Thompson Center
For Autism & Neurodevelopmental Disorders
University of Missouri

Sensory or Behavior?
Teasing Out Behavioral Functions

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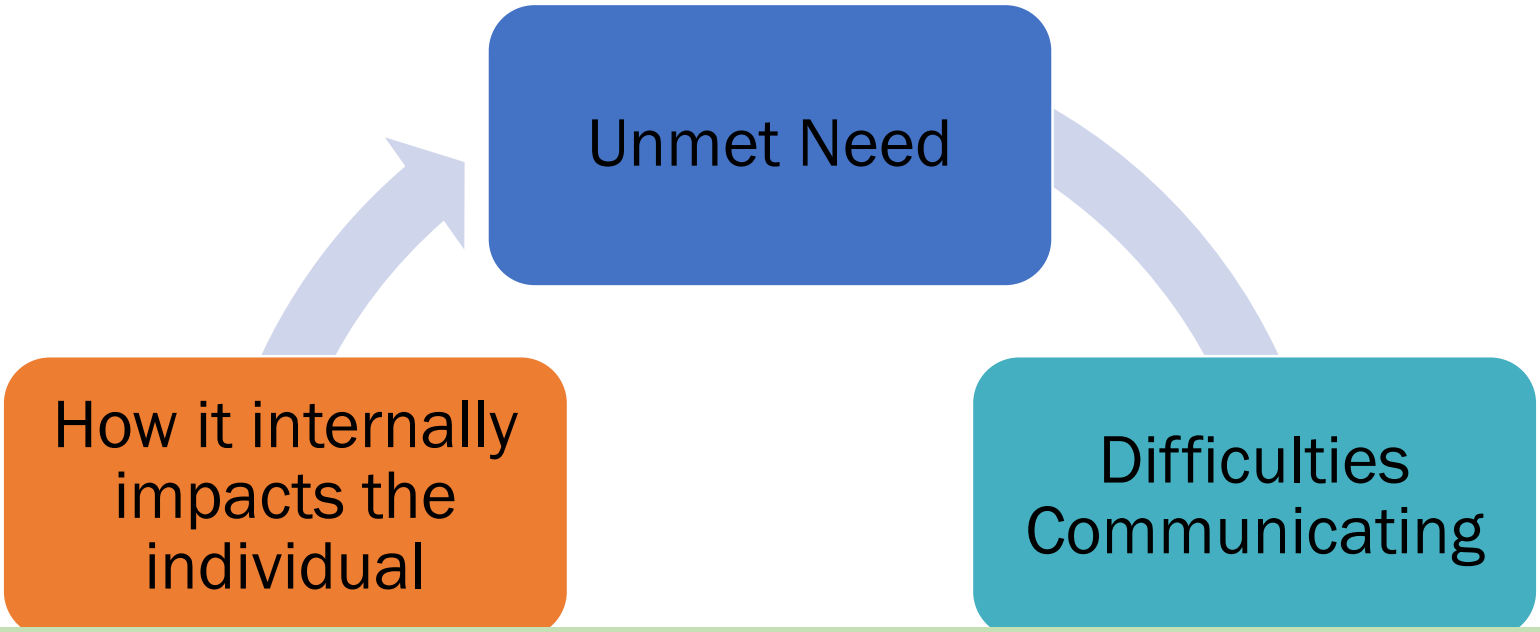
All materials can be downloaded here:
https://missouri.box.com/v/BehaviorFunction

Why Does Problem Behavior Happen?



Be aware of the "automaticity of reinforcement": behavior can be modified by its consequences regardless of whether the individual is aware they are being reinforced

Automatic Positive Reinforcement (Adds something)

- Brushing your hair because you want it to be neat
- Dressing yourself
- Putting salt on your own dinner to improve the taste of the food
- Tying your shoelaces
- Watching a movie because you enjoy it

Automatic Negative Reinforcement (Removes something)

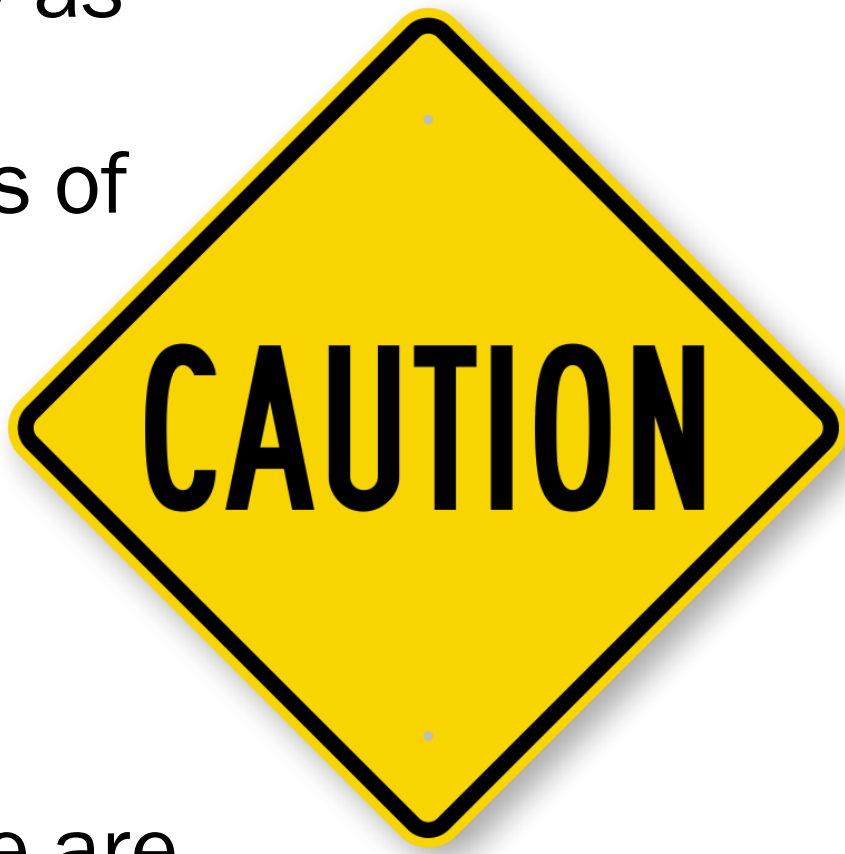
- Washing your own hands to remove dirt
- Cutting your own finger nails to reduce their length
- Throwing out rubbish
- Turning on your car windscreen wipers to remove rain water
- Rubbing your leg to sooth the pain after banging it off a table edge

