

# Autism Spectrum Disorder Challenging Behavior Functional Behavior Assessment

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June 13, 2013



Superheroes social skills training, Rethink Autism internet interventions, parent training, EBP classroom training, functional behavior assessment: An autism spectrum disorder, evidence based practice (EBP) training track for school psychologists

US Office of Education Personnel Preparation Grant H325K12306

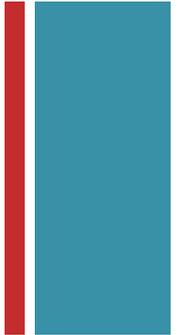
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Grant Director: Julia Hood

University of Utah - School Psychology



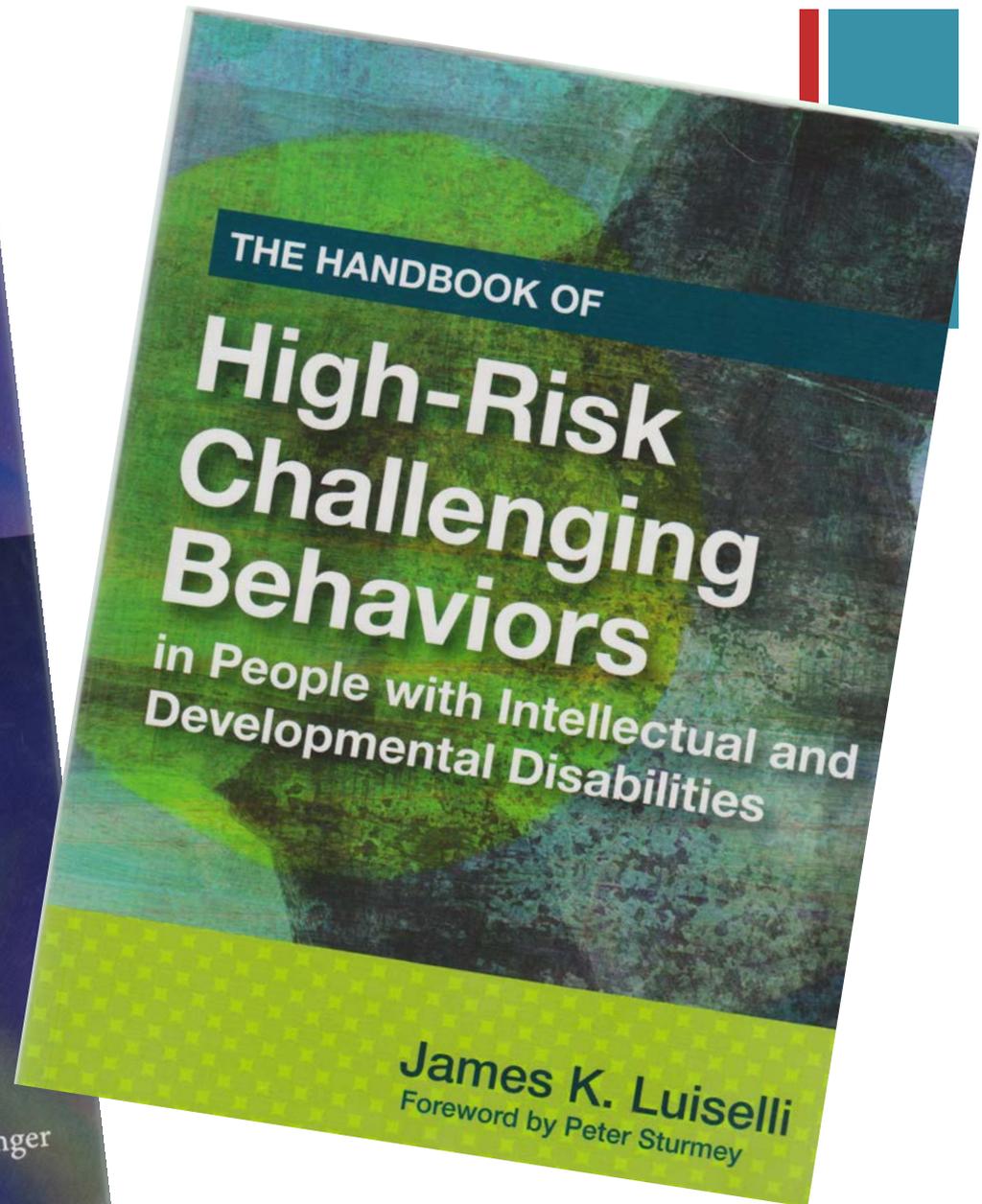
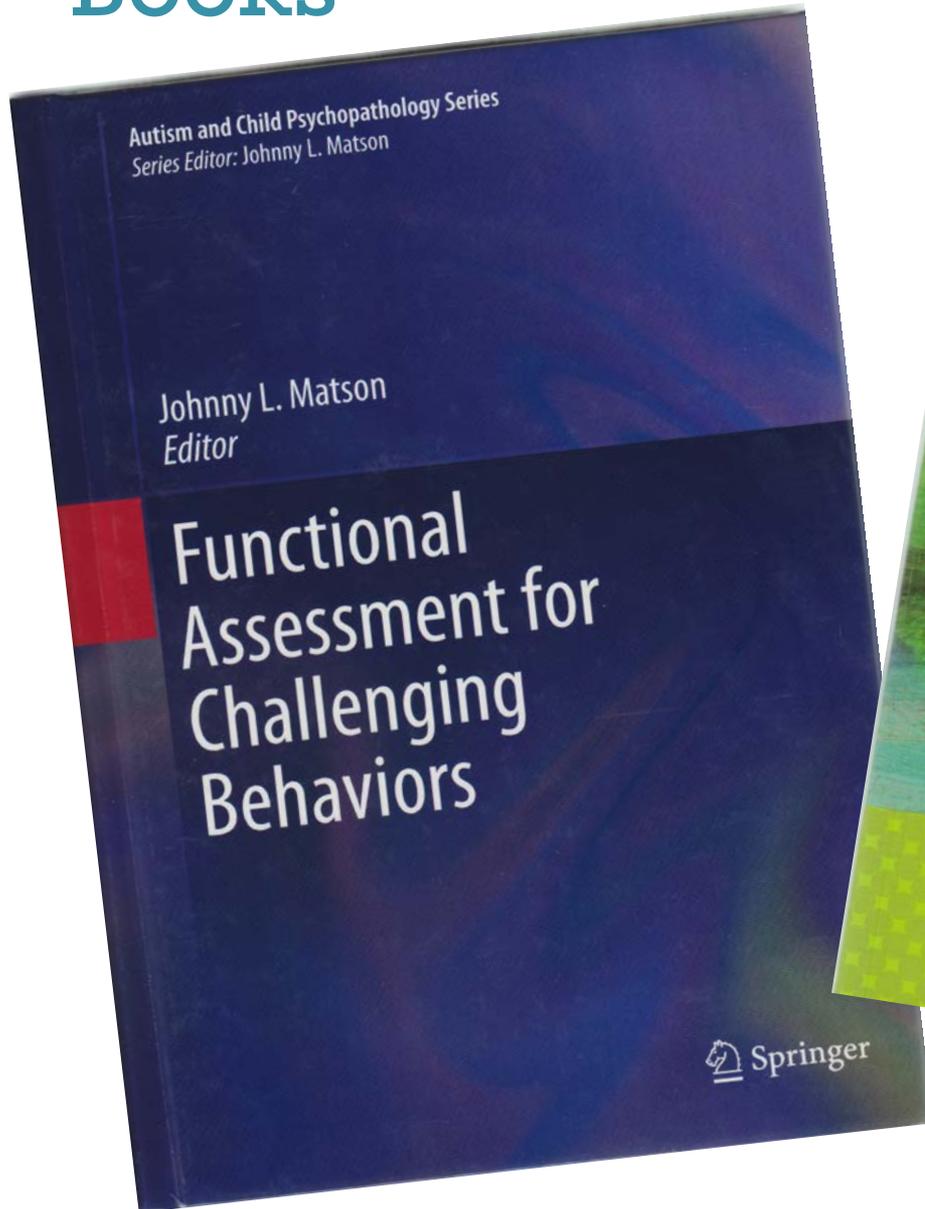
# Introduction



