Special Learning, Inc.
A Global Leader in Digital Autism Solutions

MULTIDISCIPLINARY COLLABORATION SERIES

MODULE 5: OT & ABA

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Learning Objectives

- Identify the role of an Occupational Therapist School/Clinic settings
- Identify the role of a Behavior Analyst in School/Clinic settings
- Describe the history and competencies of both professions
- Identify common terminology of Occupational Therapists and BCBAs
- List best practices in collaboration to achieve greater outcomes for the client/student

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Julie Riordan, BCBA, MOT, OTR/L

Julie is a dually credentialed Occupational Therapist and Board Certified Behavior Analyst. She started working with children on the autism spectrum in 1994 as a behavior technician. This sparked a passion for working with these amazing kids.

Julie has served as a BCBA and/ or OT in home, center, and community based programs. She has also worked in private schools and consulted in public schools. She has a unique perspective encompassing her experiences as an OT, BCBA, and parent, and firmly believes in the importance of collaboration with families and multiple disciplines in order to help children achieve their full potential in all areas of their lives.

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Gina Vitucci, MOT, OTR/L

- Gina is an occupational therapist certified on the the national and state level. Gina has worked in outpatient clinics, schools, and the home environment. She is certified in Ayres' Sensory Integration and works with children and adults who experience sensory processing difficulties as a result of spectrum disorders, developmental delays, trauma, or other diagnoses.

  Gina owns her own occupational therapy business and has worked on numerous multidisciplinary teams. She currently provides occupational therapy services in the clinical environment and in the home environment; she collaborates with school personnel, too. She believes it is vital to involve the child's "village" and hosts seasonal parent/caregiver nights to disseminate informative, fun, and pertinent information.

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Jennifer Rumfola, MA, CCC-SLP, BCBA, LBA

Jennifer is a dually credentialed professional, licensed and certified as a Speech Language Pathologist and Behavior Analyst (BCBA). She possesses expertise and advanced skill in teaching language to children on the autism spectrum having worked in Early Intervention, Preschool and School environments. Over the past 10 years, she has successfully meshed both fields to support individuals with autism and their educational teams.

Jennifer conducts training for a variety of audiences including educators, related service providers, administrators, parents, para-professionals and undergraduate/graduate students across disciplines. She also maintains her volunteer adjunct faculty position at the University of New York at Buffalo, where she was formerly a part time graduate clinical supervisor.

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Last Time We Discussed

Keys for successful collaboration

Build relationships (*pair with reinforcement*)

- *Get to know each other! Share lunch!*
- *Shaping*: acknowledge what is almost going well, may need adjustment
- Match personality and tone

Identify your scope of competence and respect the same for others

- No one knows everything, no one knows nothing

Choose one goal area and all work together to make contributions

- then use this as the template for future targets

Listen!

- Engage in active listening (repeat what has just been said, ask for clarification)

Ask questions!

- Arrive at an operational definition ("What does that look like?")

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Definition of Collaboration / What Does it Look Like?

Definitions:

- Google dictionary: "the action of working with someone to produce or create something"
- Koenig, Gerenser (2006): "collaboration refers to a variety of activities involving the contribution of each profession towards evidence-based practices that can improve the services for individuals with communication impairments."*
- Kelly and Ticani, 2013: "…shared decision-making and problem solving toward a common goal and resulting in changes to tasks and solutions that would not have been achieved in isolation."

The relationship is so delicate- even going in with a directive plan for collaboration can be overpowering!!

- Know the plan but ease in and make it fluid. Use the recommendations as a guide.
- Think of it as a trip with a general starting and ending point but flexibility in the ways to get there.

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Models of Collaboration

Multidisciplinary — Teams consist of professionals working independently

Interdisciplinary — Teams work toward a common goal; each professional works within their own area of expertise

Transdisciplinary — Teams work together across disciplines to accomplish goals

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Put your agenda aside… Put the child at the center

4.5 (991 Ratings)

Differentiating Sensory from Behavior

Debra Johnson, MS, OTR/L

"It's critical that you gain collaboration by helping everybody on the team to ***let go of their agenda and to see things from the child's perspective***. So usually what happens in team meetings when I see a disconnect in team members- it's because people are looking at the child from their perspective. They're an OT, they're a speech therapist, they're a PT, they're a BCBA. But they're not looking at what the child is experiencing. **So even though they are verbalizing and saying 'I'm here for the child' and 'I'm here to advocate for the child', they are still very much hanging on to their own agenda. 'I am an Occupational Therapist and I use Sensory Integration based therapy and therefore we need to use Sensory Integration theory in practice…'.** No- that's where you need to stop with your judgement and your bias and your agenda and practice your empathy and look at **'OK- what is the child experiencing and what can I pull from my toolkit…(of) evidence based clinical interventions for behavior.' Maybe SI isn't the best option. Maybe ABA really is the best way to elicit this.** Maybe we need to use more of a Floortime approach. Maybe we need to work on relationships." (Johnson, 2019)

OT Practice Framework: (n.d.). Retrieved from https://summit-education.com/course/CSENDJ.1/

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Common Goals Vs. Methods Used to Achieve Goals (Opportunities to Collaborate)

We often have very similar overall goals for treatment.

1. Socially significant changes in behavior that are based on scientific principles and research
2. Improvement in occupational performance
3. Improvements in academic achievements
4. Building necessary adaptive skills for independence
5. Improving the quality of life and learning for individuals- functional outcomes
6. To support the family and educational team through a meaningful and productive relationship

IMPROVE QUALITY OF LIFE!

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“Client Centric" Philosophy

“Client Centric” Model of Practice

Model of collaboration that puts the needs of the client first. In this model, there is a master plan with clearly defined, achievable goals at a macro level.

Goals are incorporate into treatment plans

Goals are further broken down into individual targets.

Targets are reviewed collectively to identify the ***lead*** service provider – i.e. the professional who is best suited to be the primary resource provider.

All available resources are pooled into a “resource tool / toolkit that is available to all team member, regardless of discipline.”

Members of the resource team act as project members to implement the treatment plan to achieve best outcomes.

Who is best suited to do the work?

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How Can the Disciplines Work Together?