Automatic Reinforcement

- Sometimes also called:
  - Self-stimulatory behavior
  - Sensory behaviors
  - Stereotypy
  - Repetitive movements
  - Echolalia
- These can at times occur more when someone is overexcited, over stimulated, upset

Automatic Reinforcement

- If we label this too quickly as "automatic" we may stop looking for other functions of the behavior
- Automatically maintained behaviors are often very difficult to address
- Need to ensure that these are not motor tics



Identifying Function

Why Problem Behavior May Occur

- To get something…
  - Attention (adult or peer)
  - Tangibles
  - Body sensation

- To avoid something…
  - Attention (adult or peer)
  - Situation or task
  - Body sensation

Yelling out/making noises to get other kids to laugh

Pounding on the table to get more snacks

Pushing legs repeatedly against the wall

Hitting staff so she will leave him alone

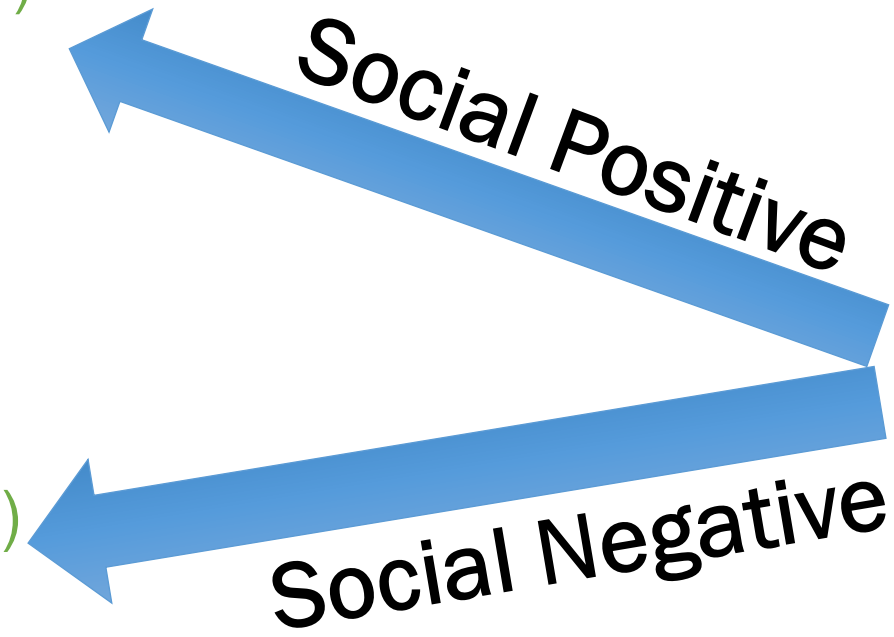
Throwing book so they do not need to complete the work

Covering ears/eyes in the busy hallway

"Socially Mediated" Behavior (other people help get access to these)

- To get something…
  - Attention (adult or peer)
  - Tangibles
  - Body sensation

