Is It Sensory or Is It Behavior?

Carolyn Murray-Slutsky, MS OTR, C/NDT, FAOTA
Betty Paris, PT, M.Ed., C/NDT

Pertinent Prevalences

National Institute of Mental Health, states that emotional and behavioral disorders affect 10 to 15% of children globally.

Sensory Processing Disorder (SPD) is a complex disorder of the brain that affects developing children and adults.

At least 1 in 20 people in the general population may be affected by SPD.

Pertinent Prevalences

1 in 44 children were diagnosed with an ASD, by 8 years of age, in USA (CDC, 2021).

85-95% of children with Autism Spectrum Disorders (ASD) have sensory differences.

Overview
Behaviors are Complex-

- Individuals (children and adults) are dynamic.
- There are always multiple factors that contribute to why an individual behaves the way they do.
- We must look at behavioral problems from a non-linear viewpoint.

Overview
Behaviors are Complex-

- Problem behaviors are used to obtain or avoid something.
  - It may serve a sensory need: to obtain or avoid.
  - It may serve a behavioral need to communicate they want to obtain or avoid.

Overview
Behaviors are Complex-

- Behaviors may serve multiple purposes and may function to obtain something while simultaneously avoiding something else.
- Do not stop when you find one thing: look for all functions.

Carolyn Murray-Slutsky, MS OTR, C/ NDT, FAOTA
Betty Paris, PT, M.Ed., C/ NDT

(954) 224-9050

Overview
Behaviors are Complex-

- Individuals with decreased communication skills are at risk of using behaviors to communicate their needs or want.
- Under stress and anxiety an individual's ability to communicate is believed to decreases by at least 10%.
- Sensory based behaviors are often used to communicate what an individual wants to obtain or avoid, especially if they have decreased communication.

The Child Is Trying To

OBTAIN
- Sensory
- Communication

OR

AVOID
- Sensory
- Communication

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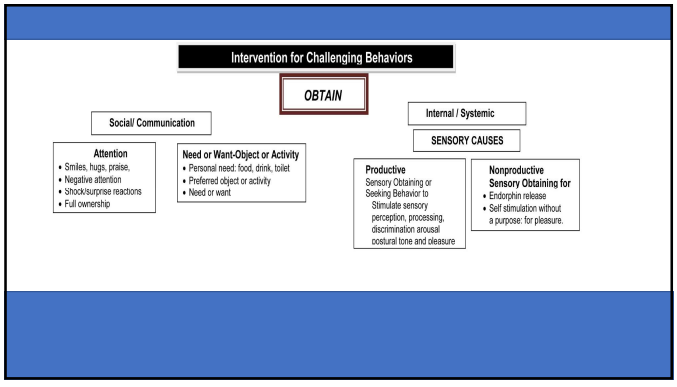

