
*Functional Analysis
of Problem Behavior:
Basic Methods, Extensions, & Challenges*

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Main Points

- ❖ *Learned Functions of Problem Behavior*
- ❖ *Approaches to Assessment*
 - ❖ *Indirect methods*
 - ❖ *Descriptive analysis*
 - ❖ *Functional (experimental) analysis*
- ❖ *Functional analysis methodology*
 - ❖ *Key components*
 - ❖ *Variations and extensions*
- ❖ *Implications for Treatment*
 - ❖ *Elimination of establishing operations (EOs)*
 - ❖ *Elimination of maintaining contingencies*
 - ❖ *Behavioral replacement*

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Special Note

JABA

Journal of Applied Behavior Analysis

- ❖ *Spring 2013 (Vol. 46, #1)*
- ❖ *Special issue on functional analysis*
- ❖ *31 articles on various aspects of assessment & treatment*

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Structural vs. Functional Analysis

❖ *Structural analysis:*

- ❖ *Identification of parts or components*
- ❖ *General: Of what is this thing made?*
- ❖ *Environment & behavior: What events are happening?*

❖ *Functional analysis:*

- ❖ *Identification of uses or purpose*
- ❖ *General: What does this thing do?*
- ❖ *Environment & behavior: Why are these events happening?*

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Functional Analysis of Behavior

❖ *Purpose:*

- ❖ *To identify the variables of which behavior is a function; to discover "cause-effect" relationships (Skinner, 1953)*

❖ *Goals:*

- ❖ *Understanding*
- ❖ *Treatment*
- ❖ *Prevention*

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Learned Functions of Behavior Disorders

❖ *Assumptions*

- ❖ *Most behavior problems are learned*
- ❖ *Adaptive and maladaptive behavior have common functions*

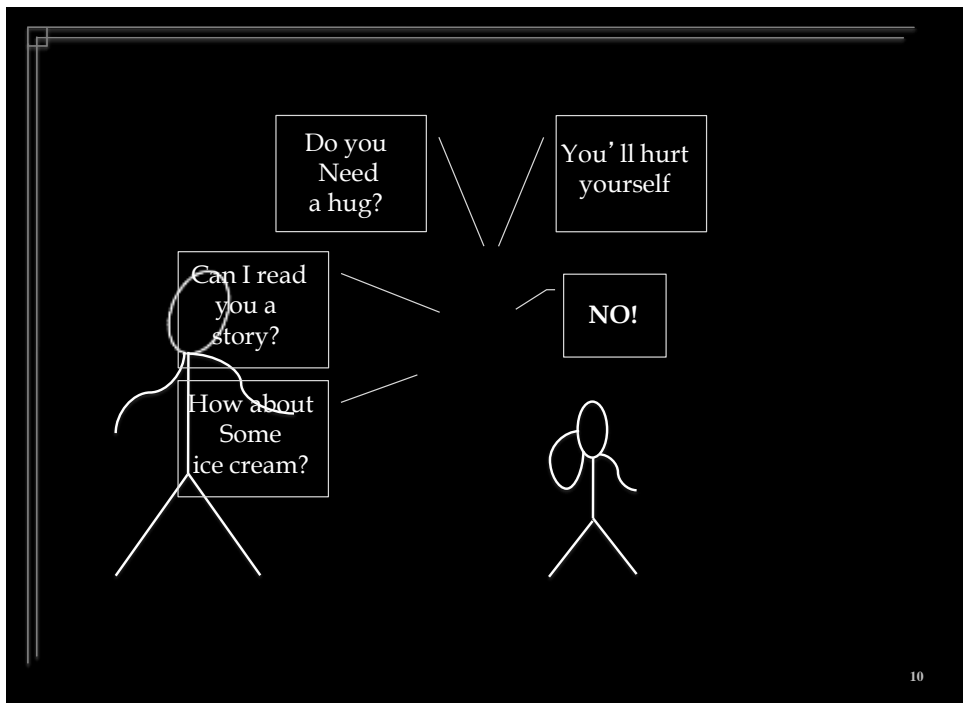
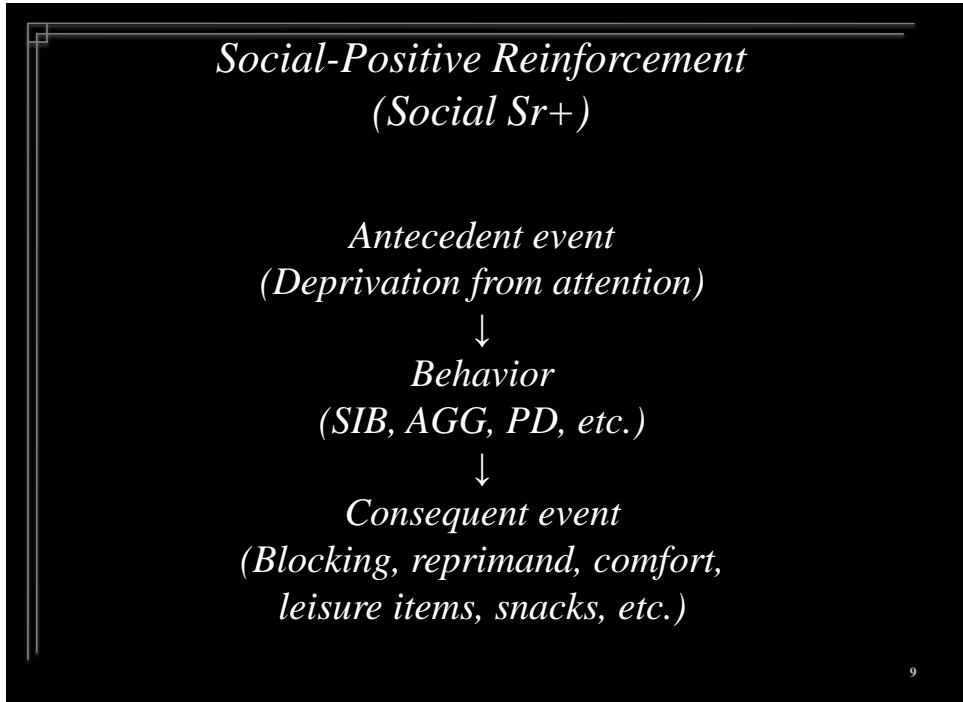
❖ *Positive Reinforcement (Sr+, reward)*