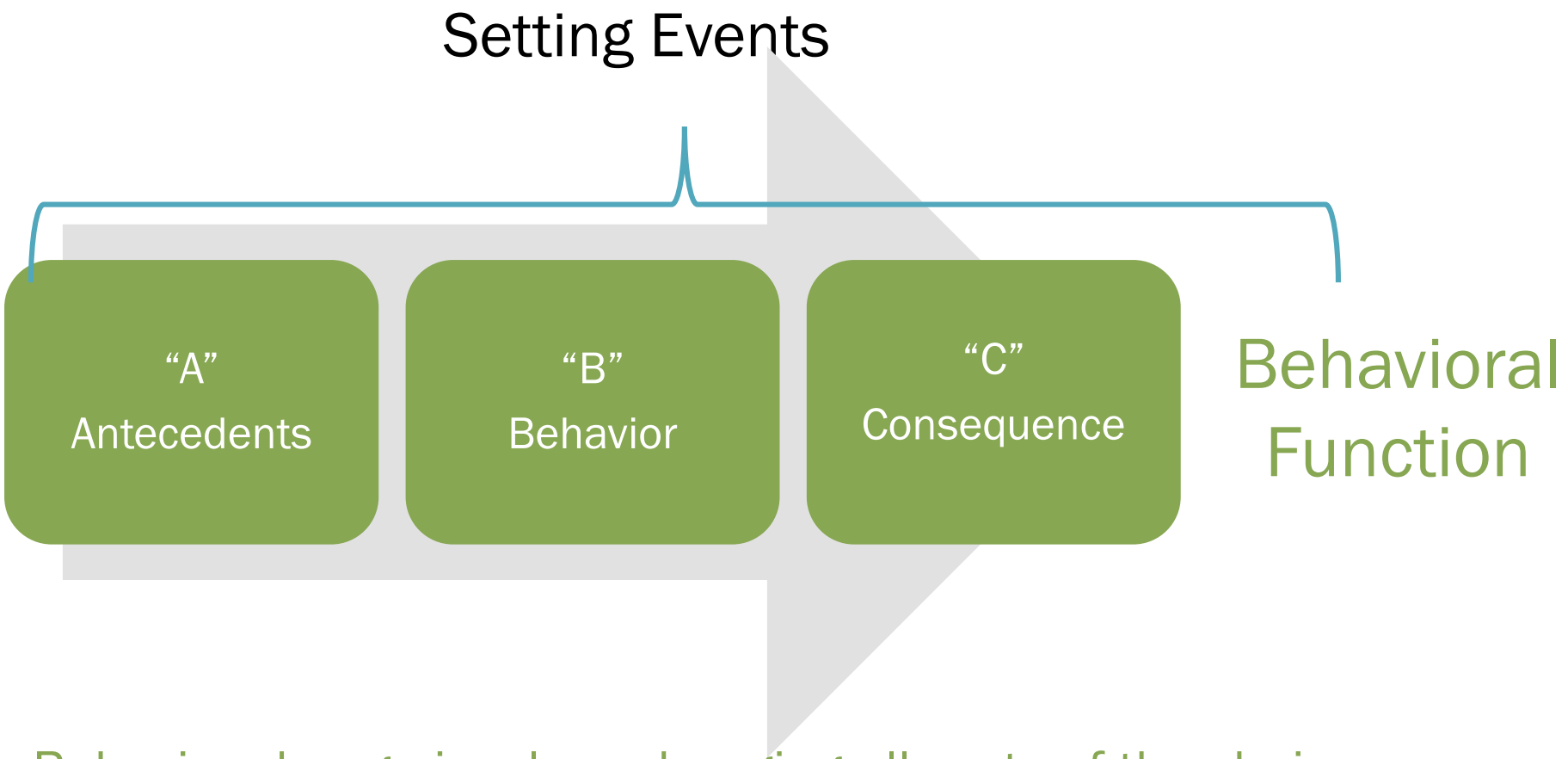
- To avoid something…
  - Attention (adult or peer)
  - Situation or task
  - Body sensation



“Socially Mediated” Behavior

- Just because the behavior happens without people there doesn’t mean that it is automatically automatic

The ABC's of Behavior



Behavior change involves changing all parts of the chain

How do we figure out if a behavior is **sensory in nature**

(truly automatic)

or

instead is **socially mediated** and serves a different function?

Identifying Function

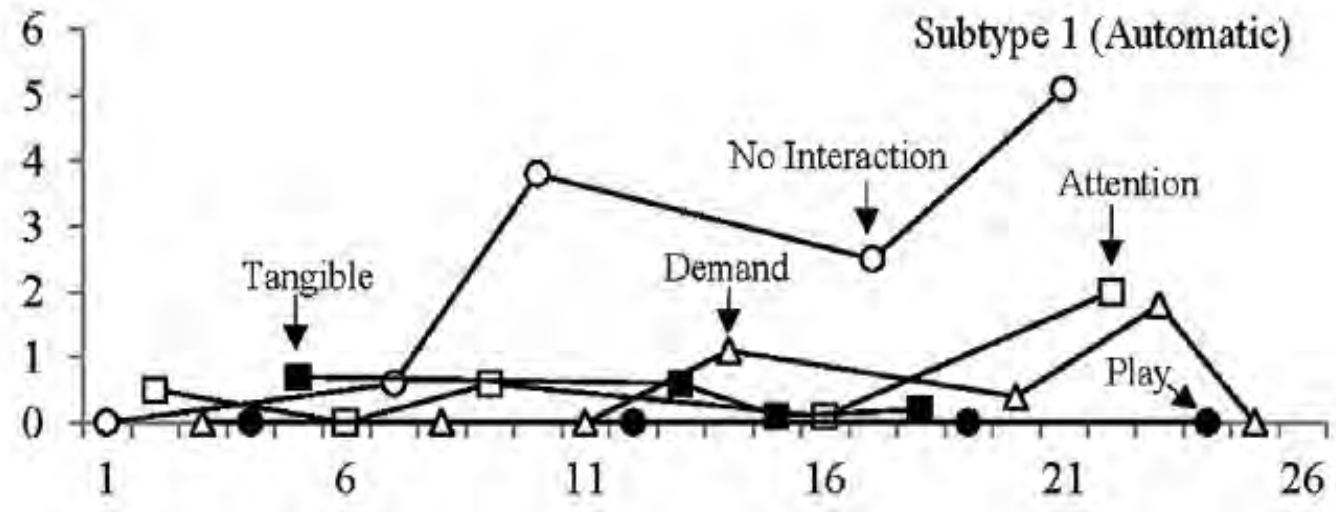
- Function is essential!
- Unfortunately many professionals report not fully using FBA or FA procedures:
  - Oliver et. al, 2015, survey of 682 behavior analysts
    - ✓ 90% report regularly using FBA methods (descriptive- most common)
    - ✓ 63% of survey respondents had never used a FA
    - ✓ Common barriers- time, materials/space, and policies