ASSESSMENT

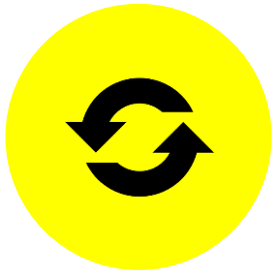
TREATMENT PLANNING

SOCIAL SKILLS GROUPS

FAMILY EDUCATION

TEACHING TECHNIQUES/ TROUBLESHOOTING

GENERAL BEHAVIORAL INTERVENTION/PBIS IN SCHOOLS



GENERALIZATION

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Barriers to Collaboration

1. Decreased understanding of the profession's role, scope of practice, and educational background, leading to decreased respect and "turf wars"
2. Misconceptions of the profession and preconceived ideas based on "Less than positive" experiences with the other discipline
   - "When you have met one OT/ BCBA, you've met one OT/ BCBA"!
3. Differences in terminology- we are often saying the same thing and don't even know it!
4. Varying interpretation of ethical codes.
5. Decreased understanding of discipline-specific concepts
6. Decreased knowledge of research/ "evidence based" practice of the other profession (ex: Sensory Integration)
7. Time to collaborate
8. Belief that asking questions/ accepting help demonstrates lack of professional competency (as an individual practitioner and/ or as a discipline)

Others??? Let's hear 'em! Put them in your comment boxes!

Let's break these barriers!!!

We will refer to these throughout the webinar.

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Breaking Barrier 1: Definitions of OT and ABA

OT

Occupational Therapy:

- "The therapeutic use of everyday life activities (occupations) with individuals or groups for the purpose of enhancing or enabling participation in roles, habits, and routines in home, school, workplace, community, and other settings."

- Occupation: **The things that people do that occupy their time and attention** (Boyt Schell, Gillen, & Scaffa, 2014a, p. 1237).

- "Occupation is used to mean all the things people want, need, or have to do, whether of physical, mental, social, sexual, political, or spiritual nature and is inclusive of sleep and rest. It refers to all aspects of actual human doing, being, becoming, and belonging. The practical, everyday medium of self-expression or of making or experiencing meaning, occupation is the activist element of human existence whether occupations are contemplative, reflective, and meditative or action based" (Wilcock & Townsend, 2014, p. 542).

ABA

Applied Behavior Analysis:

- "The process of systematically applying interventions based upon the principles of learning theory to improve socially significant behaviors to a meaningful degree, *and to demonstrate that the interventions employed are responsible for the improvement in behavior"* (Cooper, Heron, Heward, 1987)

- Behavior: **Anything that a person does** (Catania, 1984)

- "The behavior of an organism is the portion of teh organism's interaction with it environment that is characterized by detectable displacements in space through time of some part of the oranism and that results in a measurable change in at least one aspect of the environment. " Johnston and Pennypacker (1980)

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Breaking Barrier 1:
Understanding the Occupational Therapy Scope of Practice

Occupations	Client Factors	Performance Skills	Performance Patterns
• ADLs • IADLs • Rest and Sleep • Work • Education • Play • Leisure • Social Participation	• Values, beliefs, spirituality • Body functions and structures that reside in the client that influence performance in occupations.	(Observable) • Motor Skills • Process Skills • Social Interaction Skills	• Habits, routines, roles, rituals used in the process to engage in occupations. • Personal or Groups

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Breaking Barrier 1: Occupational Therapist & BCBA Educational Background

OT

Levels and Background

- Educational: Moving to Doctorate level; minimum Master's prior to 2020.
- Fieldwork: Two 12-week rotations (FT)

Licensure

- State: Varies state to state. Typically 20 hours bi-yearly of CEUs. "/L"
- National: National Board Certifications - passing initial exam to be considered OT. 30 hours every 3 years. Not a requirement; is how you maintain the "R".
- OT**R/L**

Certified Occupational Therapy Assistant (COTA)

- OTA is moving to Bachelor's requirements
- Follows the process and procedures set in place by the evaluating OTR/L

Supervision & Licensure

- Dependent on level of competency of the OTA. Minimum 1 hour weekly (may vary by state)
- **C**OTA/**L**

BCBA

Levels and Background

- Educational: minimum of Master's degree in ABA, Psych, Education
- *Bachelor candidates are BCaBA (w/ certification and practice certified BCBA)*
- RBT

Certification (BACB®)

- BCBA certificate earned after passing exam (60%-65% pass rate)
- Intensive Practicum Hours: 750 hours
- Independent Fieldwork: 1500 hours
- 2 year certification cycle

BCaBAs and RBTs

- BCaBAs can assess and create treatment plans and participate in meetings but under the direction of a supervising BCBA

Supervision & Licensure

- Supervisors take additional coursework to become supervisors
- Licensure in some states

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Breaking Barrier 1: Understanding Differences in Focus of Education

Soooo… if we work on a lot of the same things, are we the same?
Both disciplines understand the importance of assessing all of the factors in a person's life.
Why do clients need both disciplines? What makes us different?

OT Focus of Training

OTs have received in-depth training of the following anatomical structures, functions, and typical/ atypical developmental:

- -Motor/ Motor planning/ praxis
- -Neurological (which includes cognitive, emotional, mental health, and sensory processing skills)
- How to assess and treat these conditions to improve function and increase quality of life

BCBA Focus of Training

BCBAs have received in-depth training on the complex inter-relations between setting events, motivating operations, immediate antecedents, and/ or consequences to behavior

- -How each component can serve as a barrier or a ladder to the client's goals
- -How to alter and arrange these components to increase adaptive behaviors, decrease maladaptive behaviors, and increase quality of life.

Collaboration is essential to determine age/ developmentally appropriate antecedents/ consequences to behaviors and functionally equivalent replacement behaviors.

This will be addressed in more detail later in this webinar.

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Breaking Barrier 2: Misconceptions of OT and ABA

Take a deep breath- we've all heard these. It can be sooo frustrating. So important to debunk these myths! Let us know others you have heard- post in comments!

Misconceptions of OT

OTs help people find jobs or teach people skills for a job

OTs only work on ____ (handwriting, fine motor skills, sensory skills, etc.)

OTs work on upper extremities and PTs work on lower extremities

OTs can't/ won't address behavior

OTs are not mental health professionals

OTs reinforce maladaptive behavior with sensory input

OTs just swing kids

OTs and sensory:

- -Sensory means sensory bins
- -Sensory play should only be used as a reinforcer/ reward or a break
- -Sensory Integration is not an evidence-based practice

Misconceptions of ABA

ABA only work with "problem behavior" (ASD, tantrums, aggression, self-injury, etc.)