- ❖ *Social (attention, access to tangible materials)*
- ❖ *Automatic (sensory stimulation)*

❖ *Negative Reinforcement (Sr-, escape or avoidance)*

- ❖ *Social (escape from task demands)*
- ❖ *Automatic (pain attenuation)*

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<i>Function</i>	<i>Antecedent (EO)</i>	<i>Consequent (Sr)</i>
<i>Social Positive Reinforcement</i>	<i>Deprivation (no attention)</i>	<i>Attention</i>
<i>Automatic Positive Reinforcement</i>	<i>Deprivation (no sensory stimulation)</i>	<i>Sensory stimulation</i>
<i>Social Negative Reinforcement</i>	<i>Aversive stimulation (task demands)</i>	<i>Removal of task</i>
<i>Automatic Negative Reinforcement</i>	<i>Aversive stimulation (pain or discomfort)</i>	<i>Alleviation of pain</i>

Self-Injurious Behavior (SIB)

Behavior that produces injury to the individual's own body

<i>❖ Biting:</i>	<i>Closure of upper / lower teeth on the skin (also mouthing and sucking)</i>
<i>❖ Eye Gouging:</i>	<i>Finger insertion into the ocular area</i>
<i>❖ Head Banging:</i>	<i>Forceful contact of the head with a stationary object</i>
<i>❖ Hitting:</i>	<i>Forceful contact of one body part with another or with a stationary object</i>
<i>❖ Pica:</i>	<i>Ingestion of inedible substances</i>
<i>❖ Rumination:</i>	<i>Regurgitation and reswallowing of previously ingested food</i>
<i>❖ Scratching:</i>	<i>Raking-like or picking movement of fingernails on the skin</i>

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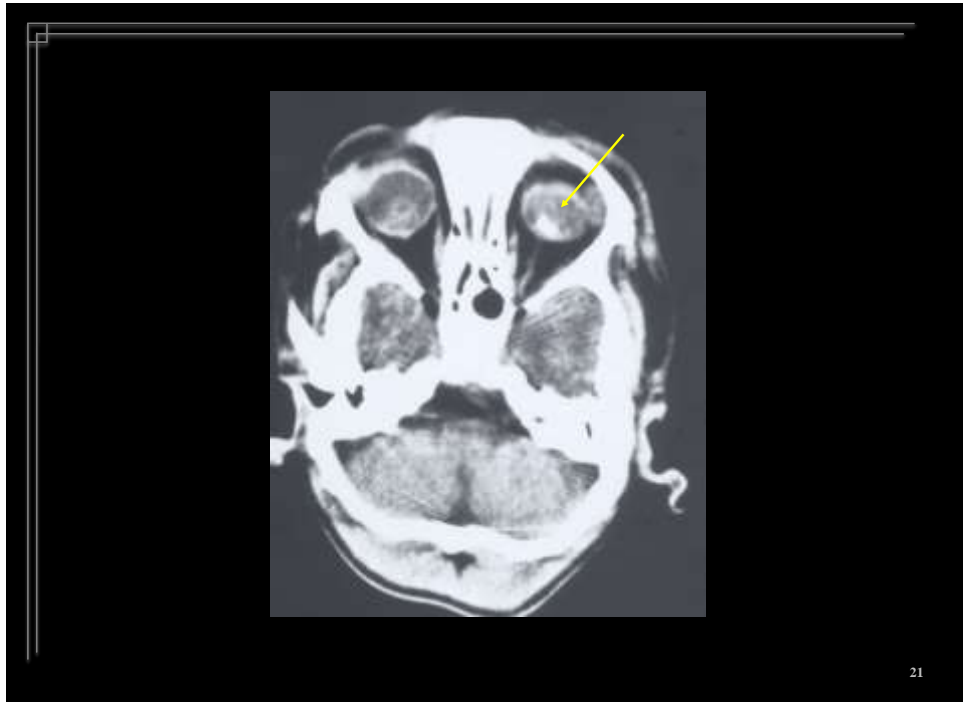
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Functional Behavioral Assessment

Precision

Simplicity

Least

Anecdotal (Indirect) Methods

Most

⑥

Descriptive (Naturalistic) Analysis

⑧

Most

Functional (Experimental) Analysis

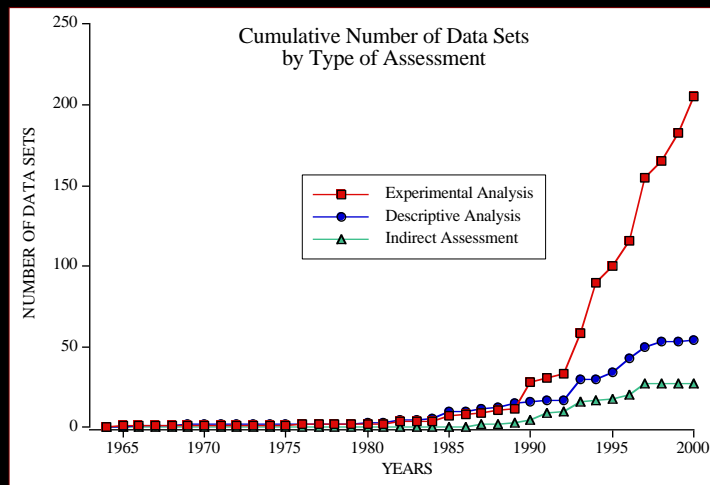
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❖ Terminology

- ❖ *Functional behavioral assessment (FBA): Any systematic attempt to identify sources of reinforcement for problem behavior*
- ❖ *Functional analysis (FA): Use of the experimental model to identify cause-effect (environment-behavior) relations*

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Kahng et al. (AJMR, 2002)



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Indirect (Anecdotal) Methods

- ❖ General Characteristics
 - ❖ Focus on circumstances under which behavior occurs
 - ❖ Based on informant recall (no direct observation)
- ❖ Examples
 - ❖ MAS (Motivational Assessment Scale)
 - ❖ QABF (Questions about Behavioral Function)
 - ❖ FAST (Functional Analysis Screening Tool)
- ❖ Advantages
 - ❖ Simplicity, efficiency, no risk, potentially useful information
- ❖ Limitations
 - ❖ Poor reliability, questionable validity
- ❖ Suggestion for implementation
 - ❖ Use only as a preliminary guide

FAST

Functional Analysis Screening Tool

Client: _____ Date: _____
 Informant: _____ Interviewer: _____

To the Interviewer: The FAST identifies factors that may influence problem behaviors. Use it only for screening as part of a comprehensive functional analysis of the behavior. Administer the FAST to several individuals who interact with the client frequently. Then use the results to guide a real observation in several different situations to verify suspected behavioral functions and to identify other factors that may influence the problem behavior.