- Define challenging behaviors, types, and consequences
- Physical Restraint
- Treatment of Challenging Behaviors (2 FBA models)
  - Functional Behavior Assessment
  - Functional Analysis
- Influences and Functions of Challenging Behavior
- Ethical Issues/ Controversies
- Treatment of Self-Injurious Behaviors
- Interventions for Challenging Behavior
  - Functional Communication Training
  - Errorless Compliance Training
- Conclusion
- Quiz



# Books



# + Challenging Behaviors

“culturally abnormal behavior of such intensity, frequency or duration that the physical safety of the person or others is placed in serious jeopardy, or behavior which likely to seriously limit or deny access to the use of ordinary community facilities” Emerson (2005)

## ■ Definition:

- A) dangerous to self or others
- B) seriously interfere with the person's access to the typical community facilities.

## ■ Prevalence/Population

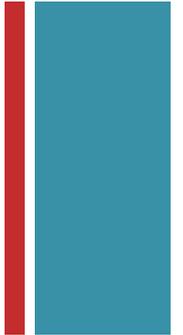
- General developmental disorders
- Autism
- Severe and profound intellectual disabilities
- Multiple disabilities

## ■ Types of Challenging Behaviors:

- Aggression
- Self-Injurious Behavior (SIB)
- Property Destruction
- Severe Noncompliance



# Challenging Behaviors



## Types of challenging behaviors

- Aggression
- Self-Injurious Behavior (SIB)
  - Head banging
  - Head hitting
  - Hair pulling
  - Eye poking
  - Face slapping
  - Biting
  - Pinching
  - Scratching
- Property Destruction
- Severe Noncompliance

## Possible outcomes

- Interfere with:
  - the development of optimal adaptive living skills
  - effective learning
  - prosocial interactions
- May lead to:
  - Reduced access to education
  - Limited social interactions with peers
  - Rejection by peers and caregivers
  - Increase in family stress
  - Health risks
  - Exclusion from settings
  - More restrictive environments
    - Seclusion
    - Placement in residential care facilities
  - Exposure to severe or unregulated management behaviors
    - Restraints: mechanical or human
    - Medication

# + Deaths in Facilities

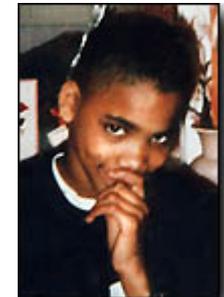
- <http://www.caica.org/restraints%20death%20list.htm>



Tibbets (CNN)



Travis Parker  
(courtesy WSB-TV)





**Case** **Stu**  
3 Male  
throu  
men  
autis

through the registry. Despite this listing, she is currently licensed in Virginia to instruct children with disabilities. In another example, the assistant principal who fatally restrained a child after holding him facedown on the floor for approximately an hour currently works as a principal at another public school in the same district. In addition, one of the teachers who strapped the 4-year-old child to a chair for allegedly being uncooperative still teaches at the school where the incident occurred, while the teacher who repeatedly restrained the frail 7 year old left her school but immediately began teaching in another district in the same state. Finally, the substitute teacher who taped children to their chairs and was found guilty of unlawful restraint and battery in July 2008 still holds a state substitute teaching certificate, which does not expire until June 2009.

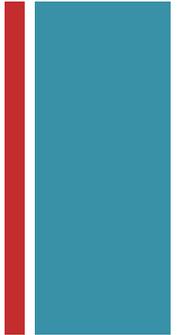
Table 1 provides a summary of the cases we examined; a more detailed narrative on each of the cases follows the table.

**Table 1: Summary of Case Studies**

	<b>Case</b>	<b>Student information</b>	<b>Location and type of institution</b>	<b>Year of incident(s)</b>	<b>Case details</b>
4	Male autis	1 Male, 14, had a history of disruptive behavior	Pennsylvania; private, nonprofit residential treatment center	1998	<ul style="list-style-type: none"> <li>Two staff members trained in the use of restraints pinned the student facedown on the floor for 20 minutes after he tried to attack a counselor.</li> <li>Student died from a brain injury as a result of a lack of oxygen.</li> <li>Death ruled an accident and no criminal charges were filed.</li> <li>Facility settled with student's mother for over \$1 million with no admission of liability.</li> <li>Pennsylvania banned prone restraints in 2008.</li> </ul>
5	Fem cere diag	2 Male, 14, diagnosed with post traumatic stress and other disorders	Texas; public school	2002	<ul style="list-style-type: none"> <li>230 lb. special education teacher placed 129 lb. student into a prone restraint and lay on top of him because he would not stay seated.</li> <li>Student died as a result of compression of the trunk.</li> <li>Death ruled a homicide, but no criminal charges filed.</li> <li>Teacher currently teaches in Virginia and is licensed to instruct children with disabilities.</li> </ul>



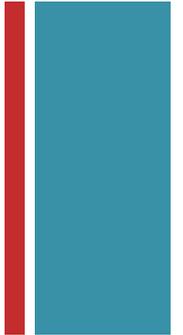
# Physical Restraint in Schools



- Increasing number of violent incidents that take place within schools each year.
- Physical restraint occurs when one or more staff members use their bodies to restrict an individual's movement as a means for reestablishing behavioral control and establishing and maintaining safety for the individual, other students, and staff (Ryan, Robbins, Peterson, & Rozalski, 2009).
- Restraint procedures becoming increasingly common within public schools.
- Physical restraint procedures may now be used more broadly with all students who display aggressive behaviors in school, whether or not they have a disability.
- Restraints may be implemented as many as 165,000 times each year on students across the nation
  - Restraint Procedures:
    - Pose a risk of injury and death for both students and staff
    - Are frequently used inappropriately by staff
    - Continue to be used despite being ineffective in reducing aggressive behavior
    - Are often used without adequate oversight, training, or proper implementation