ABA just think the child is being bad and don't consider biological, neurological, developmental skill deficits

ABA use _____ (bribery, rewards for things they "are supposed to be doing anyway", candy/edibles, manipulation, force compliance

ABA can't/won't address_____ (feelings, sensory, root of the behavior)

ABA is _____(abusive, traumatic, cookie cutter, "cold", too restrictive, immediate antecedents/consequences)

trains kids like dogs or rats

ABA Therapy is

- - Sitting at a table doing drills (discrete trial)
- - Trains people like dogs to be robotic

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Breaking Barrier 2- Misconceptions
How Behavior Principles and Motor Development work together

- Reinforcement is much more than doing something to get a reward. Every behavior that you have learned has been shaped through a long stream of increasingly complex reinforcement contingencies.
- Academic skills, conversational skills, social skills, fine and gross motor skills, and even internal thoughts are learned through reinforcement.

Babies move their arms and legs in an unorganized manner when first born. One day, the baby accidentally hits the mobile with his arm and is reinforced by the animals moving.

This increases the baby's attention towards the mobile, and subsequent accidental hits are reinforced. The baby's motivation to hit the mobile increases his attention towards it and his frequency of arm movements (which gradually increases his strength and stability) until he is able to direct his arm towards the mobile purposefully.

With continual reinforcement guiding development, his aim is gradually shaped and improves. This learned skill combined with other skills being reinforced and learned at the same time make the child's skills become more and more complex.

The child learns to grab the mobile (and other toys)… roll over to reach it… crawl towards it… walk towards it… watch a ball being hit into right field and run to the exact location that he needs to be in to catch it in his glove.

Picture credits: https://babymobilebaby.com/baby-bed-mobile/
https://www.timminspress.com/2013/07/11/lynx-ready-for-provincials/wcm/86d4928e-4638-b42b-76fb-d5570bde9681

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Breaking Barrier 2: Misconceptions of OT and ABA- A Parent's Perspective

Anonymous conversation with parent (Conversation took place on undisclosed online chatroom. BCBA does not know this parent personally. Permission was granted to share this conversation.)

- BCBA: "What are the most frustrating misconceptions of ABA have you had to explain to other parents or professionals?"
- Parent: [I have had to tell people that] "No,I'm not hiring people to abuse my child. No, he isn't in ABA because he's a terrible child who needs boot camp for his 'bad' behavior- while we try to help him overcome negative or harmful behaviors, we also reinforce positive behaviors and help him reach his ultimate potential to live a happy and comfortable life."
- BCBA: "I'm so sorry that you have had to explain that to people. What can we do as professionals to better educate the general population?"
- Parent: "Honestly, I think the majority of responsibility falls on the shoulders of those who simply do not want to change their opinion. I've been blessed to be surrounded by people who *mostly* want to be educated and learn more, but I have heard people (mostly those who have had a personal negative experience with "ABA") who won't budge on their stance that ABA is abusive. All you guys can do is just lead by example and keep on keeping on. Like the old saying goes, "you can lead a horse to water, but you can't make him drink" (even though I kind of feel like the horse just needs more prompting and reinforcement 😂😂)."
- BCBA: "How about misconceptions you have heard about OT or other professions? What are your thoughts on OT/ ABA collaboration. SO many misconceptions on both sides."
- Parent: "I'm 'just' a parent, but an OT/ABA collaboration sounds amaaaaaazing to me! I've had experience with not just ABA but also when my child was in speech therapy where nurturing the sensory system was seen as optional— for my child to learn, bringing in some principles of OT is imperative. Spinning, joint compressions, jumping, swinging, etc. keeps his body happy and his mind sharp. There have been times where it has been so difficult for me make that really understood, so I've often had to step in during sessions and do my best to give my child the input he needs. I hate doing it because I don't want to be "that parent", but I have to. Gosh, an OT/ABA would be my therapist crush 😂🤣😂"
- BCBA: "I can tell that you are a loving, involved, educated parent, and a great advocate for your child. Hope he/ she is doing well"
- Parent: I appreciate that so much. Lord knows that I try even though I do fail often. I'm happy to say that, even despite the speed bumps along the way, he now falls along the moderate side of the spectrum at 7 years old instead of his initial severe/non-verbal diagnosis. He's so much happier, and it saddens me to know that there are children and even adults missing out on that joy all because people demonize ABA.

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Breaking Barrier 3: Differences in Terminology Comparison of Terms across Disciplines

ABA	OT	SLP
Functions of Behavior (in general)	Attempts to meet sensory/motor/mastery need	Attempts to communicate
Adaptive behaviors	Skills	Skills
Maladaptive Behaviors	Behaviors	Behaviors
Internal events / Private Events	Interoception, sensory processing/ regulation	Cognitive
Antecedent Strategies	Adaptations to environment to aid in sensory processing/ decrease sensory defensiveness	Pro-active strategies
Functional Equivalent Replacement Behavior	Behavior that gives same sensory input	Behavior that communicates same thing
Manding	Requesting	Requesting
Tacting	Labeling	Expressive Labeling

More specific explanations of term used by each discipline will be described after break.

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Break

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Breaking Barrier 3: Differences in Terminology Assessment Across Disciplines

Type of assessment	ABA	OT
Indirect Methods	Interviews with parent and/ or client	Interviews with parent and/ or client
	Record review	Record review
	Behavior Checklists, rating scales	Occupational Profile
* Clinical Observations	Antecedent-Behavior-Consequence observations	Motor, sensory, cognitive, emotional, social observations across contexts and environments
	Task/ Component/ Activity Analysis	Task/ Component/ Activity Analysis
	Narrative recording	Narrative recording, “skilled observations”
Formal Assessments	Criterion- referenced assessment- ABLLS-R, AFLS, VB-MAPP, EFL, Vineland-3 etc.	Standardized norm- or criterion- referenced assessments (PDMS-2, Beery VMI, BOT, M-FUN, TVPS, Sensory Profile, SPM)
	Functional Analysis	Occupational Performance measures

For our purposes, we are going to focus on task/ component analysis through Antecedent-Behavior-Consequence analysis.

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Breaking Barriers 3: Differences in Terminology
Assessment: Component Analysis

Task analysis is an integral part of assessment for OTs and BCBAs

- Our task/ activity/ component analysis skills allow us to break ANY behavior- adaptive or maladaptive- into its component parts and determine where the barrier lies. If a child is ready for the next step, what component do we need to add to get them there. If they are not progressing, what component is keeping them from progressing, and what can we change to get them past this barrier.

- Over-riding question guiding assessment/ task analysis:
  - ABA: What is keeping this individual from accessing naturally occurring reinforcement in their environment that will allow them to have them live a more independent, fulfilling, happy life. Why is this behavior occurring/ What is preventing this behavior from occurring.