To the Informant: Complete the sections below. Then read each question carefully and answer it by circling "Yes" or "No." If you are uncertain about an answer, circle "N/A."

Informant-Client Relationship
 1. Indicate your relationship to the person: ___ Parent ___ Instructor ___ Therapist/Residential Staff ___ (Other)
 2. How long have you known the person? ___ Years ___ Months
 3. Do you interact with the person daily? ___ Yes ___ No
 4. In what situations do you usually interact with the person?
 ___ Meals ___ Academic training
 ___ Leisure ___ Work or vocational training
 ___ Self-care ___ (Other)

Problem Behavior Information
 1. Problem behavior (check and describe):
 ___ Aggression
 ___ Self-injury
 ___ Stereotypy
 ___ Property destruction
 ___ Other _____
 2. Frequency: ___ Hourly ___ Daily ___ Weekly ___ Less often
 3. Severity: ___ Mild ___ Disruptive but little risk to property or health
 ___ Moderate: Property damage or minor injury
 ___ Severe: Significant threat to health or safety
 4. Situations in which the problem behavior is most likely to occur:
 Days/Times: _____
 Settings/Activities: _____
 Persons present: _____
 5. Situations in which the problem behavior is least likely to occur:
 Days/Times: _____
 Settings/Activities: _____
 Persons present: _____
 6. What is usually happening to the person right before the problem behavior occurs?

 7. What usually happens to the person right after the problem behavior occurs?

 8. Current treatments:

- | | |
|--|------------|
| 1. Does the problem behavior occur when the person is not receiving attention or when caregivers are paying attention to someone else? | Yes No N/A |
| 2. Does the problem behavior occur when the person's requests for preferred items or activities are denied or when these are taken away? | Yes No N/A |
| 3. When the problem behavior occurs, do caregivers usually try to calm the person down or involve the person in preferred activities? | Yes No N/A |
| 4. Is the person usually well behaved when (s)he is getting lots of attention or when preferred activities are freely available? | Yes No N/A |
| 5. Does the person usually fuss or resist when (s)he is asked to perform a task or to participate in activities? | Yes No N/A |
| 6. Does the problem behavior occur when the person is asked to perform a task or to participate in activities? | Yes No N/A |
| 7. If the problem behavior occurs while tasks are being presented, is the person usually given a "break" from tasks? | Yes No N/A |
| 8. Is the person usually well behaved when (s)he is not required to do anything? | Yes No N/A |
| 9. Does the problem behavior occur even when no one is nearby or watching? | Yes No N/A |
| 10. Does the person engage in the problem behavior even when leisure activities are available? | Yes No N/A |
| 11. Does the problem behavior appear to be a form of "self-stimulation"? | Yes No N/A |
| 12. Is the problem behavior <u>less</u> likely to occur when sensory stimulating activities are presented? | Yes No N/A |
| 13. Is the problem behavior cyclical, occurring for several days and then stopping? | Yes No N/A |
| 14. Does the person have recurring painful conditions such as ear infections or allergies? If so, list: _____ | Yes No N/A |
| 15. Is the problem behavior <u>more</u> likely to occur when the person is ill? | Yes No N/A |
| 16. If the person is experiencing physical problems, and these are treated, does the problem behavior usually go away? | Yes No N/A |

Scoring Summary

Circle the number of each question that was answered "Yes" and enter the number of items that were circled in the "Total" column.

Item	Circled "Yes"	Total	Potential Source of Reinforcement	
1	2	3	4	Social (attention/preferred items)
5	6	7	8	Social (escape from tasks/activities)
9	10	11	12	Automatic (sensory stimulation)
13	14	15	16	Automatic (pain attenuation)

Descriptive (Naturalistic) Analysis

- ❖ General Characteristics
 - ❖ *Direct observation of circumstances under which behavior occurs*
- ❖ Examples
 - ❖ *Scatter plot: Temporal recording of behavior*
 - ❖ *ABC analysis: Recording of interactional sequences*
 - ❖ *Interval recording: Temporal recording of rapid sequences*
- ❖ Advantage
 - ❖ *More reliable than indirect methods*
- ❖ Limitations
 - ❖ *Structural analysis only; no information about function*
- ❖ Suggestion for implementation
 - ❖ *Use to clarify definition of target behavior*

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A-B-C Analysis

Purpose

- ❖ *To identify naturally occurring, observable antecedents and consequences of behavior*

Typical procedure

- ❖ *Define target behaviors (B)*
- ❖ *Specify criteria for antecedent (A) and consequent (C) events*
- ❖ *Occurrence of B → Record A, B, and C*
- ❖ *Organize A-C clusters*
- ❖ *Generate hypothesis based on A-C correlations with B*

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Some Key Terms

- ❖ Antecedent event: Establishing operation (**EO**)
 - ❖ Alters the effects of a reinforcer
 - ❖ EO present: Sr more valuable
 - ❖ EO absent: Sr less valuable
 - ❖ Example: Food deprivation → food more valuable

- ❖ Antecedent event: Discriminative stimulus (**S^D**)
 - ❖ Stimulus in whose presence reinforcement is more likely
 - ❖ S^D present: Sr available
 - ❖ S^D absent: Sr unavailable
 - ❖ Example: Traffic light → Stop/go more likely to be reinforced

- ❖ Consequent event: Reinforcement contingency (**Sr**)
 - ❖ If-then relation between a response and a consequence
 - ❖ Contingency present: Behavior maintains
 - ❖ Contingency absent: Behavior extinguishes