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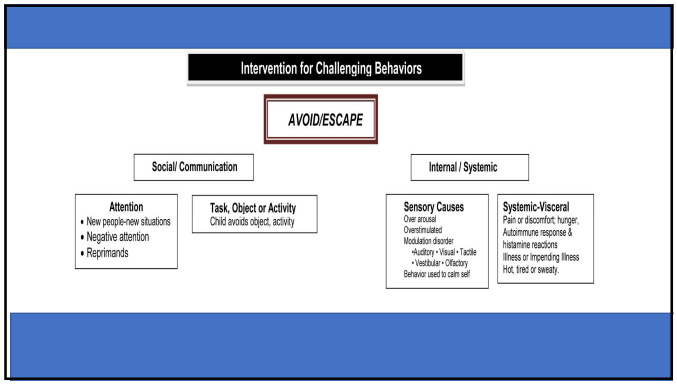
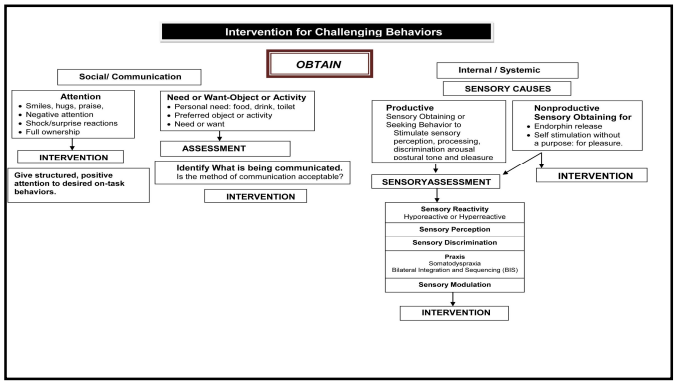
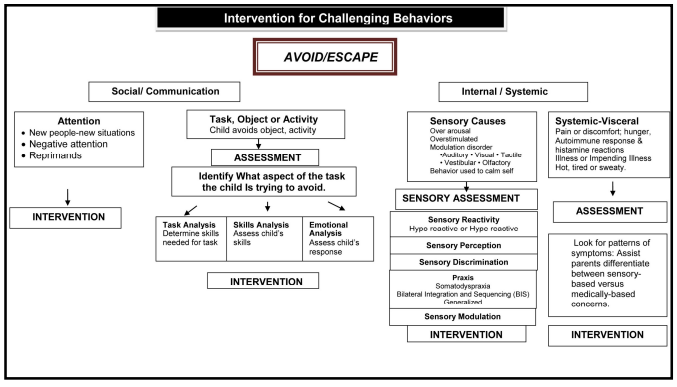

Intervention for Challenging Behaviors
AVOID/ESCAPE
Social/ Communication
Internal / Systemic
Attention
• New people-new situations
• Negative attention
• Reprimands
Task, Object or Activity
Child avoids object, activity
Sensory Causes
Over arousal
Overstimulated
Modulation disorder
•Auditory • Visual • Tactile
• Vestibular • Olfactory
Behavior used to calm self
Systemic-Visceral
Pain or discomfort: hunger,
Autoimmune response &
histamine reactions
Illness or Impending Illness
Hot, tired or sweaty.


Intervention for Challenging Behaviors
OBTAIN
Social/ Communication
Attention
• Smiles, hugs, praise,
• Negative attention
• Shock/surprise reactions
• Full ownership
INTERVENTION
Give structured, positive attention to desired on-task behaviors.
Need or Want-Object or Activity
• Personal need: food, drink, toilet
• Preferred object or activity
• Need or want
ASSESSMENT
Identify What is being communicated.
Is the method of communication acceptable?
INTERVENTION
Internal / Systemic
SENSORY CAUSES
Productive
Sensory Obtaining or Seeking Behavior to Stimulate sensory perception, processing, discrimination arousal postural tone and pleasure
Nonproductive Sensory Obtaining for
• Endorphin release
• Self stimulation without a purpose: for pleasure.
INTERVENTION
SENSORYASSESSMENT
Sensory Reactivity
Hyporeactive or Hyperreactive
Sensory Perception
Sensory Discrimination
Praxis
Somatodyspraxia
Bilateral Integration and Sequencing (BIS)
Sensory Modulation
INTERVENTION


Intervention for Challenging Behaviors
AVOID/ESCAPE
Social/ Communication
Attention
• New people-new situations
• Negative attention
• Reprimands
INTERVENTION
Task, Object or Activity
Child avoids object, activity
ASSESSMENT
Identify What aspect of the task the child Is trying to avoid.
Task Analysis
Determine skills needed for task
Skills Analysis
Assess child's skills
Emotional Analysis
Assess child's response
INTERVENTION
Internal / Systemic
Sensory Causes
Over arousal
Overstimulated
Modulation disorder
•Auditory • Visual • Tactile
• Vestibular • Olfactory
Behavior used to calm self
SENSORY ASSESSMENT
Sensory Reactivity
Hypo reactive or Hyper reactive
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INTERVENTION
Systemic-Visceral
Pain or discomfort: hunger,
Autoimmune response &
histamine reactions
Illness or Impending Illness
Hot, tired or sweaty.
ASSESSMENT
Look for patterns of symptoms: Assist parents differentiate between sensory-based versus medically-based concerns.
INTERVENTION