  - OT: What is keeping this individual from accessing, engaging, and fully participating in all meaningful occupations in their lives?

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Breaking Barrier 3: Differences in Terminology Assessment: Antecedents to Behavior

Antecedent: Any stimulus that precedes a behavior

- **Discriminative Stimulus (SD):** "a stimulus in the presence of which a particular response will be reinforced".- (Malott, 2007, p. 202)
  - Occurs immediately before a behavior
  - Can be environmental, verbal, nonverbal, or internal
- **Setting Events**: "The setting factor concept was introduced by Kantor (1959) and represents the first extensive behavioral treatment of motivational events. Although the concept was introduced in 1959 as the setting factor, it was promptly changed to setting event (e.g., Bijou and Baer, 1961) ... Kantor described setting events as antecedent factors that are broader (e.g., temporally distal events) and more complex than discrete stimulus variables (e.g., food, light). His characterization of the setting event included an organism's health and fitness, its behavioral history, its surroundings, among others. Bijou and Baer (1961) extended the setting event concept by describing it as a stimulus that impacts subsequent stimulus-response relations." (Nosik, M. & Carr, J, 2015)
  - **Concurrent setting events:** occur at the same time as the behavior. For example, varying the type of instructional task across trials can alter the escape-producing effects of difficult tasks (Dunlap & Koegel, 1980).
  - **Preceding setting events:** occur prior to the behavior under study. For example, engaging in vigorous exercise before instruction has been shown to reduce rates of stereotypy (Bachman & Fuqua, 1983; Kern, Koegel, & Dunlap, 1984).
  - Setting events have correlational relationships with the behavior. They may or may not have experimentally proven causal relationships to the behavior.
  - **Private stimuli** (see next slide)
- **Motivating Operations**: "an environmental variable that momentarily changes the value of a consequential stimulus (e.g., reinforcer, punisher) and changes the probability of members of that functional response class." (Michael, J, 2007)
  - Events are only classified as MOs when they meet the value- and behavior-altering features of its definition. Thus, a greater evidential requirement exists to classify an event as an MO than to classify it as a setting event. (Nosik, M & Carr, J, 2015)

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Breaking Barrier 3: Differences in Terminology Assessment: Behaviors and Consequences

Behaviors: Can be observable large motor (ex: throwing a baseball, observable small motor (ex: talking), or private behaviors

Consequences: anything that directly follows a behavior- could be naturally occurring (environment, reaction of another person or animal, etc., private event), contrived by others, or contrived by self

Private events: Can be antecedents, behaviors, or consequences

"A person contacts the world with the mediation of his or her nervous system, which carries stimulation received through the sense organs (vision, hearing, touch, smell, and taste). Part of this world is one's own body, which can also affect the person as interoceptive or proprioceptive stimulation. The interoceptive and proprioceptive stimulations are those generated by the individual's own body:

- Interoceptive stimuli: ''stimulation from organs like the bladder and alimentary tract, from glands and their ducts, and from blood vessels. (Skinner, 1993, p. 25)
- Proprioceptive stimuli: "those generated by one's motor apparatus, the muscles, joints, and tendons of the skeletal frame and … other organs involved in the maintenance of posture and the execution of movement'' (Skinner, 1993, p. 25)
- "We can not now measure all, or even most, internal body actions. However, we will be able to measure more and more of them as our instruments improve. Behavior analysts consider internal movements as behavior because they are physical and produce results" (Miller, 1997, p. 16)
- "*Private stimuli and discriminative function*: A private stimulus may show a discriminative function for both verbal and nonverbal responses. For example, an interoceptive stimulation generated by the respiratory system may function as a discriminative stimulus for one's nonverbal response when opening the window of the house or for the verbal response ''I feel breathless.'' (Tourinho, 2006, p. 16).
- Private events- ex: thinking
  - "..behavior analysts do not deny that thinking exists. They argue that it exists in the physical world; we do not need to call upon a hypothetical mental world that we can never observe directly. They propose that thinking is a form of behavior that is very private." (Miller, 1997, p. 17)

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Breaking Barriers 3: Differences in Terminology Types of Reinforcement/ Functions of Behavior

Positive Reinforcement

Function: To gain access to item, activity, attention, or internal event

Socially Mediated Positive Reinforcement

Access to item given by another person

Adaptive behavior example: Child asks his mom for a cookie. She gives him one. In the future, child is more likely to ask for a cookie again.

Maladaptive behavior example: Child sees a cookie, drops to the ground, and starts screaming "cookie". Adult gives child a cookie. In the future, child is more likely to drop to ground and scream when he wants a cookie.

Automatic Positive Reinforcement

Other person not needed to gain access

Adaptive Behavior Examples: Child initiates swinging on playground. This sensory input meets internal needs. Initiation of swinging behavior is more likely to occur in the future.; Child retrieves coloring book independently and colors. He is proud of how the page looks and the frequency of coloring behaviors increase

Maladaptive Behavior Example: Child sits on ground in middle of playground and rocks back and forth. He is automatically reinforced by this behavior. Self-rocking behavior frequency increases.

Negative Reinforcement

Function: To escape, avoid, or stop item, activity, attention, or internal event

Socially Mediated Negative Reinforcement

Escaping something controlled by another person

Adaptive Behavior Example: Child is taught to say "I don't want to do that." The task is taken away. Frequency of appropriate manding for removal of nonpreferred items increases.

Maladaptive Behavior Example: Child engages in screaming behavior when asked to perform a task. Therapist removes task/ demand and allows child to leave the area. In the future, screaming in response to tasks/ demands is more likely to occur.

Automatic Negative Reinforcement

Escaping something controlled by environment or internal event

Adaptive Behavior Examples: Adult has a head-ache and takes Tylenol. The head-ache goes away, and frequency of taking Tylenol when he has a head-ache increases; Child scratches itch and itch stops.

Maladaptive Behavior Example: Child has a head-ache and squeezes sides of head. This behavior temporarily relieves pain in head (as pressure travels faster to the brain than pain); thus the frequency of head squeezing behavior increases.

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Breaking Barriers 3: Differences in Terminology
Multiple Functions Controlling Behavior

- Many behaviors can be developed and/ or maintained by a combination of the above functions, or they may develop due to one function and be maintained by another
  - Ex: a child may bite another child in order to get proprioceptive input into his mouth. However, when this is responded to by taking the child out of the classroom, the child learns that if he wants to get out of doing his work and away from the other children, he just needs to bite another child.
- For this reason, it is important to address the origin of the behavior (in this case, automatic positive reinforcement/ sensory need) as well as the learned behavior (in this case, socially mediated negative reinforcement).

