

Strengthening the Link Between Functional Assessment and Behavioral Intervention Plans

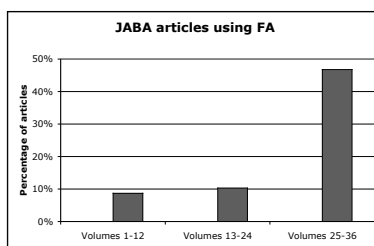
Presented by: Jose D. Rios, BCBA
4/11/08

Introduction

- Increasingly, functional assessments are being used in schools, homes, agencies and clinics and are often seen as the foundation of treatment based on applied behavior analysis.

Introduction

- For example, a review of journal articles in JABA by Worley, Barton and Hine (2005) in *Exceptionality* on the evolution of ABA in the treatment of autism showed that the use of functional analysis has increased significantly.



3

Introduction

- In brief, functional assessments are used to determine the environmental determinants of an individual's problem behavior.
- The information derived from the assessment is seen as necessary in determining how to approach and address a specific problem behavior.

4

Introduction

- As we shall see, the findings of a well-done functional assessment guide (or are expected to guide) the practitioner in deciding which interventions to recommend and use.

5

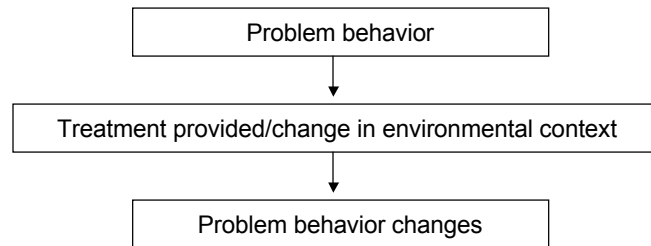
Introduction

- Two underlying principles of behavior analysis (and functional assessment methodology) are that:
 - 1. Behavior is lawful.
 - 2. That there is a functional relationship between a behavior and environmental determinants (i.e., the occurrence or non-occurrence of a behavior is controlled by a specific environmental context).

6

Introduction

- A functional relationship occurs when it can be proven, without a doubt, that a change in the environmental context produces a reliable change in a person's behavior, and that the change of the behavior was unlikely the result of another event.



7

Functional assessment

- According to the BACB ethical guidelines, a “Functional assessment includes a variety of systematic information-gathering activities regarding factors influencing the occurrence of a behavior (e.g., antecedents, consequences, setting events, or establishing operations) including interview, direct observation, and experimental analysis.”

8

Functional assessment

- According to the BACB guidelines, a “Functional assessment includes a variety of systematic information-gathering activities regarding factors influencing the occurrence of a behavior (e.g., antecedents, consequences, setting events, or establishing operations) including interview, direct observation, and experimental analysis.”

9

Functional assessment

- According to the BACB guidelines, a “Functional assessment includes a variety of systematic information-gathering activities regarding factors influencing the occurrence of a behavior (e.g., antecedents, consequences, setting events, or establishing operations) including interview, direct observation, and experimental analysis.”

10

Functional assessment

- According to the BACB guidelines, a “Functional assessment includes a variety of systematic information-gathering activities regarding factors influencing the occurrence of a behavior (e.g., antecedents, consequences, setting events, or establishing operations) including interview, direct observation, and experimental analysis.”

11

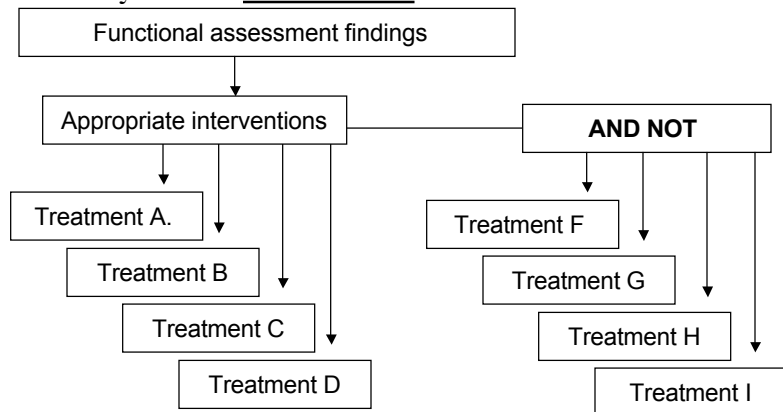
Functional assessment

- Knowing the function of a problem behavior serves as a guide to a practitioner in determining the specific methods that should be used to address a problem behavior; therefore there is (or should be) an explicit link between functional assessments and interventions.