Functional Assessment Results

Automatic reinforcement is a supported hypotheses:

- When the target behavior occurs at the highest level during the alone condition (example below)
- Possibly when standard FA results are inconclusive do not have a clear pattern

LOUIS P. HAGOPIAN *et al.*



Functional Behavior Assessment

Step 1: Use Indirect Assessments

Records review Rating scales	Interviews (e.g., teacher, student, parent)

Step 2: Collect ABC Data

Using antecedent and consequences from Step 1 information	Collect across multiple contexts and days to

Step 3: Analyze information to identify function

Look for patterns of behavior	Identify function

Example Data Sheet

Teacher: Class:		Date/ Time / Location (if not in the classroom)										
												Total
BEHAVIORS	Verbal Refusal											
	Disruptive Verbal Behavior (noises)											
	Fleeing											
	Property Destruction											
	Aggression											
ACTIVITY	Unstructured Activity											
	Structured Activity											
	Transition											
	Academic : independent work											
	Academic: group work											
	Academic: teacher led											
	Down time / wait time											
	Difficult task											
ANTECEDENT	Directive given											
	Transition											
	Engagement with a peer											
	Peers respond or encourage student											
	Peers ignore											
	Teacher working with others											
	Told "no" or "wait"											
	Other:											
CONSEQUENCE	**Adult Attention**: warning, repeated direction, offer to help, told consequence for action, debrief											
	Peer Attention: laughing, commenting back, orienting towards											
	Teacher/peer provided access to desired items/ activities											
	Student took/accessed desired item/activity on own											
	Adult provided escape or temporary escape from activity or task: sent to safe seat, removal from room, removed task (even briefly)											
	Student got escape because behavior delayed activity, no adult redirection provided											
	Adults and peers ignored the behavior											