Automatic Positive Reinforcement

Socially mediated Negative Reinforcement

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https://www.washingtonpost.com/lifestyle/on-parenting/what-to-do-with-a-preschooler-who-wont-stop-biting/2018/01/09/b1d2a578-f0b5-11e7-b3bf-ab90a706e175_story.html?noredirect=on&utm_term=.0976ad0cdd15

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Breaking Barrier 4: Interpretation of Ethical Codes
BCBA Referral to OT

If **automatic** positive/ negative reinforcement is identified as a function of the maladaptive behavior we are targeting for reduction OR acceleration, BCBAs must analyze this automatic reinforcement further to determine the internal need that this behavior is meeting.

- BCBA's are not trained to assess or treat sensory/ neurological conditions. It is outside of our scope of practice. Therefore, we **MUST** refer out. **It goes right back to ethics.**
- **In order to know when to refer a client to an OT, BCBA's must have a basic understanding Sensory Processing.** This information is to be used for referral and collaboration purposes only.

OT referral/ consultation is imperative to:

- determine these needs, adapt the environment to allow the child to access these needs appropriately and/ or to decrease unnecessary input that decreases his ability to complete tasks/ adaptive behaviors.
- determine functionally equivalent replacement behaviors

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Breaking Barrier 4:
AOTA® & BACB® Ethical Code Regarding Collaboration

AOTA®	BACB®
Principle 1: Beneficence- Occupational therapy personnel shall demonstrate a concern for the well-being and safety of the recipients of their services. **C.** Use, to the extent possible, evaluation, planning, intervention techniques, assessments, and therapeutic equipment that are evidence based, current, and within the recognized scope of occupational therapy practice. **D**. Ensure that all duties delegated to other occupational therapy personnel are congruent with credentials, qualifications, experience, competency, and scope of practice with respect to service delivery, supervision, fieldwork education, and research. **E**. Provide occupational therapy services, including education and training, that are within each practitioner's level of competence and scope of practice. **Principle 6: Fidelity-** Occupational therapy personnel shall treat clients, colleagues, and other professionals with respect, fairness, discretion, and integrity. **H.** Promote collaborative actions and communication as a member of interprofessional teams to facilitate quality care and safety for clients. **I.** Respect the practices, competencies, roles, and responsibilities of their own and other professions to promote a collaborative environment reflective of interprofessional teams.	**Boundaries of Competence** (a) All behavior analysts provide services, teach, and conduct research only within the boundaries of their competence, defined as being commensurate with their education, training, and supervised experience. (b) Behavior analysts provide services, teach, or conduct research in new areas (e.g., populations, techniques, behaviors) only after first undertaking appropriate study, training, supervision, and/or consultation from persons who are competent in those areas. **2.03 Consultation** (a) Behavior analysts arrange for appropriate consultations and referrals based principally on the best interests of their clients, with appropriate consent, and subject to other relevant considerations, including applicable law and contractual obligations. (b) When indicated and professionally appropriate, behavior analysts cooperate with other professionals, in a mSam er that is consistent with the philosophical assumptions and principles of behavior analysis, in order to effectively and appropriately serve their client

In summary, both professions' ethical codes stress the importance of:

- Staying not only within scope of practice, but also within boundaries of practitioner's individual competence
- Making referrals/ getting consultation from other professionals for areas out of scope of practice/ practitioner's competence
- Respecting other professionals
- The importance of collaboration to promote progress for the client

We will consider these ethical implications within our case study analysis.

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Breaking Barrier 5: Understanding OT specific concepts – Sensory Processing and Sensory Integration

Sensory Processing:

- Broadly, sensory processing refers to the management of incoming sensory information by the nervous system.
- The central nervous system records, filters, and combines incoming sensory information at multiple levels.

Sensory integration is a component of sensory processing

- It is an occupational therapy model of practice that includes assessment and intervention procedures – sometimes referred to as Ayres Sensory Integration® (ASI) Intervention.
- Sensory integration refers to the process of organizing sensory information for use
- Sensory integration is an umbrella term encompassing many CNS processes related to perceptual organization, modulation, and action planning

OTs can address Sensory Processing through:

1. Antecedent interventions
2. Replacement behavior/ skill training
3. Therapy aimed at making lasting neurological changes

(These will be addressed further on a future slide)

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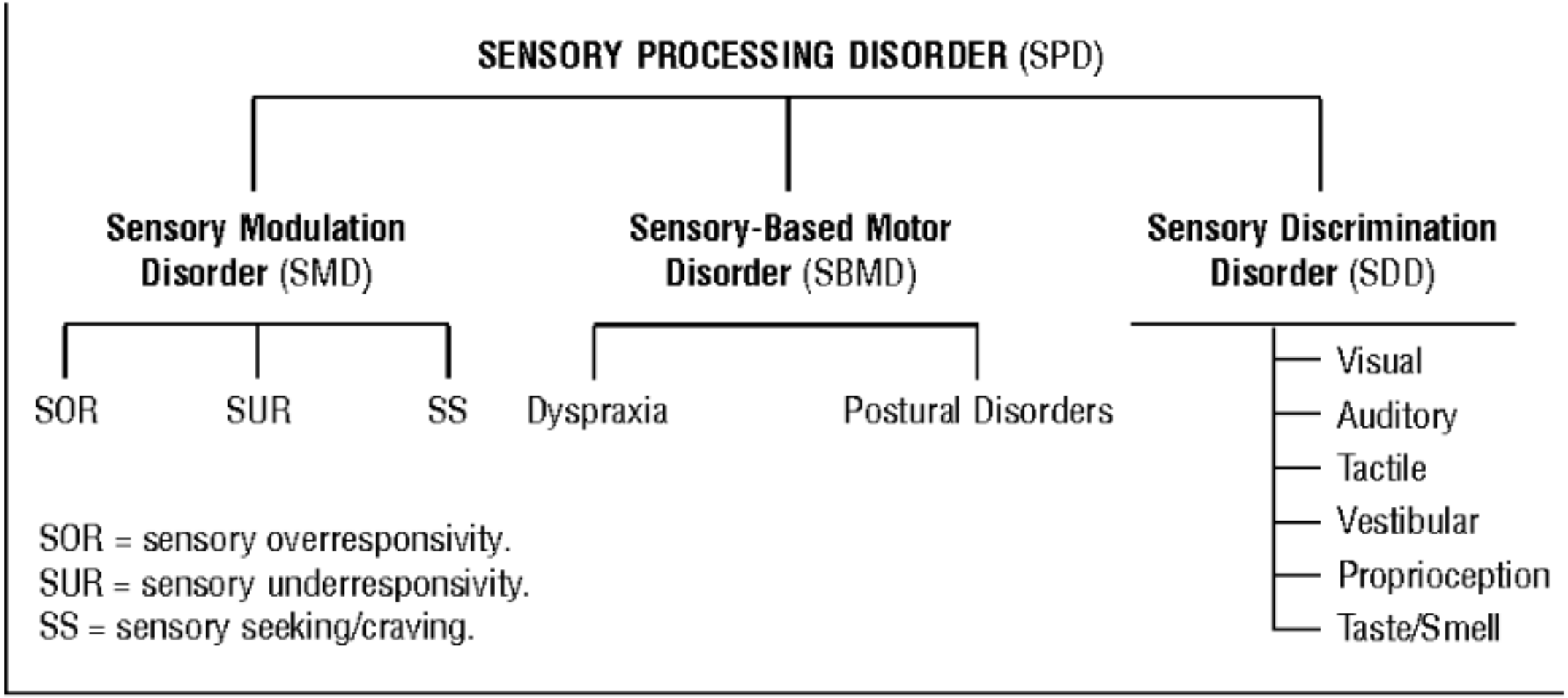
Breaking Barrier 5: Understanding of OT specific concepts- Types of Sensory Processing Disorders