Ability vs. Willingness

- **Skills Deficits**
  - Can't do
  - For whatever reason, the learner cannot engage in the desired behavior
- **Performance Deficits**
  - Won't do
  - The learner knows how to engage in the desired behavior but is unmotivated to do so at that given time

Ability vs. Willingness

- **Skills Deficits**
  - Can't do
  - For whatever reason, the learner cannot engage in the desired behavior
- **Sensory Deficits**
  - Can't do
  - For sensory reasons the learner cannot engage in the behavior
- **Performance Deficits**
  - Won't do
  - The learner knows how to engage in the desired behavior but is unmotivated to do so at that given time

Occupational and Physical Therapy Assessments

- **Sensory Assessment**
  - Sensory Responsivity
  - Sensory Perception
  - Sensory Discrimination
  - Sensory Based Postural Control
  - Sensory Based Motor Planning - Dyspraxias
- **Motor Assessment**
  - Fine Motor
  - Gross Motor
  - Motor Control
- **Communication and Function**

- **Task Analysis-** Assess the task demands, sensory components of the task and skills needed.
- **Skill Analysis-** Does the individual possess the needed skills? What are the underlying sensory issues?
- **Emotional Analysis-** Is the individual reacting emotionally to an aspect of the task or environment?
- **Environmental Analysis:**
  - Where is he asked to perform?(desk height, chair height,…)
  - Noise levels; lighting; tools….
  - Task presentation, amount of work…

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Behavior Assessment

Functional Behavioral Assessment

A-B-C Model

A – Antecedents - events that occur before behaviors and that may cue or set the stage for certain behaviors

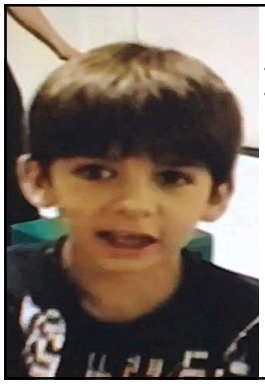
B – Behavior - behavior of concern
- What does it look like?
- When does the behavior occur?
- How frequently?
- How long does it persist?

C – Consequence - events that follow a behavior that determine whether the behavior will be repeated or not.

Intervention: Three primary components

- **Prevention**:
  - Anticipate and predict the behavior and
  - Establish preventatives
    - Adapt the environment and tasks
    - Meet the sensory needs at the frequency, intensity and duration the child requires.
- **Skill Development:**
  - Modify teaching strategies
  - Teach replacement behaviors
  - Address the underlying sensory and motor issues through environmental and task modifications
- **Response** i.e. consequence (+/-) strategies

Preventatives ⟷ Skill Development ⟷ Reinforcers/ Consequence



Case Study – Johnny 7 yrs.

- In a second-grade class of 27 typical children
- Behaviors of concern:
  - Tantrums when presented with written assignments; refusals to do work
    - Would crumple his paper and throw it to the floor, voicing very loudly that he refused to do the assignment.
    - Described as cranky, irritable, nonflexible, uncooperative and controlling.
    - Teacher reported that he didn't like being helped with his work.
    - Didn't respond to the system of tokens and rewards that the rest of the class responded to.
    - Referred for Behavioral, OT, and PT assessments with the question, "Is It Sensory or Is It Behavior?"

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Behavior: Tantrums when presented with written assignments; refusals to do work: sharp verbal responses

Question: Is It Sensory or Is It Behavior?

The data from all the assessments is presented to the team for discussion about the function of the behavior and plan of action.

- Determine whether the behavior is to Obtain or Avoid?
- Determine what replacement behavior(s) will look like.
- Determine what preventatives/ antecedents will be used.
- Determine what skills need to be developed.
- Determine what consequences will be used.
- Establish a plan of action.

Results of Johnny's Assessments

Sensory Motor Assessments: Sensory Profile, Sensory Processing Measure, Parts of the Sensory Integration and Praxis Test, Clinical Observations of Sensory Integration, Bruininks Oseretsky Test of Motor Proficiency.