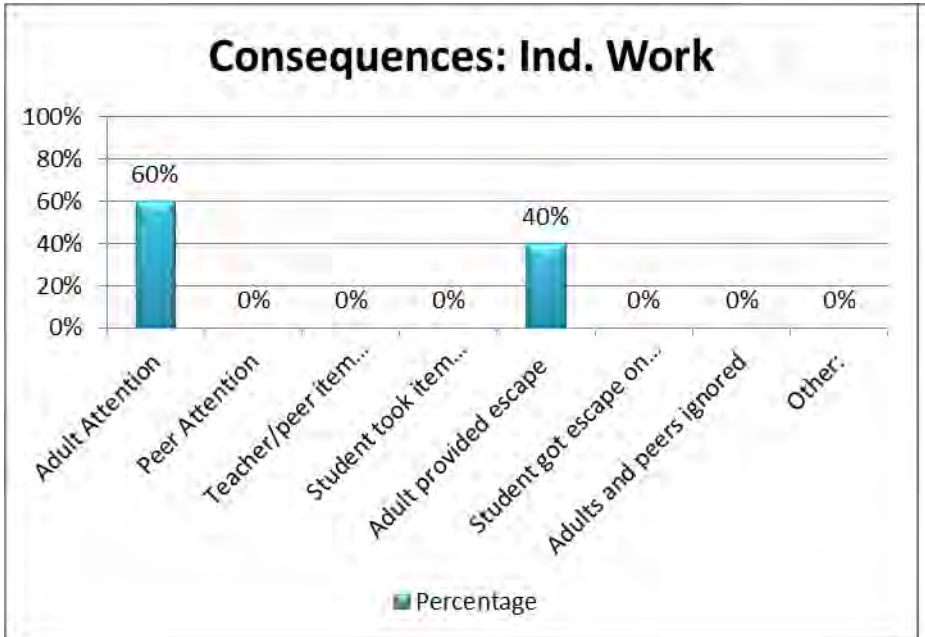
Teacher: O'Connor
Class: Resource

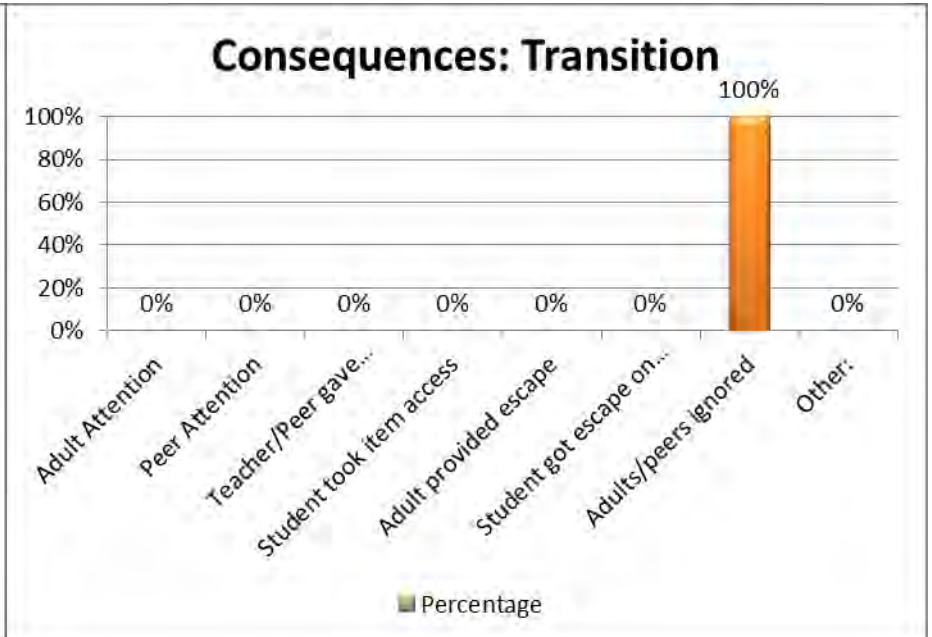
		Date/ Time / Location (if not in the classroom)										
		8:40	8:44	8:48	8:52	8:55	9:03	9:05	9:07	9:10	9:12	Total
BEHAVIORS	Hand slapping	X	X	X	X	X	X	X	X	X	X	10
	Immediate repeat phrase	X	X									2
	Aggression											
	Fleeing											
ACTIVITY	Unstructured Activity											
	Structured Activity											
	Transition						X	X	X	X	X	5
	Academic : independent work	X	X	X	X	X						5
	Academic: group work											
	Academic: teacher led											
	Down time / wait time											
	Difficult task											
ANTECEDENT	Directive given	X	X	X								3
	Transition						X	X	X	X	X	5
	Engagement with a peer											
	Peers respond or encourage student											
	Adults or Peers ignore											
	Teacher working with others											
	Told "no", "wait" or item removed				X	X						2
	Other:											
CONSEQUENCE	**Adult Attention**: warning, repeated direction, offer to help, told consequence for action, debrief, physical redirect	X	X	X								3
	Peer Attention: laughing, commenting back, orienting towards											
	Teacher/peer provided access to desired items/ activities											
	Student took/accessed desired item/activity on own											
	Adult provided escape or temporary escape from activity or task: sent to safe seat, removal from room, removed task (even briefly)				X	X						2
	Student got escape because behavior delayed activity, no adult redirection provided											
	Adults and peers ignored the behavior						X	X	X	X	X	5

Functional Behavior Assessment

Step 3: Analyze information to identify function

Look for patterns of behavior	Identify function
• Common antecedents? • Common consequences? • Time of day?	• Type of activity? • Personnel involved?





Functional Behavior Assessment

Step 3: Analyze information to identify function	
Look for patterns of behavior	Identify function

Get more information on consequences to refine function

Consequence Analysis Form:

- Looks at specific types of consequences
- Can help refine for behavior planning

BEACON CONSEQUENCE ANALYSIS FORM (BCAF)

321 Fortune Boulevard, Milford, MA 10757
Office: 508-478-0207

Target Behavior: _____

Operational Definition (must be observable and measurable with clear onset and offset criteria): _____

_____

_____

For each occurrence of the target behavior place a checkmark in all categories 1A-8A that actually occurred following the occurrence of that instance of the target behavior, repeat this for each instance of the target behavior.

Consequence Description		Occurrence of the Target Behavior's Immediate Effect on the Environment																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1A	Did a person speak to them during or within 20 seconds after the behavior occurs?																				
1B	Did a person speak to them using 1-5 words?																				
1C	Did a person speak to them using 6 or more words?																				
2A	Did the behavior result in any person making eye contact with them during or within 20 seconds after the behavior occurs?																				
3A	Did any form of physical contact occur during or within 20 seconds after the behavior occurs (e.g. touching, blocking, lifting, hand over hand prompting, physical holding)?																				
3B	The physical contact was 1- 5 seconds																				
3C	The physical contact lasted more than 5 seconds																				
4A	Proximity: Did any person move closer to the person during or within 20 seconds after the behavior occurs?																				
5A	The behavior resulted a task/materials being removed within 20 seconds of the behavior occuring and not being represented for at least 2 minutes																				
6A	The behavior resulted a task/materials not presented and not being completed																				
7A	A tangible (e.g., toys, electronics, edibles) item is presented immediately following the behavior																				
7B	The behavior results in the person obtaining and keeping a tangible item for more than 1 minute																				
7C	The behavior results in the person obtaining and keeping a tangible item for less than 1 minute																				
8A	No one touched, talked to, looked at them or moved any items or materials in the environment (0-60 seconds) after the behavior occurred and the behavior did not **END** with an intervention																				

Instructions: Download and print data sheet to use.