Functional Analysis Protocol

<u>Condition</u>	<u>S^D</u>	<u>EO</u>	<u>Consequence</u>	<u>Contingency</u>
Attention	Th 1	Th. ignores Cl.	Th. attends to beh. problem	Positive rfmnt (attention)
Demand	Th 2	Th. presents learning trials	Timeout for beh. problem	Negative rfmnt (escape)
Alone	N/A	No stimulation	N/A	N/A Automatic reinf?
Play	Th 3	N/A Attn: Free Demands: None Toys: Free	N/A	Control

Functional Analysis Data Sheet

Conduct sessions as described below and to the listed sequence (Division #) =A=None, B=Automatic, etc.). Add a Tangible condition only if it is strongly suspected that problem behavior is maintained by access to tangibles. Each session should last for 10 min. Record either the # or rate of problem behavior (PB) in each session, and summarize at the more per- session.

Alert: Begin session. Student is alone in a room with no access to attention or leisure items.
If PB: No consequences.

Attention: Begin session. Behave in order that you get help. Don't ignore.
If PB: Deliver a mild reprimand, statement of concern, physical contact, then ignore again.

Play: Begin session. Deliver frequent attention and allow free access to preferred items. Do not deliver demands.
If PB: Ignore briefly, then resume play.

Demanded: Begin session. Deliver nonpreferred academic or work tasks.
If PB: Remove task and ignore for 30 s then resume task.

Tangible: Begin session. Allow brief access to preferred item then remove and ignore.
If PB: Provide brief access to preferred item, then remove again.

Ignore: Begin session.
If PB:

Session: _____ Start date: _____
Problem behavior: _____ End date: _____

Minutes	Alert	Attention	Play	Demanded	Tangible	Ignore
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
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Mean PB						

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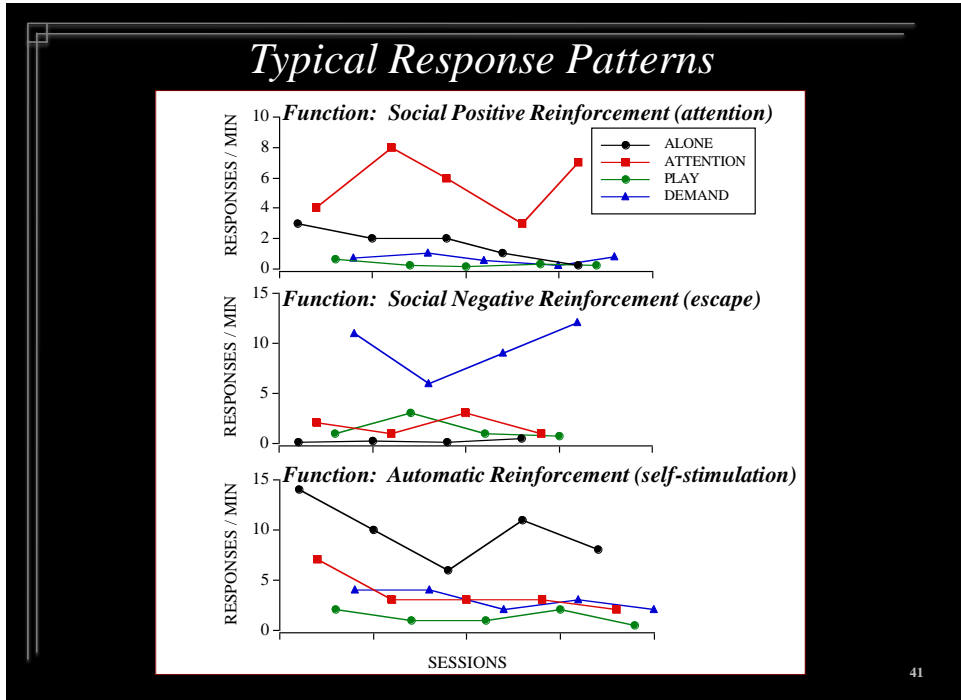
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Challenges to Functional Analysis Methodology

- ❖ *Complexity of assessment: It's too difficult*
- ❖ *Time constraints: It takes too much time*
- ❖ *Setting constraints: I don't have a controlled setting*
- ❖ *High-risk behavior: It's too dangerous*
- ❖ *Low-rate behavior: I never see the behavior*
- ❖ *Uninterpretable results: I can't identify the function*
- ❖ *Ethical concerns about worsening of behavior*

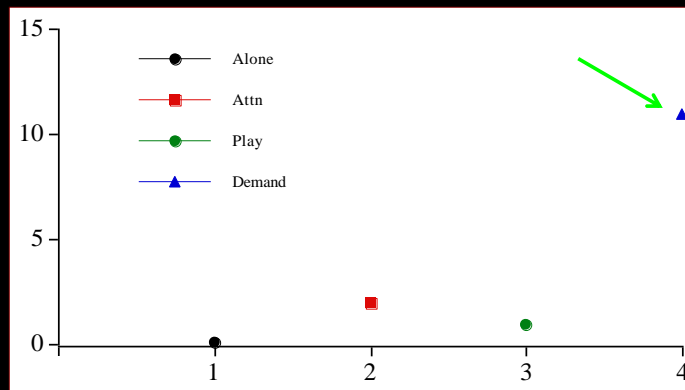
Complexity of Assessment: Logic & Data

- ❖ Logical analysis
 - ❖ *What skills are required to conduct a functional analysis?*
- ❖ Empirical analysis
 - ❖ *Undergraduate students (Iwata et al., 2000)*
 - ❖ *B.A.-level therapists (Moore et al. 2002)*
 - ❖ *Teachers (Wallace et al., 2004)*
 - ❖ *Teleconferencing (Barretto et al., 2006)*

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Time Constraints Brief Functional Analysis (BFA)

- ❖ *Northup et al. (1991): One, 5-min session of each condition*
- ❖ *Derby et al. (1992): 50% functions identified (40/79)*



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Probable Functions of Specific Behavior Disorders