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Breaking Barrier 5: Understanding of discipline-specific concepts -Sensory Modulation

Modulation: a neurological function and is the organization of sensory information for ongoing use.

- The ability to modulate (i.e., organize/balance information from all sources) responses of their nervous system permits children to generate appropriate responses to stimuli in the environment.

- Children who are **under-responsive (hyporesponsive)** have high sensory thresholds meaning it takes a lot of stimuli to reach the threshold.
  - This is when our cup is large and we need MORE information or input to make sense.
  - These kids can look to have very low arousal and may need intense movement to "wake them up".
  - They might require more time to explore through touch because one touch isn't enough
  - They may explore things orally as well.

Photo credit: craziestgadgets.com

- Children who are **over-responsive (hyperresponsive)** have low sensory thresholds meaning it takes very little stimuli to create a response.
  - This is when our cup is small. It is easily filled up and overflowing.
  - These kids require very little amounts to respond.
  - A small, light touch could send these kids into a fight or flight response.
  - A ticking clock that no one else notices might put them on high alert

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Breaking Barrier 5: Understanding of OT-specific concepts – Somatosensation

Somatosensation includes: touch and proprioception

Touch: Tactile refers to the sensory messages received through our skin.

- Tactile information is a basis for learning about external objects, our external environment, and the condition of our body.
- Receptors in our skin give us information about light touch, deep pressure, vibration, movements, temperature, and pain.
- It tells us what we are touching or what is touching us, and where it is touching on our body.
- It helps us discriminate if it is harmful or safe and how we should react.
- We need this system for survival.
- Tactile input includes light touch, deep pressure, vibration, movements, temperature, and pain.
- Adaptive example: habituating to the tag in our shirt, watch on our wrist, etc.
- Maladaptive example: child punches a child because they rubbed up against them in line

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Proprioception: Tells the brain when and how the muscles are contracting or stretching, and when and how the joints are bending, extending, being pulled or being compressed.

- This information enables the brain to know where each part of the body is and how it is moving
- Adaptive example: navigating our space (kitchen, etc.) when lights are out and vision is occluded
- Maladaptive example: breaking toys because they are unable to grade their force

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Breaking Barrier 5: Understanding of OT-specific concepts – Vestibular Processing

Vestibular Processing

- The vestibular system responds to motion or change of head position.
- It is related to functions such as balance, reflexes, coordination of eye and hand movements, ability to use both sides of the body together, and arousal level.
- The vestibular system is a unifying system and a major organizer of all other sensory responses.
- It has and plays a role in many interconnections with the brain.
- Poor vestibular processing can affect movement, coordination, behavior, attention, relationship with space, body awareness and additional social-emotional skills.
- The vestibular system also affects the visual field and other oculomotor control fu

- <u>Adaptive examples</u>:
  - Moving about the room without stumbling or loss of balance
  - Requesting to use a swing before or after school

- <u>Maladaptive examples:</u>
  - Jumping/ wiggling/ falling out of seat during seated work at school
  - Fight/ Flight responses constantly or LOW arousal and can not “get set”

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Breaking Barrier 5: Understanding of discipline-specific concepts
Types of Sensory Integration Therapy

Sensory Integration

- Occupational Therapist supported interventions (consultation, coaching, home/classroom programs)
  - Environmental Adaptations (BCBAs could use these as antecedent manipulations)
    - Ex: adapted lighting, adapted seating
  - Sensory Strategies (BCBAs could use these as replacement behaviors)
    - Ex: Sensory Diets/ Menus, oral sensory "chewies", fidgets, etc.
- One on One Occupational Therapist- Led Interventions- Neurological Changes
  - Ayres Sensory Integration
    - In clinic- suspended equipment, etc.
  - Sensory Based Intervention
    - Ex: Therapeutic Listening, Qigong massage, Brushing

Photo credit: http://thereadingrug-funinfirstgrade.blogspot.com/2014/03/alternative-seating-in-action.html

Photo credit: https://westtexasrehab.org/blog/the-role-of-occupational-therapy-within-the-si-(sensory-integration)-gym

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Breaking Barrier 6: Evidence Based Practice Occupational Therapy Research Studies

Summary of Research Studies (Bodison, S. (2019)