Trial Based FA Considerations

- FA model for applied settings
- Utilizes situations already happening
- Data are collected on the occurrence of behavior following a specific antecedent
- Brief trials distributed throughout the school day

Key:
0= nonoccurrence
1= occurrence

Y= 100% fidelity
N= failed trial

Attention

Trial #	Date	Obs	Th	Control	Test	Fidelity
1	2/26/15	AD	MR	0	1	Y
5	2/27/15	AD	MR	0	1	N

Rispoli, et al., 2016

ABACLive Webinar: Trial Based FA in Schools

https://www.abacnj.com/product/tbfaschools/

Interventions to Address Behaviors

Evidence-Based Practices

All evidence is not created equal

Three Categories

Science

Pseudo-science

Anti-science

Evidence-Based Practices

- Currently there is **not** research to support the use of sensory integration or sensory therapy to address problem behavior for children with autism

  (Addison, et al., 2012; Case-Smith, Weaver & Fristad, 2015; Lang, et al., 2012; Moore, Cividini-Motta, Clark, & Ahearn, 2015; Sniezyk & Zane, 2015)

- That is not to say that there may be antecedent manipulations that involve changing sensory input/output that may impact problem behavior

Evidence-Based Practices

- Lang, et al. (2012): reviewed 25 sensory integration therapy (SIT) studies- conclusion no evidence
  - 3 studies- suggested evidence: methodological flaws, 8 studies- mixed results, 14 studies- no benefit
- Case-Smith, Weaver & Fristad (2015): reviewed 19 studies- limited or no impact, methods lacked rigor
- Sniezyk & Zane (2015): intervention study 3 children with stereotypy and SIT- no impact on behaviors
- Moore, et al. (2015): intervention study 5 children with automatically maintained stereotypy, no impact
- Addison, et al. (2012): interventions study 2 children with feeding disorders, behavior analytic methods more effective than sensory integration

Caution: Sensory Based Strategies

- Be aware that movement may be beneficial for all kids
- All kids can learn coping strategies instead of using negative behavior
  - Deep breaths, walks, getting water
- Need to make sure sensory strategies are not paired with problem behavior
- Want to keep kids engaged in learning environment

Navigating Non-Behavioral Treatment

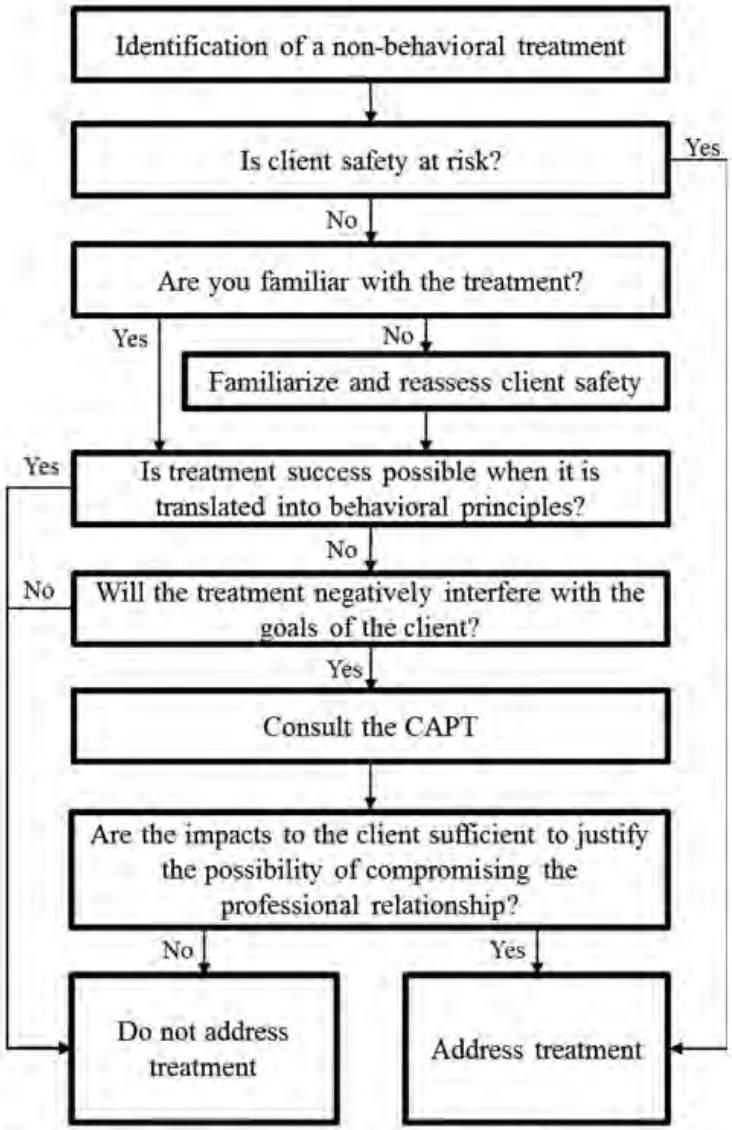


Fig. 1 A decision-making model for assessing nonbehavioral treatments

It is essential to:

- Maintain relationships with families and other providers
- Communicate EBPs to others
- Serve your students ethically
- Respect perspectives of others and facilitate dialogue
- Good resource: Brodhead, 2015

Problem Behavior:

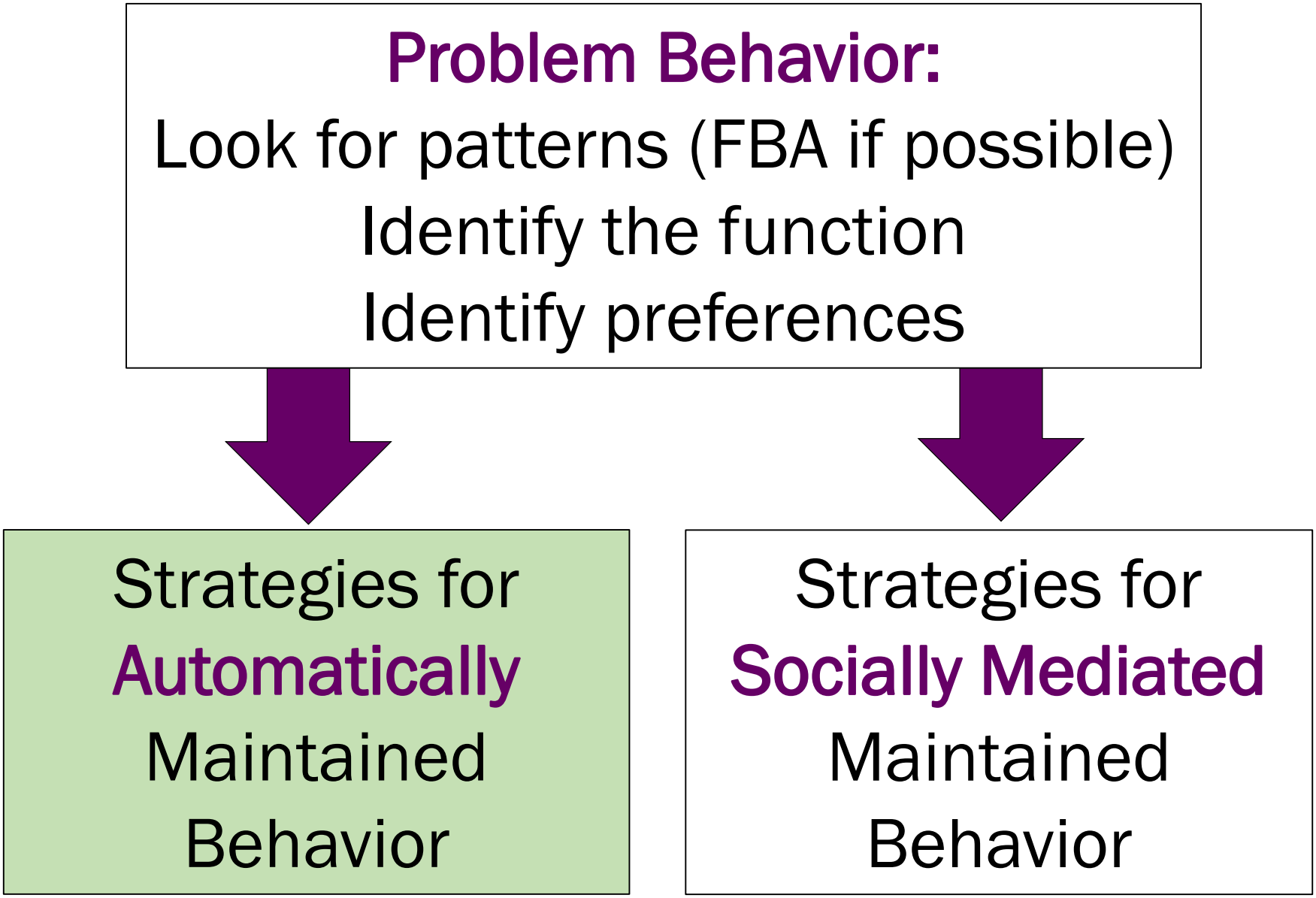
Look for patterns (FBA if possible)

Identify the function

Identify preferences

In general:

1. Eliminate/reduce reinforcement for engagement in the problem behavior
2. Teach and reinforce what to do instead


Problem Behavior:
Look for patterns (FBA if possible)
Identify the function
Identify preferences
Strategies for
Automatically
Maintained
Behavior
Strategies for
Socially Mediated
Maintained
Behavior

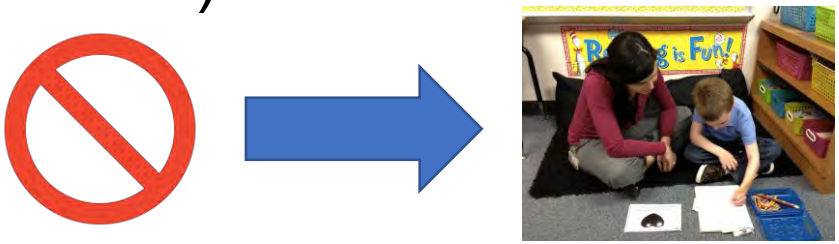
Addressing Automatic Behaviors

- Free Access
  - Provide specific time and place to engage in self-stimulatory behaviors (as long as not harmful)
- Sensory extinction
  - Block the sensory input of the behavior (self-scratching-arms are covered in thick lotion to block the tactile sensation), protective equipment
  - Be aware: at times this requires the problem behavior to occur before you respond

Addressing Automatic Behaviors

Response Interruption and Re-direction (RIRD)

- Step 1: Interrupt/block the behavior
- Step 2: Have the child engage in a different (neutral) task at their level



Be aware that at times RIRD can reinforce stereotypy as it is linked with adult attention

Addressing Automatic Behaviors

- Encouraging Incompatible Behavior
  - Prompt and reinforce a behavior that makes if physically impossible to engage in the inappropriate behavior
- Reinforcing Alternative Behavior
  - Teach and reinforce a replacement behavior that can provide similar input




Addressing Automatic Behaviors

- Response cost
  - The loss of ongoing activities contingent on the target behavior
  - This requires the problem behavior to occur before you respond

Problem Behavior:

Look for patterns (FBA if possible)