<u>Behavior Disorder</u>	<i>Positive Reinforcement</i>		<i>Negative Reinforcement</i>	
	<u>Social</u>	<u>Automatic</u>	<u>Social</u>	<u>Automatic</u>
	<i>Aggression</i>	+	∅	+
<i>Tantrums</i>	+	∅	+	∅
<i>Noncompliance</i>	+	∅	+	∅
<i>Property Destruction</i>	+	?	+	∅
<i>“Stereotypies”</i>	?	+	?	?
<i>SIB</i>	+	+	+	+

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Probable Functions of Specific Behavior Disorders

<u>Behavior Disorder</u>	<i>Positive Reinforcement</i>		<i>Negative Reinforcement</i>	
	<u>Social</u>	<u>Automatic</u>	<u>Social</u>	<u>Automatic</u>
	<i>Aggression</i>	+	∅	+
<i>Tantrums</i>	+	∅	+	∅
<i>Noncompliance</i>	+	∅	+	∅
<i>Property Destruction</i>	+	?	+	∅
<i>“Stereotypies”</i>	?	+	?	?
<i>SIB</i>	+	+	+	+

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Probable Functions of Specific Behavior Disorders

<u>Behavior Disorder</u>	<i>Positive Reinforcement</i>		<i>Negative Reinforcement</i>	
	<u>Social</u>	<u>Automatic</u>	<u>Social</u>	<u>Automatic</u>
	<i>Aggression</i>	+	∅	+
<i>Tantrums</i>	+	∅	+	∅
<i>Noncompliance</i>	+	∅	+	∅
<i>Property Destruction</i>	+	?	+	∅
<i>“Stereotypies”</i>	?	+	?	?
<i>SIB</i>	+	+	+	+

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Probable Functions of Specific Behavior Disorders

<u>Behavior Disorder</u>	<i>Positive Reinforcement</i>		<i>Negative Reinforcement</i>	
	<u>Social</u>	<u>Automatic</u>	<u>Social</u>	<u>Automatic</u>
	<i>Aggression</i>	+	∅	+
<i>Tantrums</i>	+	∅	+	∅
<i>Noncompliance</i>	+	∅	+	∅
<i>Property Destruction</i>	+	?	+	∅
<i>“Stereotypies”</i>	?	+	?	?
<i>SIB</i>	+	+	+	+

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Time Constraints: Assessment Sequence

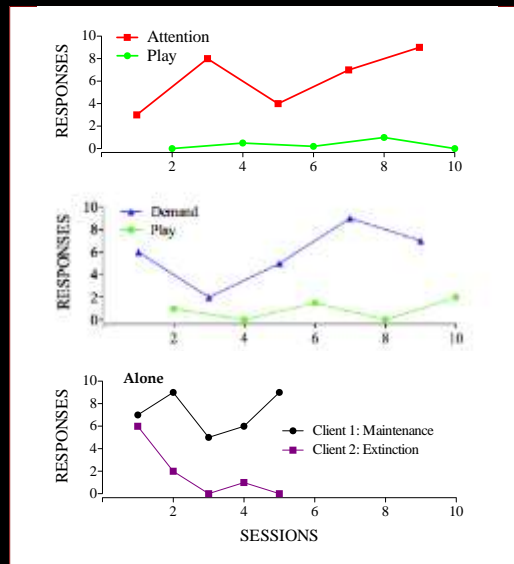
Indirect Method (MAS, QABF, FAST) – 2 informants

- ✧ *SIB: All questions relevant*
- ✧ *AGG: Social questions only*
- ✧ *STPY: Automatic questions only*

Single function FA if indirect outcome reliable

- ✧ *Social Sr+: Attention (or Tangible) vs. Play*
- ✧ *Social Sr-: Demand vs. Play*
- ✧ *Automatic Sr: Alone vs. Play (or Alone probe)*

Time Constraints: Single Function Tests



Setting Constraints

- ❖ FA in the home?
 - ❖ *Day et al. (1994), Harding et al. (2001), Nadjowski et al. (2008)*
- ❖ Typical FA in typical classroom?
 - ❖ *Berg et al. (2007); Derby et al. (1994); Dolezal & Kurtz (2010); Frea & Hughes (1997); Grauvogel & Wallace (2010); Lang et al. (2008, 2009, 2010); McComas et al. (2000, 2003); Mueller et al. (2003); O'Reilly et al. (2009)*

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Classroom-Specific, Trial-Based FA

(Bloom et al., 2011, 2013; Kodak et al., 2013; Lambert et al., 2013)

Classroom restrictions

- ❖ *Rapidly changing activities → Brief sessions*
- ❖ *Contiguous test-control comparison (control precedes test)*
- ❖ *Capitalize on naturally occurring activities*

Study arrangement (Bloom et al.): 4-min trial

- ❖ *2-min control → PB yes or no*
- ❖ *2-min test → PB yes or no*

Recommended arrangement: 5-min trial

- ❖ *1-min control → PB yes or no*
- ❖ *4-min test → PB yes or no*

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FA Trials

- ❖ Attention (no tasks present)
 - ❖ *Control: Stand near student; initiate pleasant conversation*
 - ❖ *Test: Stand near student but ignore; deliver attention only following problem behavior*

- ❖ Task Demand
 - ❖ *Control: Observe while no task demands are present*
 - ❖ *Test: Deliver frequent prompts to engage in difficult work; remove work following problem behavior*

- ❖ Alone
 - ❖ *Two consecutive test segments. Observe when student is not working, not interacting with others, and has no access to leisure items*

Trials-Based (Taskwork) Functional Analysis

Conduct trials throughout the day over the course of a week. Each trial consists of two segments (control, test only). Control (all of no attention/behavior) and test (all of no task, only "1" and go to top. Do it 10 times before the test, only "1" and segment immediately, and go to top. Do it 10 times by the end of the test, only "1" and test segment. Do it 10 times before the test, deliver attention consequences, only "1" and test segment. Do it 10 times 20 trials of each type, and summarize as % of each trial type with FA.

Attention: Control: Stand near student, deliver noncontingent attention (pleasant conversation, no tasks). Test: Stand near student but ignore (no tasks); deliver attention only following problem behavior.

Task: Control: Observe while no task demands are present. Test: Deliver frequent prompts to engage in difficult work; remove work following problem behavior.