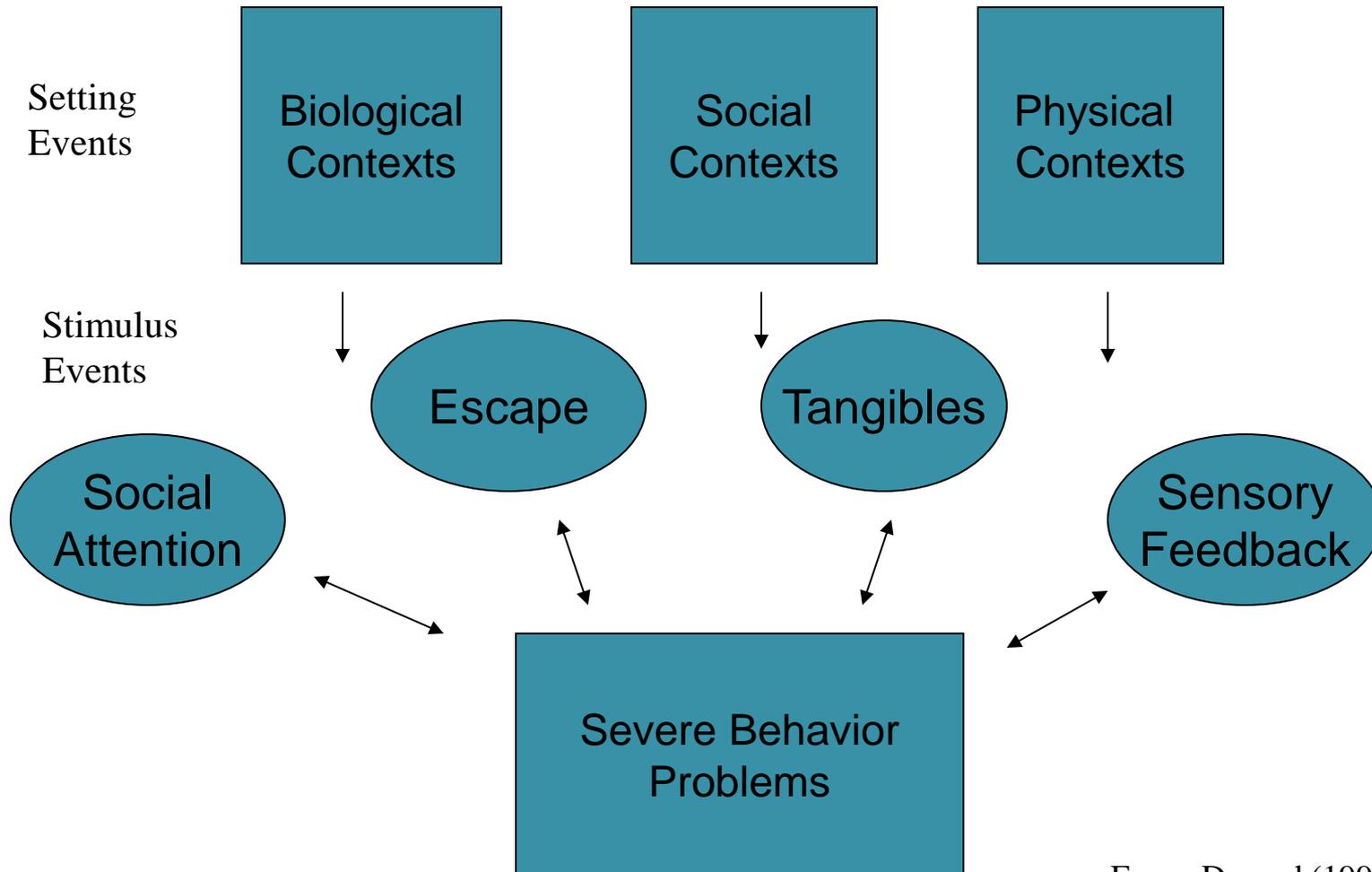
# Treatment of Challenging Behaviors



- Challenging behavior not a symptom of “underlying” psychopathology, but is developed as a response that has acquired one or more behavior functions for the person.
- Effective behavioral intervention requires the identification of functional properties of the challenging behavior.
  - Functional Behavior Assessment
- Attempts to intervene and reduce the behavior should rely on:
  - An understanding of the possible functions
  - Intervention strategies that are matched to those functions