12

Functional assessment

- In addition, on a priori basis, a functional assessment will likely identify interventions that are likely to be ineffective.



Is a functional assessment necessary?

- They are often mandated by state laws although their methodology and purpose vary from state to state.
- Functional assessment is a key aspect of the behavior intervention strategies mandated for IEPs by the 1997 and 2004 reauthorizations of IDEA.

Is a functional assessment necessary?

- Research has shown that intervention plans that are guided by accurate data taken from a well-done function assessment are more effective in producing desired behavior change as well as change that is durable.

15

Is a functional assessment necessary?

- Prior to functional assessments, interventions were often implemented that were powerful enough to override the existing but unidentified maintaining contingencies for a problem behavior and/or strengthened an incompatible behaviors that was arbitrarily selected (and strengthened that behavior through the use of contrived reinforcement contingencies).

16

Is a functional assessment necessary?

- Prior to functional assessments, interventions were often implemented that were powerful enough to override the existing but unidentified maintaining contingencies for a problem behavior and/or strengthened an incompatible behaviors that was arbitrarily selected (and strengthened that behavior through the use of contrived reinforcement contingencies).

17

Is a functional assessment necessary?

- This often required interventions that were more intrusive, punitive and restrictive than would have been necessary had a methodology been available to identify the maintaining contingencies for the problem behavior (with the objective of matching interventions to those contingencies).

18

Are all plans based on a functional assessment?

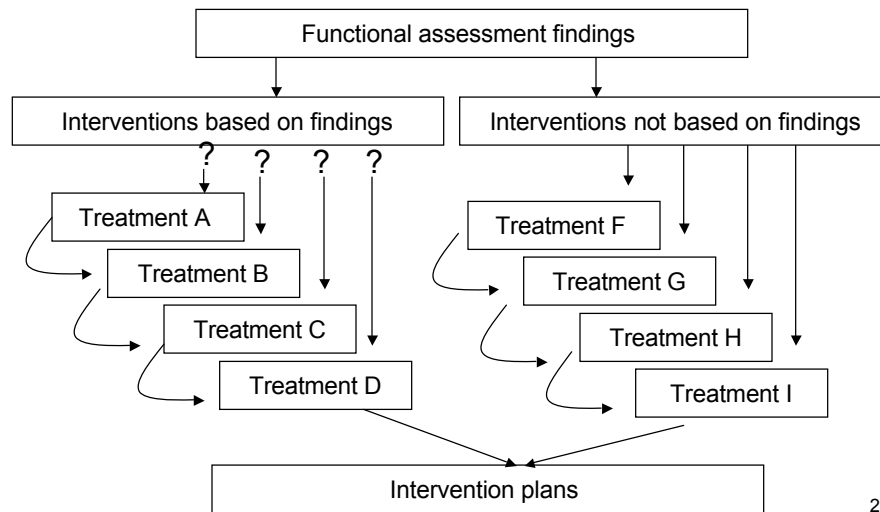
- No. In fact, while functional assessments are increasingly being used, they too often do not serve their intended purpose (i.e., to serve as a guide or link between assessment results and those interventions chosen and used).

19

Case #	Target Behaviors	Interventions Recommended									
		Verbal Prompt	Positive Reinforcement	Redirection	DTK	Rehearsals	DDP	Redirection	Timeout	Response Cost	
1	Grabbing clothes	x		x				x		x	
	Grabbing food	x		x	x						
	Agitation		x	x							
2	Aggression		x					x	x		
	Tantrum										
3	Inappropriate Language	x			x				x		
	Physical aggression	x	x	x	x				x		x
	Suicidal threats	x		x		x			x		
4	Aggression	x	x		x						
	Self-Injurious behavior		x								
	Property destruction										
5	Self-Injurious behavior		x		x						
	Physical aggression										
6	Confining self			x	x						
	Aggression										
	Grabbing others										
	Self-Injurious behavior										
7	Biting	x	x								
	Self-Injurious behavior	x		x	x			x			
	Aggression	x		x	x			x		x	
8	Tantrum	x		x	x			x			
	Elopement	x			x	x					
	Panic attacks	x	x								
9	Verbal aggression	x	x	x							
	Non-compliance	x	x								
	Bolting					x					
10	Inappropriate voice volume	x									
	PICA		x								
	Grabbing	x				x					
11	Assault	x		x		x					
	Attempt to bite	x			x				x		
	Self-Injurious behavior	x		x							
	Disrobing		x		x						
	Urinating in inappropriate settings	x		x							
PICA		x									