Alone: Two consecutive test segments are conducted. Observe when student is not working, not interacting with others, and has no access to leisure items.

Baseline: Record baseline scores for problem-behavior items.

Notes: _____

Start date: _____

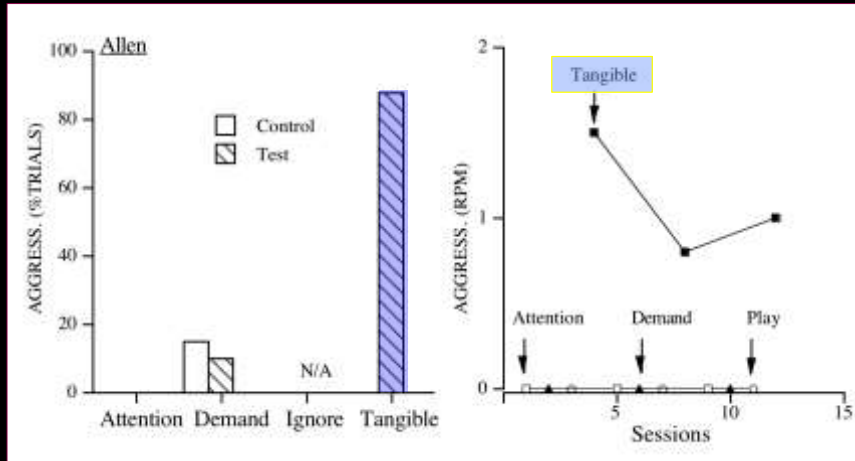
Problem behavior: _____

End date: _____

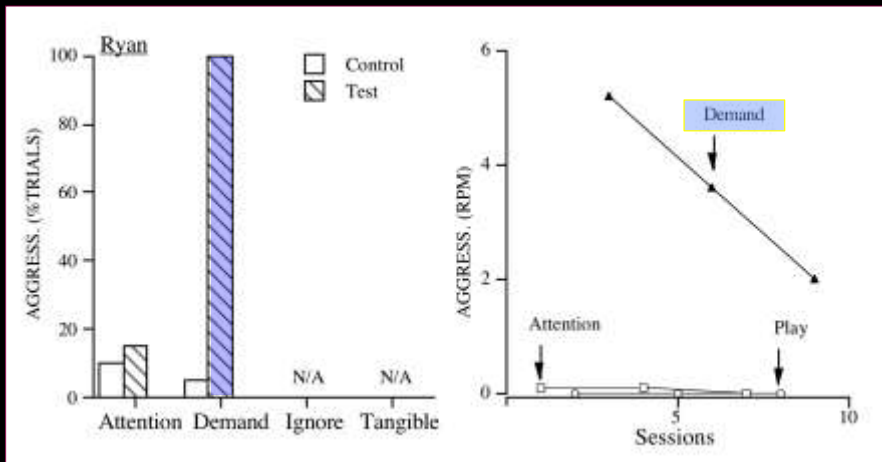
Trial	Attention		Task		Alone		Length	
	Control	Test	Control	Test	Test 1	Test 2	Control	Test
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
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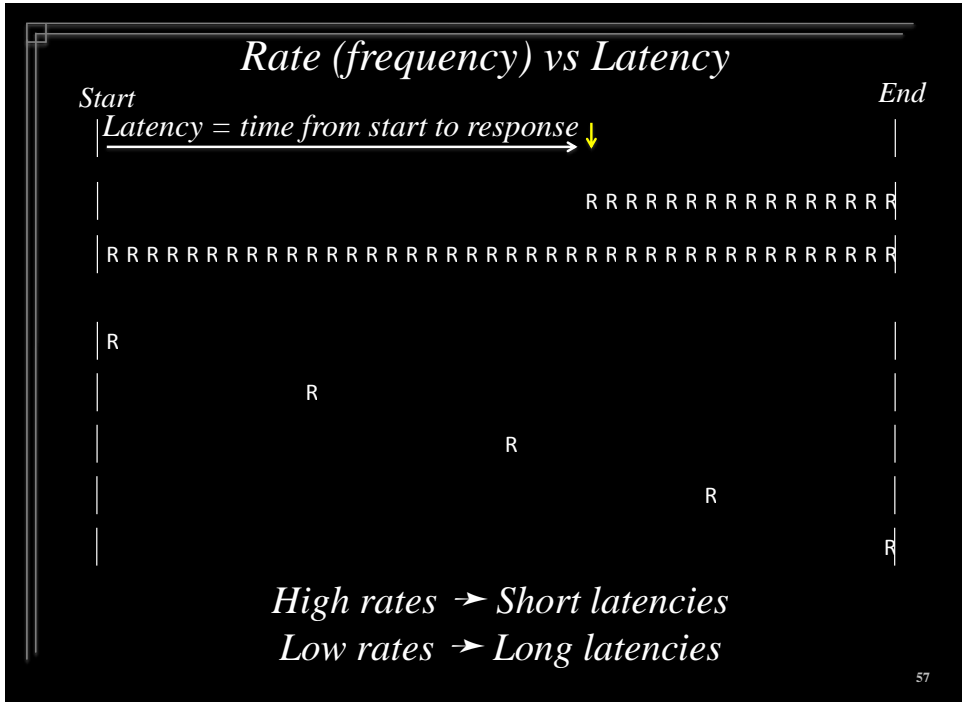
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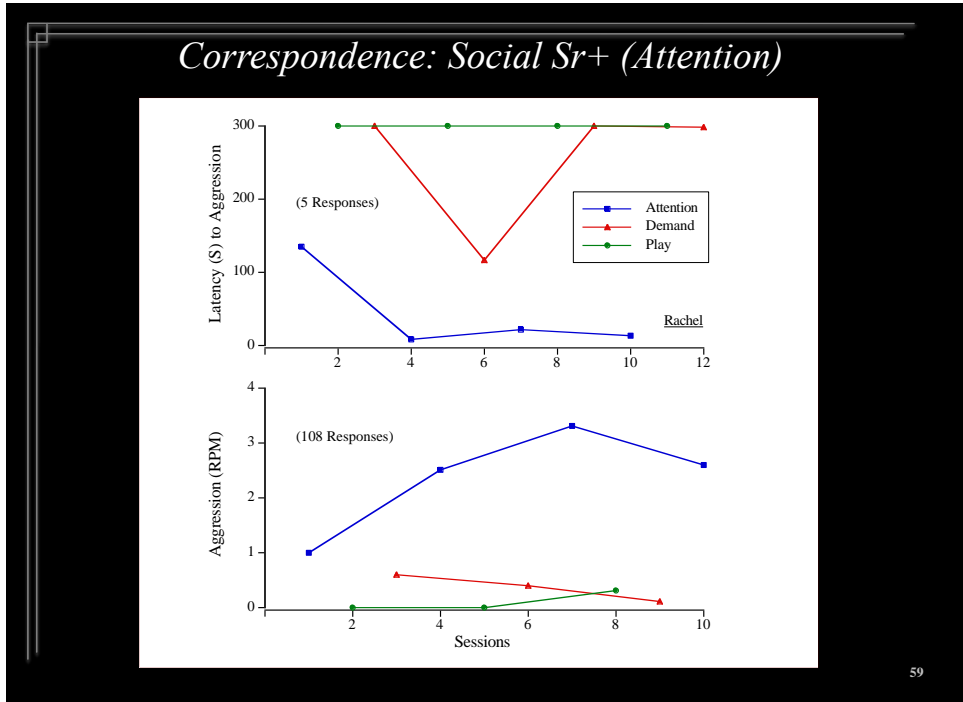