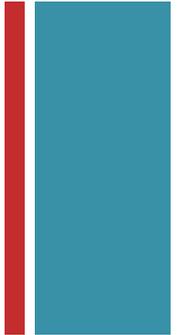


# Influences on Severe Behavior Problems



From: Durand (1990)

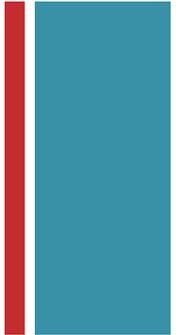
# + 2 FBA models



- Motivational Assessment Scale (MAS) – Durand
- Functional Analysis – Iwata/Dorsey 1994



# Functional Behavior Assessment



- FBA refers to a range of methods designed to identify the environmental variables that control problematic behaviors.
  
- Methods
  - Indirect
    - Interviews
    - Questionnaires
  - Descriptive/Direct
    - Narrative recording of the antecedents and consequences

Date	Time	Antecedent (What Happened Before)	Behavior (Briefly Describe)	Consequence (What You Did)	Child's Response To Consequences

Antecedent: An antecedent is anything that happens immediately before the behavior, including who what where and any requests (to do something or stop doing something) that were made.

Behavior: A clear description of what the behavior looked like, and how long it lasted.

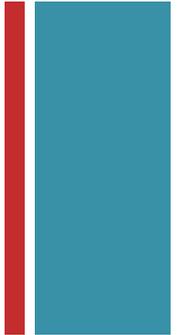
Consequence: What did you do immediately following the behavior? What did you say ?

Child's Response: How did the child react to the consequences? What did he/she do?

Date — > Time	Monday	Tuesday	Wed	Thursday	Friday	Saturday	Sunday
06:00 AM							
06:30 AM							
07:00 AM							
07:30 AM							
08:00 AM							
08:30 AM							
09:00 AM							
09:30 AM							
10:00 AM							
10:30 AM							
11:00 AM							
11:30 AM							



# Motivational Assessment Scale (MAS)



- Indirect assessment tool
- Assesses the functions or motivations of behavior problems
- 4 main motivators of behavior:
  - Social Attention
  - Tangibles
  - Escape
  - Sensory Input
- 16 questions

# Motivation Assessment Scale

1986 V. Mark Durand, Ph.D.

Questions	Answers
1. Would the behavior occur continuously, over and over, if this person were left alone for long periods of time? (For example, several hours)	0 1 2 3 4 5 6
2. Does the behavior occur following a request to perform a difficult task?	0 1 2 3 4 5 6

Name Morg

Date Sept

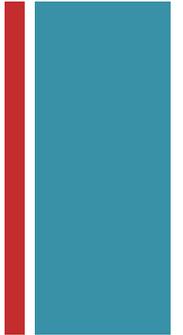
	Sensory	Escape	Attention	Tangible	
Behavior Descri	1. 0	2. 3	3. 4	4. 3	4 5 6
<u>Morgan yells</u>	5. 1	6. 4	7. 5	8. 3	4 5 6
	9. 0	10. 4	11. 6	12. 2	4 5 6
Setting Descript	13. 1	14. 2	15. 5	16. 4	4 5 6
<u>child care c</u>					4 5 6
Total Score =	3	13	20	11	4 5 6
Mean Score = (divide the total score by 4)	0.5	3.25	5.0	2.75	4 5 6
Relative Ranking (high score to low score)	4	2	1	3	4 5 6

If there is a tie for the highest score or if the means of the top two categories are within **.25 to .50** points (and you have clearly specified the behaviour and setting), then both are considered as influences that may be causing the problem behaviour to continue.

0=Never



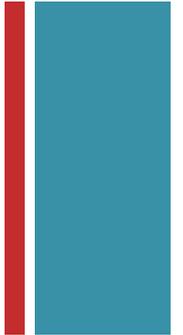
# Functional Behavior Analysis



- “Gold Standard” of FBA is experimental functional analysis (FA)
- Systematically arranges consequences for problem behaviors to identify their functions
- Functional analysis is a process for determining which reinforcers maintain a behavior, and the stimulus conditions and setting events that set the occasion for that behavior. Three strategies are used to gather information:
  - interviews
  - direct observation
  - manipulation of variables



# What Do We Intend to Discover with Functional Analysis?

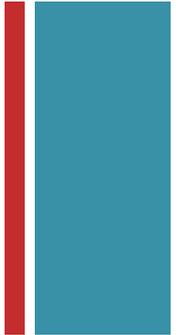


- What antecedent(s) is motivating the behavior?
- What consequence is maintaining the behavior?
- Functionally equivalent behavior
  - Can the student be taught an alternative, appropriate behavior to accomplish the same function as the inappropriate behavior?
- Focus on observable behavior and events
  - Identify patterns that will allow us to develop successful behavior change programs.