20

Intervention plans



Interventions may be chosen based on:

- weak, ambiguous or non-existent assessment findings.
- the repertoire of specific practitioner.
- agency, practitioner philosophies.
- contingencies of the funding agency and the practitioner.

What is the impact of “ineffective” interventions?

- They may have no effect on the problem behavior.
- They may worsen the problem behavior.
- They may waste staff or parent time and energy.
- They may waste agency and consultant’s valuable time, resources and energy.

23

What is the impact of “ineffective” interventions?

- They may increase parent and staff burnout.
- They may result in an increased use of methods to override the unidentified maintaining contingencies such as through the use of contrived reinforcing contingencies.

24

What is the impact of “ineffective” interventions?

- This limits the generalization and maintenance of treatment effects after the termination of the contrived reinforcing contingencies when the actual (and unidentified) contingencies reacquire control of the problem behavior.

25

What is the impact of “ineffective” interventions?

- Finally, they may result in an increased use of more intrusive, punitive and restrictive methods.

26

Functional assessment

- For the most part, an individual's problem behavior comes about through his or her learning experiences with the environment and are maintained by various contingencies of reinforcement.

27

Functional assessment

- Various methods are used to conduct a functional assessment.
- Each has distinct uses and each has definite limitations or disadvantages.

28

Indirect assessment methods

- This includes interviews with third parties, completion of surveys, ratings and questionnaires.
- Advantages: Their simplicity.
- Disadvantages: They rely on verbal reports and are often unreliable.
- Comments: A commonly used method. May be useful for initial fact-finding.

29

Descriptive assessment methods

- This includes direct observations, or the completion of ABC forms.
- Advantages: Superior to indirect methods.
- Disadvantages: Results are correlational, some events may be missed, does not allow for control of environmental contexts, relies on inferences between behavior and environmental events.
- Comments: Also a commonly used method. Also may be used for initial fact-finding, requires training to conduct properly.

30

Functional analysis methods

- This involves systematic introduction and removal of environmental events posited as affecting behavior.
- **Advantages:** Only method that identifies cause-effect relationships (i.e., functional relationships).
- **Disadvantages:** Requires training, complicated, not useful with low rate behavior or some severe problem behaviors that pose a high risk to the individual or others.
- **Comments:** Increasingly being used.

31

Preliminary assessment methods

- 1. Indirect assessment/Interviews and background information gathering.
 - Identify and define behavior of concern.
 - Identify, rule out medical variables.
 - Identify current skills.
 - Identify relevant background information.
 - Meet with significant others.
 - Get preliminary information on possible antecedent conditions involved.

32

Preliminary assessment methods

- 2. Preliminary data collection.
 - Obtain initial estimate of behavior.
 - Determine method(s) to be used to measure behavior (e.g., partial-interval, time sampling).
 - Obtain initial information on behavior patterns, correlates.
 - Determine severity of behavior/impact of behavior.

33

Preliminary assessment methods

- 3. Obtain initial information on possible about possible behavior functions.
 - Use ABC analysis or other methods to identify possible antecedents.
 - Conduct descriptive analysis (direct observations).

34

Preliminary assessment methods

- 4. If need exists, conduct a functional analysis.
 - Get consents.
 - Ensure client protection.
 - Specify session location and length of sessions.
 - Define target responses.
 - Identify observer(s), therapist.
 - Construct data collection system.
 - Get needed material (e.g., reinforcers, tasks, timer).

35

Functional assessment purpose

- The purpose of a functional assessment is to determine which contingencies maintain a person's problem behavior.
- A problem behavior may be maintained by one of more of the upcoming reinforcing contingencies.