OT-SI 2x/week for 10 weeks	SMD (n=24); average age 6-7 yo	**Leiter International Performance Scale–Revised Parent Rating Scale (Leiter–R):** Attention & Cognitive/ Social composite significant improvement **Short Sensory Profile (SSP), Child Behavior Checklist (CBCL) & Electrodermal Reactivity:** Improved scores but not significant **Vineland Adaptive Behavior Scales:** No significant improvements	Miller, Coll, & Schoen, 2007
SI-based treatment 18 sessions over a 6-week period, 45 mins each	ASD or PDD-NOS (n=37); age 6-12 yo	**Social Responsiveness Scale:** Significant improvement on social responsiveness and autistic mannerisms **Goal Attainment Scaling (GAS):** Significant improvement on social-emotional skills, sensory processing and regulation, and functional motor skills **Sensory Processing Measure (SPM):** No significant differences were found **Quick Neurological Screening Test, 2nd Edition (The QNST–II):** No significant differences	Pfeiffer et al., 2011
OT-SI 3x/week for 10 weeks, 60 min each	ASD (n=32); age 4-8 yo	**Goal Attainment Scaling (GAS):** Significant improvement for treatment group (goals primarily in areas of self-care, play, and sitting—no reporting of outcomes in these specific areas) **Pediatric Evaluation Disability Inventory (PEDI):** Significant improvement on socialization and self-care **Pervasive Developmental Disorders Behavioral Inventory (PDDBI):** No significant difference in autism behaviors **Vineland Adaptive Behavior Scales:** No significant improvements	Schaaf et al., 2014

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Breaking Barrier 6: Evidence Based Practice

Level 1b **RCT**	***Sensory diet*** (somatosensory stimulation—68 activities and 13 target behaviors) 2x/week for 24 sessions, 45 minutes each	Children with ASD in Turkey (n=30); age 7-11 yo	**Sensory Evaluation Form for Children with Autism (developed by authors):** Significantly lower total score	Fazlioğlu & Baran, 2008
	Sensorimotor enrichment (vs. usual care, no SI) Daily exposure to 4-7 parent facilitated sensorimotor enrichment activities daily (34 to choose from) for 6 months	Boys with ASD (n=28); age 3-12 yo	**Childhood Autism Rating Scale (CARS):** Significant improvement on severity of autism (no significant improvement within specific sub-items) **Parent report of autism symptoms:** Significant improvement compared to standard care group (69% vs. 31%)	Woo & Leon, 2013

Bodison, S (2019)

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Breaking Barrier 6: Evidence Based Practice

Level 2b **Quasi-Experimental Design**	***SI therapy*** 1x/week, 60 mins each; 8-10 months	High functioning ASD (n=20); age 3-7 yo (Used retrospective clinical records)	**Japanese version of the Miller Assessment for Preschoolers (JMAP):** Significant improvement in total score, coordination index score (gross motor, fine motor and oral motor abilities), non-verbal and complex index scores compared to group therapy (social skills training, communication training, kinetic activities, child-parent play)	Iwanaga et al., 2014
Level 4 **Single subject study design**	***Therapy ball chair*** During circle time for 9 days	Boys in kindergarten-1st grade intensive instructional program for children with moderate to severe ASD (n=6)	**Video coding:** Increased in seat behavior for a child with vestibular-proprioceptive seeking behaviors; children with poor postural stability were less engaged while on therapy ball chair; others had mixed results. **Teacher report:** Did not perceive improvements in on-task behavior of students	Bagatell, Mirigliani, Patterson, Reyes, & Test, 2010

Bodison, S (2019)

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Breaking Barrier 7: Finding Time to Collaborate

Releases need to be signed to ensure that parents consent to release of information between providers. Confidential email and phone calls can be completed in all scenarios below.

Home/ Community Based Services (BCBA and OT both in community)

- BCBAs can attend OT, SLP, Psychology, etc. appointments

Home/ Community Based BCBA and school-based OT

- BCBA can observe in school if administration will allow
- IEP meetings

School-based BCBA and OT

- IEP meetings
- Schedule overlaps in or out of classroom
- Lunch meetings

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Breaking Barrier 8: Collaboration helps us all learn!

Remember- No one knows everything; no one knows nothing.

A research study entitled “Smart People Ask for (My) Advice: Seeking Advice Boosts Perceptions of Competence” (Brooks & Geno, 2015, p. 1421–1435) found that “individuals perceive those who seek advice as more competent than those who do not seek advice”.

- When you ask someone for advice in a challenging situation, it makes that person feels smart. If the person feels smart, they think highly of you. And if they think highly of you, it makes you feel confident. It’s a nice cycle of circular ego boosting.

Dale Carnegie discusses this in his classic book How to Win Friends and Influence People

Part 2 (Six ways to make people like you); Principle 4: Be a good Listener; Encourage others to talk about themselves

- Carnegie explains that he once attended a dinner party where he met a botanist whom he found to be absolutely fascinating. He listened for hours with excitement as the botanist spoke of exotic plants and indoor gardens.
- Before leaving, the botanist told the host of the dinner party that Carnegie was a “most interesting conversationalist” and gave him several compliments.
- Of course, Carnegie had hardly said anything at all. What he had done was listen intently. He listened because he was genuinely interested.

(Hubspot, 2019)

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Bringing it together: Assessment/ Task Analysis across Disciplines

Examples of Affected skill areas	Examples of Possible Immediate Antecedents	Examples of Possible Maladaptive Behaviors *	Example of Possible Consequences	Behaviors possibly maintained by:
Setting event: Sensory Modulation difficulties				
- Attention - Activity level - Arousal level	-Transitions -changes in routines -too much input (loud noises, lot of people/ visual stimuli in room, strong smells or tastes, etc.) -not enough input (low light, low volume, etc.)	-Self stimulatory behavior -decreased visual attention to task -climbing/ jumping on furniture -non-response - Staying up late, waking up at night, falling asleep at inappropriate times	**Internal**- escape/ avoidance from undesired internal event **Environmental: -** escape/ avoidance from undesired activity/ event	-**Internal:** Automatic negative reinforcement -**Environmental:** Socially Mediated negative reinforcement
Setting Event: Concerns related to Praxis				
-Motor skills -Play skills -Self-Care skills -Imitation/ receptive skills -Body awareness -Generalization across people, settings, responses, materials, and time -Initiation of activities -prompt dependence/ learned helplessness	-novel, unfamiliar tasks -changes in routine or environment (furniture/ arrangement of room) -tasks that are graded to high, are beyond their skill level, or contain novel components	-tripping over/ bumping into items people, falling -looking at instructor for prompts -non-response -completing task with rigid body movements	**Internal**: maladaptive self-thoughts **Environmental:** -assisted to complete task -escape/ avoidance of undesired activity/ event	**Internal:** Automatic negative reinforcement **Environmental: :** Socially mediated positive reinforcement -Socially mediated negative reinforcement