# Iwata 1994: Functional Analysis

Toward a Functional Analysis of Self-Injurious Behavior (1982)



- 4 experimental conditions: academic, alone, social disapproval, and play.
  - Social disapproval (attention condition)
  - Academic demand (escape condition)
  - Alone (automatic reinforcement)
  - Play (control)

# Functional Analysis: Condition Descriptions

Condition	Description	Contingencies
Free Play (Control)	No task demands. Intermittent attention as child plays with preferred toys	No programmed consequences
Attention	Child is told to play alone. Adult present in session room	Attention contingent on problem behavior. No programmed consequences for appropriate behavior
Tangible	Intermittent adult attention. Preferred item visible but out of reach. No task demands	Preferred item delivered contingent on problem behavior. Item is removed following a set period of appropriate behavior
Escape	Difficult task presented	Task removed contingent on problem behavior
Alone/Ignore	Child is left alone without toys/materials. Adult is either in the room or just outside.	No programmed consequences for any behavior

# + Forms and Functions of Problem Behavior

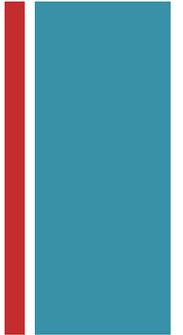
Hanley, G.P., Iwata, B.A., McCord, B.E. (2003)

<b>Topography</b>	<b>Escape</b>	<b>Attention</b>	<b>Tangible</b>	<b>Automatic</b>	<b>Multiple</b>
SIB	65	59	28	55	15
Aggression	24	9	6	1	10
Property Destruction	0	0	2	0	0
Pica	0	1	0	3	2
Disruption	11	3	1	1	0
Vocalizations	6	3	1	0	4
Noncompliance	1	2	1	0	4
Elopement	0	0	0	0	3
Stereotypy	6	0	0	19	5
Tantrums	2	1	1	0	2
Other	4	5	0	1	3
Aberrant	57	47	12	1	27
Total Number	175	130	52	81	75
Percentage	34.2	25.3	10.1	15.8	14.6

# + Functional Analysis

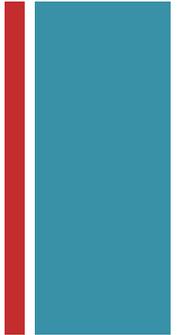
## ■ Advantages and Disadvantages

- Time consuming
- Reinforcement of potentially dangerous problem behavior
- Training demands
- Experimentally confirms/disconfirms hypothesis
- Demonstrates functional relationships
- Controlled setting conducive to treatment analysis





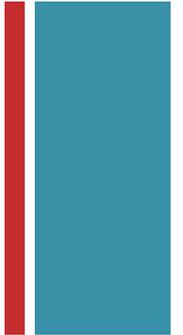
# Ethical Issues



- Use of aversives/Non-use of aversives
- Need to change these behaviors quickly before physical damage is done
  - Treatment should be both appropriate and timely
  - FBA treatment is not designed and implemented until assessment is finished.
  - Functional Analysis in the case of serious self-injury?
- Ethical issue of insuring the clients rights and dignity

# + Controversies

- Does an intervention have to meet the function of the challenging behavior as long as it stops?
- Do you need to do an FBA/analysis or not? Effect sizes
  - Most investigations within this limited literature suggest that function-based interventions produce better treatment outcomes, but the findings are not universally positive.
  - FBAs can play an invaluable role in developing effective treatments for reducing undesired behavior in school settings, but an FBA is not always needed.
  - Good interventions are those which produce desired and lasting effects, regardless of how the interventions are selected or their modality
  - “Given the extant literature, in our opinion the widespread use of FBA is easily justified on both ethical and practical grounds, but it is inappropriate to elevate its use to an ethical imperative.”
- FBA Training for school personnel



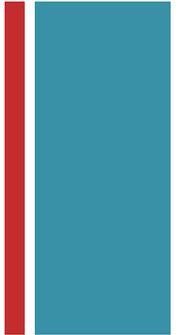
EFFECTIVENESS OF INTERVENTIONS TARGETING SELF-INJURY IN  
CHILDREN AND ADOLESCENTS WITH DEVELOPMENTAL  
DISABILITIES: A META-ANALYSIS