Correspondence: Social Sr-





- ### High-Risk Behavior
- ❖ Latency FA (*Thomason, Iwata, Neidert, & Roscoe, 2011, Study 3*)
 - ❖ *N=10, SIB or AGG*
 - ❖ Latency FA
 - Deliver consequence for 1st response and terminate session (or if no response in 5 min)
 - Measure: # seconds to occurrence of 1st response
 - ❖ Typical FA: Standard protocol, 10-min sessions
 - ❖ Results: 9/10 correspondence
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Precursor Behavior & Response Classes

Definition

- ❖ *Topographically different than target response*
- ❖ *Precedes and predicts occurrence of target*

Response chain (sequence of responses, different reinforcers)

- ❖ *Put on coat (stay warm) → walk out door (go somewhere)*
- ❖ *Get out of chair (close to target) → aggression (attn or escape)*

Response class (substitutable responses, same reinforcer)

- ❖ *Ask for water (water) → go looking for water (water)*
- ❖ *Swear at teacher (escape) → aggression (escape)*

Analysis of Precursor Behavior

(Smith & Churchill, 2002)

- ❖ Precursor
 - ❖ *Different R that predicts occurrence of target R*
- ❖ Method
 - ❖ *N= 4 (3 SIB, 1 AGG)*
 - ❖ *FA #1: Contingencies on SIB / AGG*
 - ❖ *FA #2: Contingencies on precursor Rs*
- ❖ Results
 - ❖ *4/4 matched FAs*
 - ❖ *PB lower during FA of precursor R*
- ❖ Implications
 - ❖ *If one can identify a precursor to PB, and*
 - ❖ *If precursor and PB members of the same functional class*
 - ❖ *FA of precursor → function of PB and lower rate of PB*
 - ❖ *Treatment of PB based on function of precursor*
- ❖ Question: **How does one identify the precursor?**
 - ❖ *See Fritz et al. (JABA 2013)*

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Why does Problem Behavior Occur at Low Rates?

- ❖ *Insufficient exposure to test condition*
 - *Lengthen sessions (Davis et al., 2012)*
- ❖ *Idiosyncratic EO or reinforcer*
 - *See reviews (Hanley et al., 2003; Schlehenmeyer et al., 2013)*
- ❖ *Response class hierarchy*
 - *Do not combine PBs (Richman et al., 1999)*
- ❖ *Combined EOs (same maintaining contingency)*
 - *Divided attention condition (Mace et al., 1986)*
- ❖ *Combined contingencies (Sr+ and Sr- simultaneously)*
 - *Escape to tangible condition (Zarcone et al., 1996)*
- ❖ *Covert behavior*
 - *Hidden observation (Ringdahl et al., 2002)*
 - *Response product measures (Maglieri et al, 2000)*

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More Reasons for Low-Rate Behavior (I'm making these up)

Delayed EOs (as in "revenge")

- ❖ *EO → either no opportunity or S^D (punishment)*
- ❖ *EO → delay → opportunity available or S^D (punishment) absent*

Cumulative EOs ("the straw that broke the camel's back")

- ❖ *EO 1 → Not a problem*
- ❖ *EO 2 → Not a problem*
- ❖ *EO 1 → EO 2 → EO 3 → Problem*

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Undifferentiated Results: Case Analysis (Hagopian et al., 2013)

Modifications to 82 undifferentiated FAs

- ❖ *Most effective: Design change (pairwise, extended "alone")*
- ❖ *2nd most effective: Separating aggregate responses*
- ❖ *Least effective: Antecedent changes (location, stimuli)*

Results

- ❖ *One modification: 55/82 cases clear*
- ❖ *Two modifications: 16/24 cases clear*
- ❖ *8 cases unresolved*

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Summary of Functional Analysis Variations

<i>Limitation</i>	<i>Suggestion</i>
<i>Complexity</i>	→ <i>Sorry, I cannot help you</i>
<i>Time</i>	→ <i>BFA (extended), Single-function test</i>
<i>Setting</i>	→ <i>Trial-based FA</i>
<i>Risk</i>	→ <i>All approximations and occurrences, Protective devices, Latency or Precursor FA</i>
<i>Low-rate</i>	→ <i>Lengthen sessions, combine EOs or contingencies, unobtrusive observation</i>
<i>A mess</i>	→ <i>Simplify design, separate PBs</i>

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Ethical Issues in the Functional Analysis of Problem Behavior