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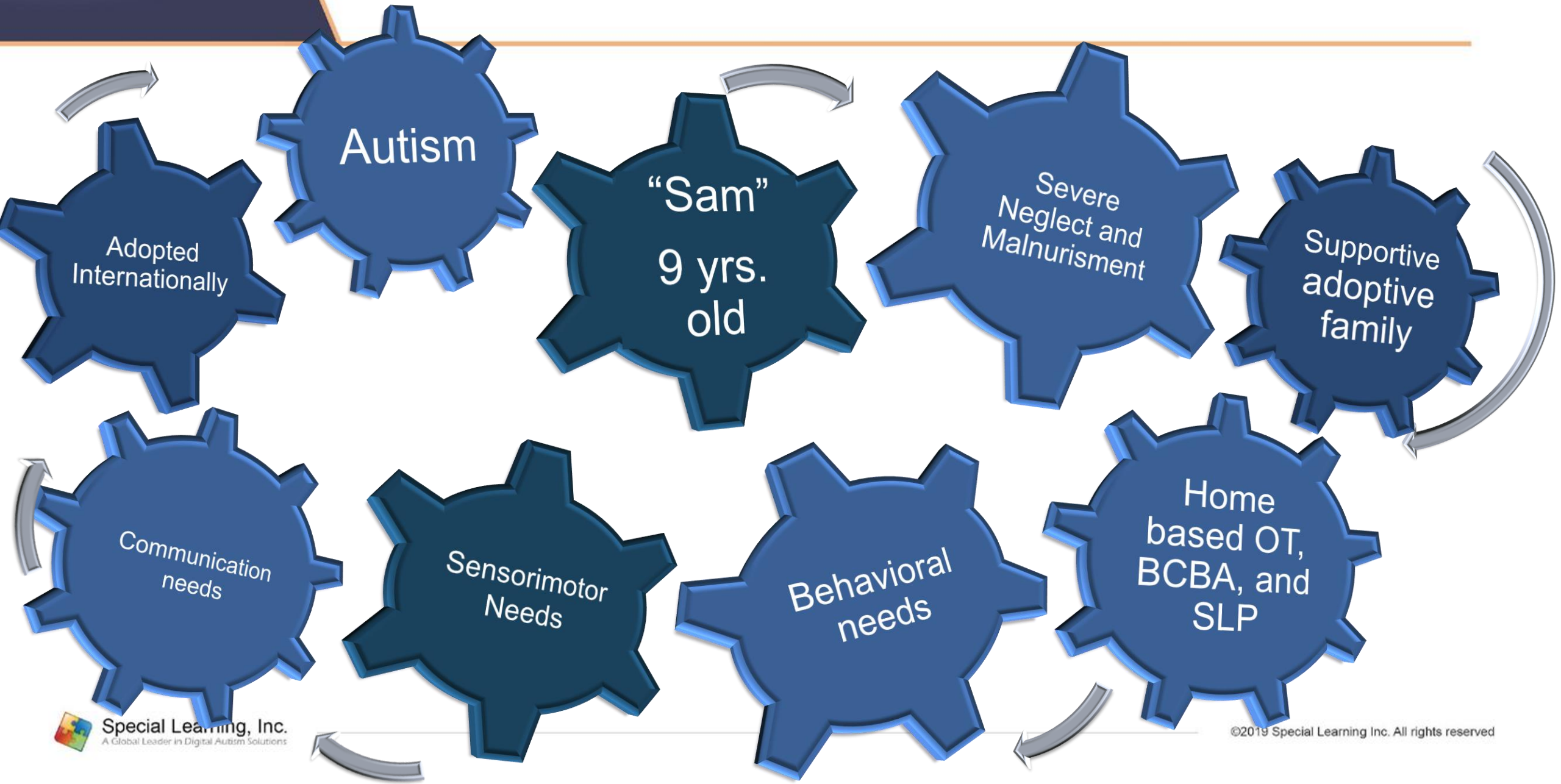
* Unless otherwise noted, SIB, aggression, crying/ screaming, and elopement are possible behaviors.

Bringing it together: Introduction of the Case Study



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Resources and Downloadable Tools

SOME CURRENT DIMENSIONS OF APPLIED BEHAVIOR ANALYSIS' DONALD M. BAER, MONTROSE M. WOLF, AND TODD R. RISLEY
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1310980/pdf/jaba00083-0089.pdf

OT Code of Ethics
https://d.docs.live.net/0f328d1cd6a12e20/Special%20Learning/OT%20code%20of%20ethics.pdf

SETTING EVENTS IN APPLIED BEHAVIOR ANALYSIS: TOWARD A CONCEPTUAL AND METHODOLOGICAL EXPANSION, ROBERT G. WAHLER AND JAMES J. Fox
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1308218/

EFFECTS OF SETTING EVENTS ON THE PROBLEM BEHAVIOR OF STUDENTS WITH SEVERE DISABILITIES, CRAIG H. KENNEDY AND TUNA ITKONEN
https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3A401f76a3-ed6e-43a5-83ea-8cb3f371aa52

How to Win Friends and Influence People- [Book Summary]
https://www.hubspot.com/sales/how-to-win-friends-and-influence-people-summary

Kansas University setting events resources
http://www.specialconnections.ku.edu/?q=behavior_plans/positive_behavior_support_interventions/teacher_tools/setting_event_interventions

A Tutorial on the Concept of the Motivating Operation and its Importance to Application Paul Langthorne, Ph.D., BCBA, Peter McGill, MPhil, CPsychol, BCBA
University of Kent
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2859803/

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On the Distinction Between the Motivating Operation and Setting Event Concepts. Melissa R. Nosik1 & James E. Carr1
https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3A6cff3198-5f62-438e-8eb6-312e0a2ccb15

Private Stimuli, Covert Responses, and Private Events: Conceptual Remarks, Emmanuel Zagury Tourinho
https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3Ac1c3f361-bdad-4142-ade5-baf9e13c68bc

Smart People Ask for (My) Advice: Seeking Advice Boosts Perceptions of Competence (Brooks & Geno, 2015, p. 1421–1435)
https://www.hbs.edu/faculty/Publication%20Files/Advice%20Seeking_59ad2c42-54d6-4b32-8517-a99eeae0a45c.pdf

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Thank you for attending Special Learning's

Final Session in the Multidisciplinary Collaboration Series: OT & ABA Collaboration

Thank you to the wonderful Special Learning team members without whom our experience would be greatly diminished (or just plain disorganized!)

Sam Beirne, BCBA, (ACE Coordinator & Moderator)
Krystal Larsen, BCaBA, Director of Clinical Solutions (Moderator and Clinical Support)
Michelle Capulong (Client Support Manager)
Pia Agsao (Client Support)
Sasho Gachev (Creative Director)

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