- **Sensory Over reactivity with Defensive** responses to tactile stimuli (Sensory avoiding behaviors)
- **Sensory Modulation**
- **Sensory Discrimination** (tactile, proprioceptive & vestibular) difficulties contributing to motor planning issues.
- **Sensory-based Motor Dyspraxia**/ Motor Planning issues
  - Somatodyspraxia
  - Difficulty planning and organizing a task.
  - Difficulty executing the task resulting in his frustration and contributing to his behavior.

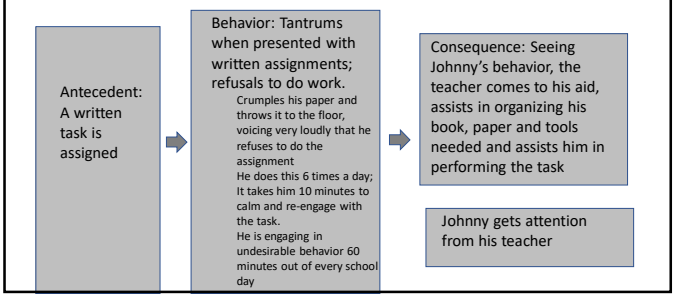
Sensory Impact on Communication, Function and Participation

Sensory Modulation and defensiveness and contributes to
- Distractibility,
- Stress and anxiety, low frustration tolerance quickly overwhelmed
- Behavioral dysregulation: Makes him cranky
- Medical and physical symptoms: head/ stomachache, nausea and vomiting

Sensory Based Discrimination and Motor Planning: Contributes to Difficulty
- Grading the pressure when he writes & holds the pencil
- Learning new tasks,
- Participating in sports and physical activities
- Planning how to do a new activity

Communication Difficulties caused by anxiety and sensory over responsivity are contributing to his communication issues of:
- Poor processing of instructions, low frustration tolerance
- Impulsive, sharp, negative responses to touch or intervention

Behavioral Assessment Results/Hypothesis:
Johnny often gets angry (as evidenced by loud outbursts, clenched fists, crumpling and throwing papers on the floor) when he has trouble with written schoolwork, he finds difficult



Where do we go from here? A holistic approach.

Behavior:

Johnny often gets angry (as evidenced by loud outbursts, clenched fists, crumpling and throwing papers on the floor) when he has trouble with written schoolwork, he finds difficult.

Sensory:

Johnny is an over responsive child, who has motor planning difficulties, who gets overstimulated by sensory, environmental and task demands, which contributes to his quick frustration & angry outbursts.

Function:

To obtain something? To avoid something?

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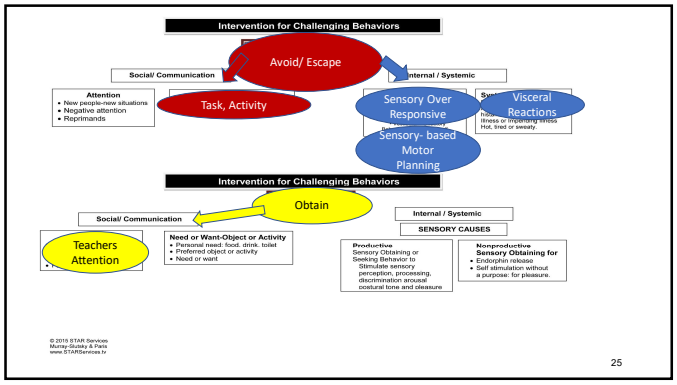


Where do we go from here? A holistic approach

Function:

To avoid the task due to sensory over-responsivity and motor planning difficulties. To obtain assistance from the teacher.

Maintaining reinforcer:

A maintaining reinforcer is a consequence, something that occurs after the behavior, that influences whether the behavior will occur again in the future.

Where do we go from here? A holistic approach

Function:

To avoid the task due to sensory over-responsivity and motor planning difficulties. To obtain assistance from the teacher.

Maintaining reinforcer:

Seeing Johnny's frustration, his teacher comes over and provides assistance when he gets angry. Task avoidance, if allowed, will also reinforce the behavior.

Where do we go from here? A holistic approach

Function:

To avoid the task due to sensory over-responsivity, motor planning difficulties and learned responses. To obtain assistance from the teacher.