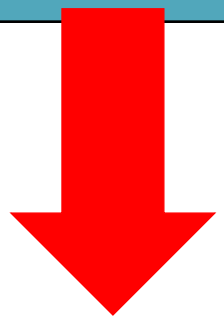
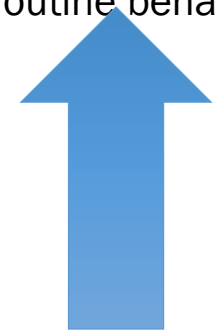
Identify the function

Identify preferences

Strategies for **Automatically** Maintained Behavior

Strategies for **Socially Mediated** Maintained Behavior

General Guidelines- Socially Mediated

Hypothesized Function	Antecedent Changes	Replacement Behaviors to Teach	Consequence Strategies
Obtain Attention	Schedule times for adult/peer attention Increase proximity of teacher	Teach appropriate way to get attention at their level Delayed reinforcement and waiting	 Reduce/eliminate reinforcement for inappropriate behavior Increase reinforcement for appropriate replacement behaviors and routine behaviors 
Obtain Tangible	With visuals: If, then statements Scheduled times with tangibles Waiting procedure	Asking for access Asking for more time Earning access (starting with low demands)	
Escape Task	Behavioral momentum Choices Schedule with preferred activities Shorten tasks/difficulty	Asking for break or help Increase tolerance for non-preferred tasks Increase executive functioning skills	
Escape Social	Schedule times for escape Provide warnings/cues Pleasant tone/calm Pair people with preferred things	Request space or break Request specific people Increase tolerance for interactions Effective social and problem solving skills	

DATA!

Why is it important?

- Allows us to:
  - Identify target behaviors
  - Identify baseline levels of behaviors/skills
  - Gain an objective information
  - Monitor the impact of a procedure
  - Determine that a procedure should be changed or ceased
  - Assess the generalization and maintenance of behavior change

Tracking Interventions

Progress Monitoring -Evidence Based Practices

Goal:					
Intervention(s) Used:	**Baseline:**	**Frequency:**	**Data Review:**	**Effectiveness: determined by progress towards goal achievement**	**Data-Based Decision:**
	Date Started: Data:	☐ ____ Times/Day ☐ ____ Times/Week ☐ ____ Times/Month	Date Reviewed: Data:	☐ Effective ☐ Somewhat Effective ☐ Not Effective	☐ Continue Intervention ☐ Increase Frequency /Intensity ☐ Add additional intervention ☐ Change intervention
	Date Started: Data:	☐ ____ Times/Day ☐ ____ Times/Week ☐ ____ Times/Month	Date Reviewed: Data:	☐ Effective ☐ Somewhat Effective ☐ Not Effective	☐ Continue Intervention ☐ Increase Frequency /Intensity ☐ Add additional intervention ☐ Change intervention

Graphing Template

PBIS World ©PBISWorld.com

Behavior/Intervention Tracker

Student Name: _____

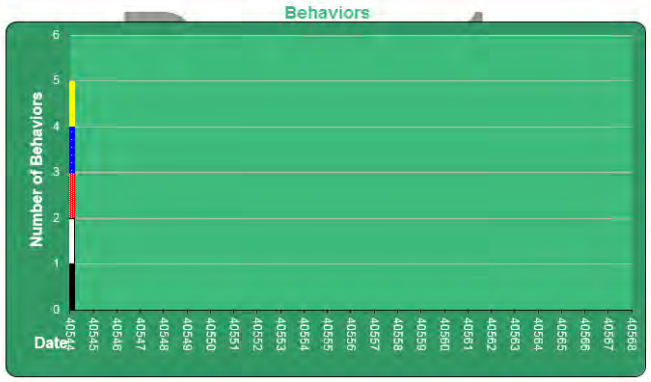
D.O.B. _____ School: _____

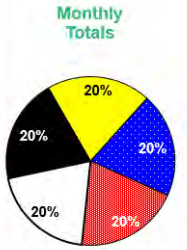
Teacher: _____

Data

Date	01/01/2011	01/02/2011	01/03/2011	01/04/2011	01/05/2011	01/06/2011	01/07/2011	01/08/2011	01/09/2011	01/10/2011	01/11/2011	01/12/2011	01/13/2011	01/14/2011
Behavior 1	1													
Behavior 2	1													
Behavior 3	1													
Behavior 4	1													
Behavior 5	1													
Intervention 1	1													
Intervention 2	1													
Intervention 3	1													
Intervention 4	1													
Intervention 5	1													

Graphs





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If Behavior is Persisting, Harmful and/or Impacting Quality of Life

- Contact a behavior analyst in your area (BCBA or BCaBA; www.bacb.org)
- Work with the student's DMH caseworker to identify possible supports and services in your area
- Use the free resources on the next page to get more information
- Contact us at the Thompson Center- we may be able to refer you to a service that we offer or one in your are

Resources

Autism Speaks

Challenging Behavior Toolkit

Iris Center Module: Functional Behavior Assessment

http://www.iris.peabody.Vanderbilt.edu/module/fba/#content

National Professional Development Center on ASD- Evidence Based Briefs and Modules

http://autismpdc.fpg.unc.edu

http://afirm.fpg.unc.edu/

Missouri Autism Guidelines Initiative (MAGI)

http://autismguidelines.dmh.mo.gov/

OCALI Autism Internet Modules

http://www.autisminternetmodules.org/

All materials can be downloaded here:

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