36

Functional assessment

- While the specific reinforcers involved in such a behavior vary widely from person to person and circumstance to circumstance, it is possible to narrow them down into either:
 - positive reinforcement
 - negative reinforcement

37

Functional assessment

- These two reinforcement contingencies can also be classified as being either:
 - social (requiring others to mediate)
 - automatic (as a result of the behavior itself and not requiring the mediation of others)

38

Contingencies that maintain behavior

	Socially mediated	Not socially mediated
Addition of a stimulus	Social positive reinforcement	Automatic positive reinforcement
Withdrawal of a stimulus	Social negative reinforcement	Automatic negative reinforcement

39

Contingencies that maintain behavior

	Socially mediated
Addition of a stimulus	Social positive reinforcement

40

Contingencies that maintain behavior

Addition of
a stimulus

Not socially
mediated

Automatic
positive
reinforcement

41

Contingencies that maintain behavior

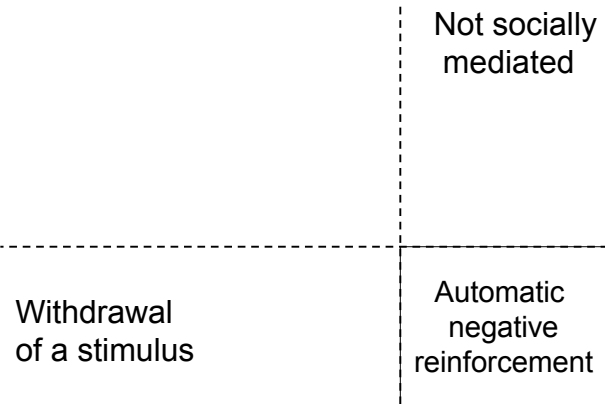
Withdrawal
of a stimulus

Socially
mediated

Social
negative
reinforcement

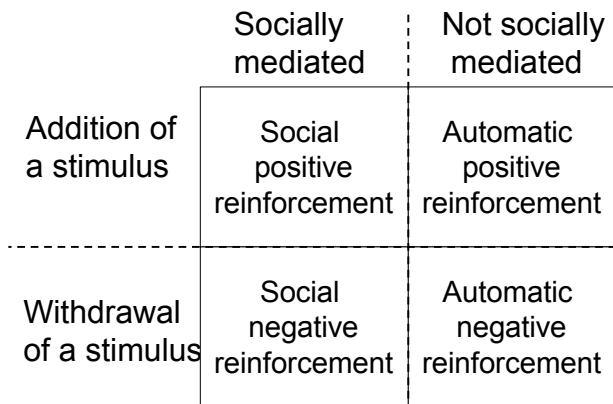
42

Contingencies that maintain behavior



43

Contingencies that maintain behavior



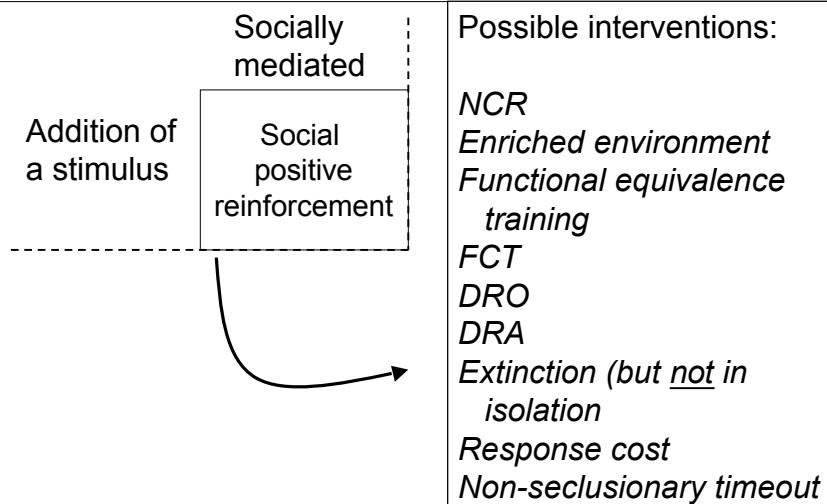
44

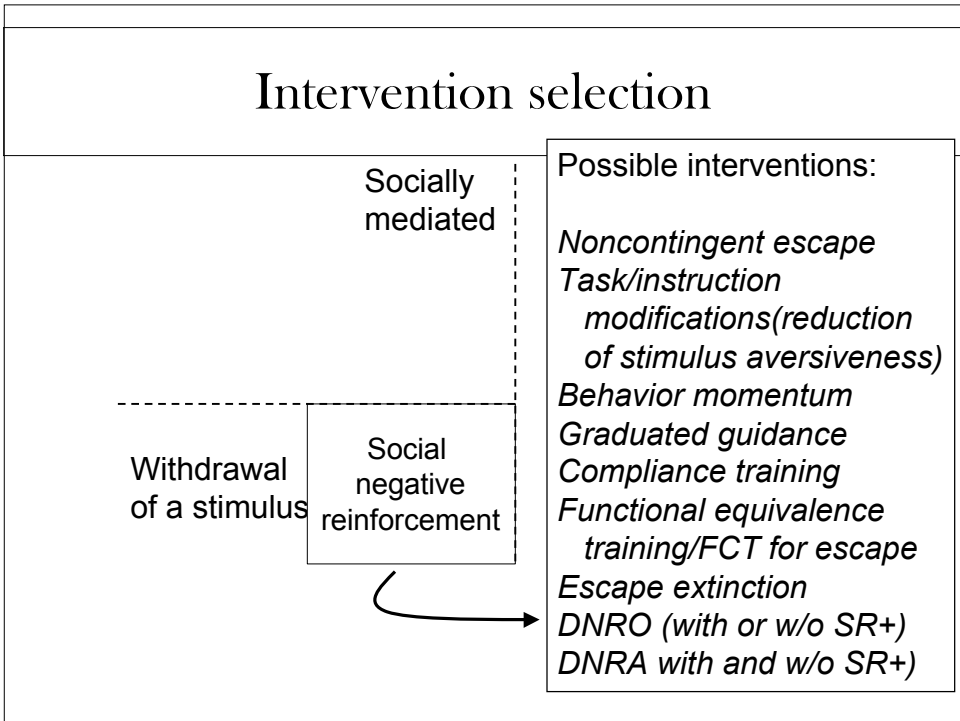
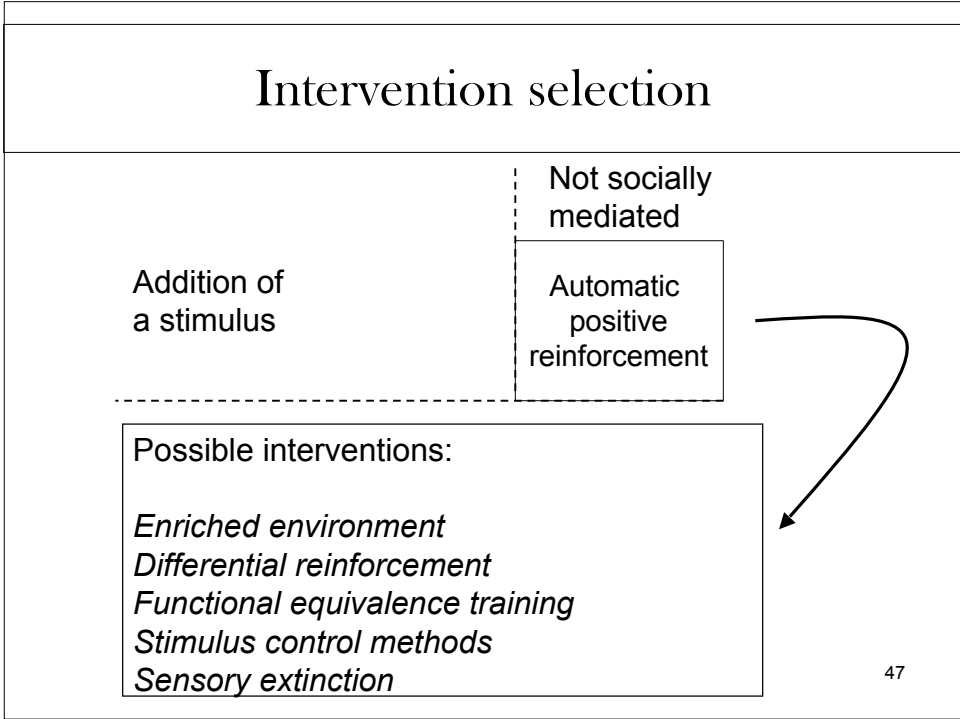
Intervention selection

- Based on the contingency or contingencies identified through a well-done, accurate functional assessment, interventions can (and should) be chosen that best “fit” the individual’s specific circumstances.

