

Increasing Variability in ACT

1. Create contingencies supporting variability, e.g., engage client in response variations within session
2. Help client tell whether novel responses were effective (e.g., self-monitoring)
3. Help shape alternative behavior, if necessary
4. Increase the demand for variability / novel responding upon a history of success

Increasing Variability in ACT

5. At the same time, improve client's distress tolerance for variable responding with ambiguous or delayed feedback (*see discounting, earlier*)
6. Rely on vague rules and metaphors that increase the range of functional variability by limiting literal rule-following and meeting "minimum requirements" for contacting contingencies

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Momentum

- ▶ A behavior pattern's resistance to change
- ▶ High rates of responding + high rates of reinforcement
- ▶ Behavior involving little effort and immediate/certain reinforcement is at high risk for developing momentum
 - Verbal behavior
- ▶ Momentum is context-dependent

Momentum in ACT

- ▶ Workability assessment – shifting context to decrease momentum of ineffective behaviors
- ▶ Build momentum for effective behaviors
 - ▶ For doing, not for talking about doing
 - ▶ Use fluency training, multiple exemplar training, rehearsal to support the use of skills beyond the therapy session
 - ▶ Include a strong contextual component to foster generalization

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Case Discussions

- ▶ Accepting
- ▶ Defusing
- ▶ Contacting contingencies
- ▶ Self as perspective
- ▶ Identifying values
- ▶ Engaging in values-oriented behavior
- ▶ Matching
 - Behavior = Function of relative outcomes
- ▶ Discounting
 - Choosing SS over LL
- ▶ Variability
 - Necessary to adjust to changing contingencies
- ▶ Momentum
 - Resistance to change

ACT Components

Molar Processes

Thank you!

tjwaltz@uams.edu
cdrossel@uams.edu