The issue: Exposure to conditions that increase risk

- ❖ *Utility of the FA?*
 - ❖ *Data highly reliable (unlike indirect assessment)*
 - ❖ *Identifies cause-effect relation (unlike DA)*
 - ❖ *The gold standard of assessment*
- ❖ *Explicit worsening of behavior?*
 - ❖ *“Sometimes it can be just as illuminating to demonstrate how a behavior may be worsened (B, W, & R, 1968)*
 - ❖ *FA involves exposure to common, everyday conditions*
 - ❖ *Analogy: Dermatologic patch test*
 - ❖ *PB does not get worse during an FA (Call et al., 2012; Kahng et al., 2015)*
- ❖ *Risk management and client protection?*
 - ❖ *FA policy and protocol*

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Risk Management: FA Policy

- ❖ *Rational for FA: To identify causes of problem behavior*
- ❖ *General description: Exposure to common conditions that may influence PB*
- ❖ *Risk assessment: Medical evaluation, HS of injuries*
- ❖ *Approval, oversight, review: Who is in charge?*
- ❖ *Informed consent: A must*
- ❖ *Staff qualifications and competency: CBA + experience?*
- ❖ *Safeguards: Periodic status checks*

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Risk Management: FA Protocol

Description of:

- ❖ *Conditions: Tests and controls*
- ❖ *Designs: Arrangement of conditions*
- ❖ *Duration: Arbitrary limit = 20 cycles of conditions?*

Safety measures:

- ❖ *Protective equipment (or blocking)*
- ❖ *Low-risk FA format: Latency, precursor*

Session termination criteria

- ❖ *Outcome (usually nature of injury)*
- ❖ *Response (type or rate)*

Emergency procedures

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RECAP: Functional Behavioral Assessment

- ❖ *Indirect Methods*
 - ❖ *Simple but unreliable*
- ❖ *DA: Descriptive (Naturalistic) Analysis*
 - ❖ *Reliable but time consuming; structural analysis only*
- ❖ *FA: Functional (Experimental) Analysis*
 - ❖ *The gold standard but complex*

- ❖ *Common recommendations*
 - ❖ *Three-stage assessment: Indirect → DA → FA*
 - ❖ *Two-stage assessment: DA → FA*
 - ❖ *My suggestion: **Neither***

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What about DA vs. Indirect Methods?

ABA based on scientific study of human behavior

- ❖ *Emphasis on objective measurement*
- ❖ *Direct observation (DA) superior to opinion (indirect)*

BUT

- ❖ *DA: Objective approach to structural analysis*
- ❖ *Indirect: Subjective approach to functional analysis*

And if you read the research carefully:

- ❖ *Neither method identifies cause-effect relations very well*
- ❖ *DA much more complex than indirect*
- ❖ *DA takes about 15-20 times longer than indirect*
- ❖ *Clinical interview easily accommodates indirect assessment*
- ❖ *DA poses some risk; Indirect poses none*
- ❖ *Indirect errors probably random; DA errors probably biased*

So . . . which would you use?

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Recommended Assessment Sequence

Step #1: Clinical interview + MAS, QABF, or FAST

Step #2: Brief (10-15 min) observation (or skip entirely)

Step #3: Functional analysis (FA, BFA, single function test, trial-based FA, latency FA, precursor FA)

Rationale: Clinicians may do #1 well but not #2 or #3. Compare the value of watching a client for 30 min (#2) vs. seeing what a client does when ignored, when presented with demands, etc. (#3)

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Barriers to Implementation

Current status of FA methods

- ❖ *The standard in clinical research and practice*
- ❖ *Still not the the most common approach to assessment*
- ❖ *Why the 30+ year lag in widespread application?*

Commonly mentioned limitations

- ❖ *Practical constraints*
- ❖ *Ethical issues*

The real barriers

- ❖ *Most academics have never conducted an FA of PB*
- ❖ *Most graduate students never learn how to conduct an FA*
- ❖ *DA is an excellent structural analysis (A → B → C)*
- ❖ *Everyone knows how to conduct a DA*

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Summary

You **SHOULD** conduct a functional analysis

- ❖ *More reliable than a questionnaire or rating scale*
- ❖ *More efficient and precise than a DA*

You **CAN** conduct a functional analysis

- ❖ *Easy to do (control antecedent and consequent events)*
- ❖ *Procedural variations for almost all limiting conditions*

SO JUST GO DO IT!

*Implications
for
Intervention*

Reinforcement-Based Approaches to Behavior Reduction

- ❖ *Eliminate the behavior's establishing operation or antecedent event (deprivation or aversive stimulation)*
 - ❖ *Noncontingent reinforcement (NCR)*
- ❖ *Eliminate the behavior's maintaining contingency*
 - ❖ *Extinction (EXT)*
- ❖ *Replace the behavior with an alternative response*
 - ❖ *Differential reinforcement (DRA)*

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Function: Social Positive Reinforcement

- ❖ *Establishing operation: Deprivation from attention*
 - ❖ *Noncontingent attention (NCR)*
- ❖ *Maintaining reinforcer: Attention*
 - ❖ *EXT (attention) or "planned ignoring"*
- ❖ *Behavioral replacement:*
 - ❖ *Establish an alternative attention-seeking response*

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Function: Social Negative Reinforcement

- ❖ *Establishing operation: Aversive stimulation (e.g., demands)*
 - ❖ *Noncontingent breaks from work (NCR)*
 - ❖ *Maintenance tasks substituted for acquisition tasks*
 - ❖ *Reduced session duration*
 - ❖ *Demand fading (frequency or difficulty)*
 - ❖ *High probability (Hi-p) instructional sequence*
 - ❖ *Noncontingent Sr+*
- ❖ *Maintaining reinforcer: Escape*
 - ❖ *EXT (escape); EXT (attention) contraindicated*
- ❖ *Behavioral replacement:*
 - ❖ *Reinforce precursor behavior*
 - ❖ *Establish an alternative escape behavior*
 - ❖ *Strengthen compliance via Sr- and Sr+*

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Function: Automatic Positive Reinforcement

- ❖ *Establishing operation: Generalized deprivation*
 - ❖ *Noncontingent stimulation (NCR)*
- ❖ *Maintaining reinforcer: Sensory stimulation*
 - ❖ *EXT (sensory); mechanical devices, blocking, etc.*
 - ❖ *Response effort interventions*
- ❖ *Behavioral replacement:*
 - ❖ *Establish an alt. self-stimulatory response*

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