Maintaining reinforcer:

Seeing Johnny's frustration, his teacher comes over and provides assistance when he gets angry. Task avoidance, if allowed, will also reinforce the behavior.

Replacement Behavior:

A replacement behavior answers the question "What do you want the child to do instead of the behavior?"

Replacement Behaviors

- A replacement behavior answers the question "What do you want the child to do instead of the behavior?"
- What is a more acceptable substitute for the behavior? Do we need to teach the individual coping strategies, how to respond to everyday activities and challenges or how to meet their individual sensory needs?
- Substituting more acceptable replacement behaviors is often needed when social/communication, skill deficits or sensory needs result in behavioral problems.
- Behaviors that meet a sensory need may be altered, substituting a more acceptable replacement behavior for the one the child currently engages in.

Replacement Behaviors

- Unless a child has a new, more appropriate way to bring about a desired environmental change or meet a sensory need, he will continue to bring it about in the way that has been successful in the past (Alberto & Troutman, 2017).
- Many challenging behaviors occur because the individual has not learned to meet his needs in a more appropriate manner.
- Teaching appropriate replacement behaviors, that serve the same function as the unwanted behavior, can promote the desired behavior while decreasing the challenging behavior.

What replacement behaviors do we want for Johnny?

- We need replacement behaviors to address the following:
  - 1. Sensory:
    - Modulation,
    - Motor planning,
    - Sensory over-reactivity
  - 2. Communication:
    - How to ask for help.
- What replacement behaviors do you recommend to address the behaviors and underlying problems ?
  - His loud outbursts, clenched fists, crumpling and throwing papers on the floor) when he has trouble with written schoolwork, he finds difficult.
  - He is overstimulated by environment and the task (too complex or too overwhelming).
  - Motor planning difficulties- Tasks may be too hard for him.

Where do we go from here? A holistic approach

Function:

To avoid the task due to sensory over-responsivity and motor planning difficulties. To obtain assistance from the teacher.

Maintaining reinforcer:

Seeing Johnny's frustration, his teacher comes over and provides assistance when he gets angry. Task avoidance, If allowed, will also reinforce the behavior.

Replacement Behaviors:

Johnny will perform resistive sensory-motor activities to regulate his sensory systems prior to being presented with a written task.

He will learn to identify warning signs of increased frustration and request assistance.

Modifications: What modifications are needed to help Johnny function?

Behavior: Johnny often gets angry (as evidenced by loud outbursts, clenched fists, crumpling and throwing papers on the floor) when he has trouble with written schoolwork, he finds difficult.

Sensory: Johnny is an over responsive child, who has motor planning difficulties, who gets overstimulated by sensory, environmental and task demands, which contributes to his quick frustration & angry outbursts.

Function: To avoid the task due to sensory over-responsivity and motor planning difficulties. To obtain assistance from the teacher.

Maintaining reinforcer: Seeing Johnny's frustration, his teacher comes over and provides assistance when he gets angry. The assistance and attention reinforces the behavior. If he gets out of the task (task avoidance), his behavior is also reinforced.

Replacement behaviors: Johnny will perform resistive sensory-motor activities to regulate his sensory systems prior to being presented with a written task. He will learn to identify warning signs of increased frustration and request assistance.

Modifications: Written tasks will be modified for enhanced sensory feedback (resistance to writing, easels, pencil grips…). Work will be chunked into smaller segments with more immediate feedback. Set up a signal system for Johnny to communicate with the teacher.

Support individuals in at least three primary areas

- **Prevention**:
  - Anticipate and predict the behavior and
  - Establish preventatives
    - Adapt the environment and tasks
    - Meet the sensory needs at the frequency, intensity and duration the child requires.
- **Skill Development:**
  - Modify teaching strategies
  - Teach replacement behaviors
  - Address the underlying sensory and motor issues through environmental and task modifications
- **Response** i.e. consequence (+/-) strategies

Combining Sensory and Behavior Approaches

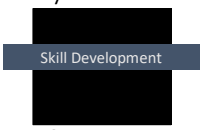
Preventatives

Sensory-motor Strategies: teach Johnny exercises and activities he can do, in his seat, to prepare him for writing tasks (chair push ups, Theraband chair exercises, Isometric exercises..).