ELIZABETH A. CHRISTIANSEN

Table 9. Effect Sizes by Variable

Moderator Variable	<i>N</i>	Mean Effect Size
<b>Diagnosis/Classification</b>		
DD/ID/MR	152	-3.62*
Autism Spectrum (with or without ID/MR)	47	-2.40
Genetic Disorders/Syndromes	25	-3.51
<b>Gender</b>		
Male	128	-3.16
Female	96	-3.59
<b>SIB Type</b>		
Head Banging	47	-2.22
Self-Hitting/Slapping	23	-2.79
Self-Biting	33	-3.41
Hand-Mouthing	14	-3.82
Multiple	86	-3.42
Other	21	-4.55*
<b>Language</b>		
Verbal	14	-3.15
Nonverbal	77	-3.50
Not Indicated	133	-3.22
<b>Sensory Impairment</b>		
Visually Impaired/Blind	31	-4.33*
Hearing Impaired/Deaf	8	-4.37
Combination	21	-3.39
Not Indicated	164	-3.11
<b>Ambulation</b>		
Ambulatory	9	-3.99
Nonambulatory	38	-3.79
Not Indicated	177	-3.22
<b>Pretreatment Functional Assessment</b>		
Functional Behavior Assessment	14	-4.05
Functional Analysis	77	-3.31
None/Not Indicated	133	-3.30
<b>Treatment Type</b>		
Nonaversive	58	-2.33
Aversive	94	-3.67**
Communication	11	-3.32
Sensory Stimulation	7	-.89
Combination: Nonaversive & Aversive	46	-4.19***
Combination: Aversive & Communication	8	-2.91
<b>Implementer</b>		
Professional	175	-3.32
Teacher	24	-3.14
Parent	9	-3.78
Combined	10	-3.48
Other	3	-3.18
Not Identified	3	-5.47

# + Controversies Conclusion

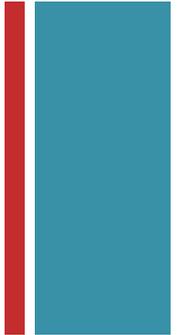


- Large ES either way with or without FBA
- Large effect size for adversives
- You decide

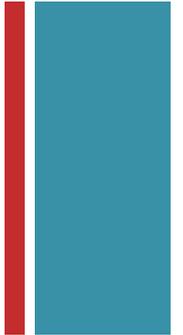


# Treatment of SIB

- Behavioral Techniques + Psychotropic medication
- Nonaversive interventions
  - Reinforcement procedures (DRI, DRO, DRL, DRH, DRA)
  - Communication training (FCT)
- Antecedent strategies
  - Focus on the situations that trigger the self-injurious behaviors rather than the behaviors themselves.
  - Vibratory stimulus
  - Functional Communication Training
- Aversive procedures
  - Extinction
  - Response Cost
  - Time Out
  - Visual Screening
  - Overcorrection
    - Functional Movement Training
  - Guided Compliance/physical guidance
  - Physical restrains
  - Water Mist
  - Aromatics
    - Use of noxious odors
  - Taste Aversion
  - Shock/Electrical Stimulation
  - Avoidance conditioning



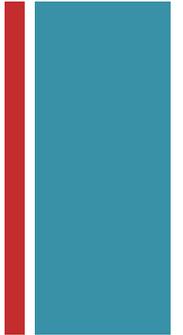
# + 2 Treatment Approaches



- Functional Communication Training (FCT)
  - Self-Injurious Behavior
- Errorless Compliance Training
  - Severe Noncompliance and Aggression



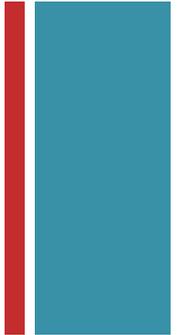
# FUNCTIONAL COMMUNICATION TRAINING



- Self-Injurious behavior exhibited by students with developmental disabilities is sometimes viewed as a form of communication.
- The Purpose of Functional Communication Training (FCT) is to teach individuals communication behaviors as a replacement for maladaptive behavior.
- FCT skills can be effective in reducing SIB, are well maintained over time, and generalizes well to other contexts.