45

Intervention selection





Intervention selection

Possible interventions:

Medical intervention
FCT to communicate pain
or discomfort

Not socially
mediated

Withdrawal
of a stimulus

Automatic
negative
reinforcement

49

Further issues on intervention selection

- Knowing the function of the problem behavior also points out possible Motivating Operations (MOs) that may be in effect (and that may also be addressed to change the person's problem behavior).
- For example, a person deprived of attention may learn to use inappropriate behaviors such as tantrums or self-injury to get this need fulfilled. Therefore, intervention should address those MOs.

50

Further issues on intervention selection

- Michaels has noted that behavior maintained by some reinforcer occurs because the presence of some antecedent event makes a reinforcer valuable to the individual. That event has a:
 - Value-altering effect
 - Establishing operation effect
 - Behavior-altering effect
 - Evocative effect

51

Further issues on intervention selection

- In the case where an individual's problem behavior is maintained by social positive reinforcement (e.g., attention), NCR may be recommended.
- This would involve denser (i.e, richer) schedules of reinforcement (e.g., increased attention).

52

Further issues on intervention selection

- In the case where an individual's problem behavior is maintained by social negative reinforcement (e.g., escape from a task), NCR also may be used.
- This also may involve noncontingent task removal (i.e., noncontingent escape) and/or task modification (e.g., reducing task complexity or scheduling noncontingent breaks).

53

Further issues on intervention selection

- Extinction can and should be combined with NCR (as well as with most other interventions chosen).
- With extinction, the reinforcer for the behavior is withheld so that the problem behavior no longer results in reinforcement.

54

Further issues on intervention selection

- While extinction is often recommended, it requires that the specific function(s) of an individual's behavior be identified.
- Otherwise, the withholding of some stimuli based on the occurrence of the problem behavior is capricious at best.

55

Further issues on intervention selection

- Extinction for behaviors based on automatic positive reinforcement are more difficult to implement (again, because the source of the reinforcement is directly produced by the behavior itself and is not observable).
- However, in some cases extinction may be used by arranging conditions so that the consequences of the behavior are limited (i.e., sensory extinction).

56

Further issues on intervention selection

- Extinction for behaviors based on social negative reinforcement may be achieved by a continued presentation of the task or instruction and then not removing these activities contingent upon the occurrence of the problem behavior (i.e., escape extinction).

57

Further issues on intervention selection

- Extinction for behaviors based on automatic negative reinforcement would not be ethical or justified because in essence, the individual is left with no effective way to address her or her problem (e.g., pain or discomfort).

58

Further issues on intervention selection

- Knowing the function of a problem behavior also helps in determining functionally equivalent replacement behaviors.

59

Further issues on intervention selection

- An intervention that produces or teaches alternative behaviors that are more acceptable involves differential reinforcement (as well as variations of differential reinforcement such as DRA).
- DRA may be used to teach more functional methods to communicate or acquire reinforcement contingent upon a desired response, gesture or vocalization.

60

Summary

- Functional assessments are increasingly being recommended and are intended to serve as a link or guide to intervention.
- However, despite their frequent use, practitioners often design intervention plans without accurate assessment results and/or without consideration of the need for a functional relationship between the assessment and treatments recommended.

61

Summary

- An accurate functional assessment identifies the contingencies of reinforcement that are in effect.
- This assists the practitioner in identifying interventions that are likely to be effective (as well as those that are likely to be ineffective).

62

Summary

- Intervention may be chosen that alter the MOs involved in a problem behavior (such as with NCR), that eliminate the reinforcement that maintains the problem behavior (extinction) and that teach the individual alternative and more desirable responses (differential reinforcement).

63

Summary

- Indisputably, effective treatment based on applied behavior analysis requires that there be a strong link between assessment findings and any recommended interventions.

64

The end

65