Self Regulation/ Modulation: Implement calming strategies such as deep breathing and develop calming centers.

Modify Environment: pencil grips, easels, preferential seating, chunking materials, standing to work, teacher-initiated movement breaks, alternate writing task with a preferred task.

Combining Sensory and Behavior Approaches



Skill Development

Teach a self regulation system and activities, such as Zones of Regulation, and develop a signal system with his teacher (green, yellow, red), indicating his frustration level, anxiety and need to implement self regulation activities.

Teach self awareness and activities effective in self regulation.

Teach a signal system between the teacher and Johnny to indicate he needs help.

Develop gross and fine motor, and motor planning skills to be successful.

Carolyn Murray-Slutsky, MS OTR, C/ NDT, FAOTA
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(954) 224-9050

Combining Sensory and Behavior Approaches

Reinforcers and Consequences

Avoid accidental reinforcement- Can't be let out of the task in response to negative behaviors and cannot be given attention for the negative behaviors.

How will you reward him for using the signal system, sensory-based activities and learning how to self regulate?

Attention and praise Token system Earned privileges

Consequences for tantrum- ignore the behavior, reinforce once on-task

Combining Sensory and Behavior Approaches

Preventatives	**Skills to Develop**	**Reinforcers Consequences**
Sensory-motor Strategies Self Regulation/ Modulation Modify Environment, Teaching Strategies and Tasks	• Teach Replacement Behavior • Develop Fine & Gross Motor • Develop Communication • Self Regulation Strategies • Signal Interference System • Use Priming, Prompting • Modeling and Feedback	Reward and praise him for implementing replacement behaviors.

Keys to Success

Important Things to Consider

Carolyn Murray-Slutsky, MS OTR, C/ NDT, FAOTA
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Individuals (children and adults) are dynamic. There are always multiple factors that contribute to why an individual behaves the way they do. We have to look at behavioral problems from a non-linear viewpoint.

Problem behaviors are used to obtain or avoid something.

- It may serve a sensory need: to obtain or avoid.
- It may serve a behavioral need to communicate they want to obtain or avoid.

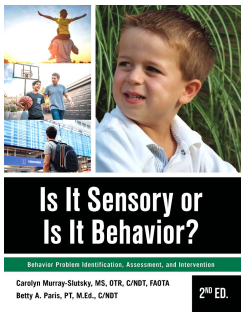
Behaviors may serve multiple purposes and may function to obtain something while simultaneously avoiding something else. Do not stop when you find one thing: look for all functions.

- Individuals with decreased communication skills are at risk of using behaviors to communicate their needs or want.
- Under stress and anxiety an individual's ability to communicate is believed to decreases by at least 10%.
- Sensory-based behaviors are often used to communicate what an individual wants to obtain or avoid, especially if they have decreased communication and/or are under stress.
- Identify what they are trying to communicate. That will be your solution. Then give them a more effective method to communicate. If they are using sensory behaviors to communicate, make sure to meet the sensory need while developing effective communication strategies.

- Make sure to avoid accidental reinforcement. The reinforcement may be ill-timed, reactive, or not delivered in a manner that will reinforce the desired behavior
  - Remember, your response or reaction to a behavior can accidentally reinforce it.
  - Using a preferred object or activity to bribe the individual to interrupt bad behavior, while it is occurring, reinforces the tantrum.
  - Allowing the child's negative behavior to result in avoidance of a task or activity, reinforces the negative behavior.
  - Using a sensory-based activity as a consequence for unwanted behavior, reinforces it.

Sensory-based strategies are often most effective when used as preventatives. Be sure to schedule them in before they are needed.

Sensory-based difficulties make everyday tasks more difficult and stressful. Often, behavioral problems erupt that are both sensory and behavior.



Thank You Therapro

More information is available in our 2022 edition of
Is It Sensory or Is It Behavior?
Available through
Therapro

Mark your calendar for Part 2 of Is It Sensory or Is It Behavior?, June 13th, 2023