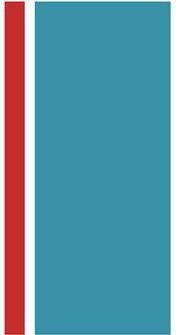
# + FCT Steps + Example

- Step 1: Identify the function/purpose of the behavior
  - Functional Behavior Assessment
  
- Step 2: Determine a more desirable/acceptable form of communication for the child to use instead
  - Replacement behavior:
    - 1) child is capable of doing
    - 2) taught very easily
    - 3) easily noticed and acknowledge whenever the child uses it
    - 4) works quickly for the child
  
- Step 3: Ignore the challenging behavior, prompt and acknowledge the use of replacement behavior
  - Take advantage of natural opportunities to encourage and acknowledge the replacement behavior.
  - Make certain that all of the child's new communicative requests are honored, especially early on.
  - Be persistent with the intervention.





# Errorless Compliance Training



- Used to ameliorate a wide range of oppositional and maladaptive behaviors.
- Particularly effective among children between the ages of 3 and 8 years; however, it can be used with older children.
- ECT is an intervention that utilizes stimulus fading techniques to obtain child compliance with parental or teacher requests.
- Tasks that are relatively easy for a child to perform and generally yield high levels of cooperation are initially presented and reinforced.
- More difficult conditions are gradually introduced to minimize errors, until student responds to the difficult task with the same high rate of correct responses as to the simple tasks.

## Compliance Probability Check

Child's Name: \_\_\_\_\_ Date: \_\_\_\_\_ Com

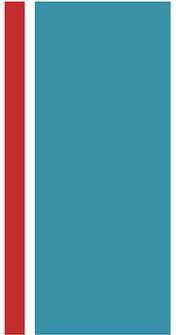
Listed below are a series of requests you may present to a child  
likelihood that the child will comply to this request if the request is made.  
check the appropriate box beside each request.

	Almost Always 76-100%	Usually 51-75%	Occasionally 26-50%	Rarely 0-25%	Ski Lea
<b>DRESSING</b>					
Take off your _____					
Hang up your _____					
Get your _____					
Other:					
<b>HYGIENE</b>					
Wash your Hands					
Turn on the tap					
Turn off the Tap					
Flush the toilet					
Use the soap					
Dry your hands					
Other:					
<b>SNACK</b>					
Come to the table					
Sit in your chair					
Pass the _____					

	Almost Always 76-100%	Usually 51-75%	Occasionally 26-50%	Rarely 0-25%	Skill Not Learned	This Request is important to me	Group/ Ind.
Eat your _____							
Drink your _____							
Wipe your _____							
Other:							
PLAY							
Go get the _____							
Play with the _____							
Colour the _____							
Pick a toy/Activity							
Clean up the _____							
Come here							
Come for _____							
Sit down for _____							
Put the toy / activity away							
Put toy/activity in the _____							
Other:							
GENERAL							
Come here							
Sit down							
Stand up							
Stand in Line							
Line up for _____							
Bring me _____							
Get your _____							
Other:							

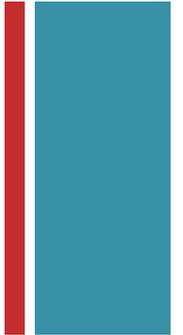
# + ECT Steps + Example

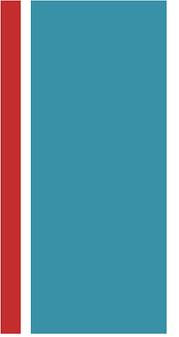
- Step 1: Complete Questionnaire and observational analysis to determine probability of compliance
- Step 2: Select 6-8 requests from each probability level
- Step 3: Train teacher/parent to give effective requests
- Step 4: Baseline
- Step 5: Calculate probability based upon baseline data  
$$\frac{\text{Total number of compliant responses}}{\text{total number of requests}}$$
- Step 6: Divide requests into 4 levels, 5 requests selected per level.
- Step 7: Deliver Level 1 requests 3 times/day. Transition to next level after 3 consecutive session which cooperation approximates or exceeds 75%
- Step 8: During transition, provide requests from both levels. Avoid requests from subsequent levels.



# + Conclusion

- There are many adverse consequences of challenging behaviors.
- Physical Restraint
- Treatment of challenging behaviors:
  - FBA/FA
    - Are they necessary? Effective?
    - Speed and efficacy of stopping the behavior
    - Good interventions are those which produce desired and lasting effects, regardless of how the interventions are selected or their modality (Poling, 1994; Poling, Ehrhardt, Wood, & Bowerman, 2010).
  - Aversive/ non-aversive procedures
    - Effect sizes
- Interventions for Challenging Behavior
  - Functional Communication Training
  - Errorless Compliance Training





# Questions