
Laurie Charlot, PhD  
Developmental Psychologist  
Clin. Dir NC START East  
National START Team Consultant  
Asst. Prof., UMass Medical School  
Dir. Becket Multidisciplinary ID/MH Evaluation Team
Language Interventions

- Several different research groups using several different approaches to language intervention
- Frustration occurs when people cannot communicate
- Sometimes aggression and other CBs work!!
- What can help?
- Functional Communication Training or FCT
  - https://www.youtube.com/watch?v=hoF1UJ9YBUY
MANDING

REQUESTING WHAT YOU WANT

https://www.youtube.com/watch?v=Vo1TwayGyXs
Social Interactions
Atypical development in Children with ASD

- Attachment behavior
- Instrumental vs Expressive Relating
- Hand-leading
- Social referencing
- Learning social rules
- Lack of social play
- Awareness of others’ emotions
- Seeking physical affection
- Lack of peer friendships
- Problems in developing imitation

Charlot 2019
POSSIBLE IMPACT OF SI on Psychopathology

• Common misconception that all people with ASDs are absent social drive
  • This may change over the course of development
    ▶ Tanguay (2000) PDDs: A 10-Year review
      JAACAP 39(9), 1079-1095

• Unusual or odd manner of trying to connect with others may lead to misdiagnosis of psychiatric symptoms

• Lack of understanding of social rules looks “bizarre”

• Lack of awareness of the impact of one’s behavior on others seen as psychopathologic
  • AS or HFA - Being right > being friendly
Caring about making friends v Being able to make friends

- “Friendship-making is considered a well-established domain of deficit for children with autism spectrum disorders, with this population sometimes described as incapable of making friends. However, the majority of children with ASD indicate a desire for friends”
Loneliness

“Loneliness was the strongest predictor of depressive symptoms ....

{also suggesting} a pathway from trait-like anhedonia in ASD to depression via elevated loneliness ....

....variability in hedonic capacity within the autism spectrum may differentially confer risk for depression in adults with ASD.

Results underscore potential mental health benefits of social skills interventions and community inclusion programs for adults with ASD”

Social Functioning in ASD

- Found *motivation to interact with others* sig. r+ with social anxiety & social skill.

- “*Our results suggest that motivation may be important to target in treatment, and that treatments should be tailored to the areas most in need of improvement in each individual.*”

Compensating for Vulnerabilities

- “IQ, EF and anxiety appear to be implicated in the processes by which certain autistic young people can compensate for their underlying ToM difficulties.”

- A tendency to compensate - not about severity of ASD

  - “......suggesting that well-compensated individuals are not experiencing a milder form of ASD. The construct of compensation in ASD has implications for research and clinical practice.”
RRBs - RESTRICTIVE AND REPEITIVE BEHAVIOR

- Part of the “core” features of ASD
- Some debate re primacy as a “defining feature” vs social/communication challenges
- Probably not the same as “OCD” but with some shared pathways and mechanisms

Are RRBs the same as OCD?

There is a > than expected freq of OCD in Parents of children with > restricted interests and rituals

RRBs

- Unusual motor movements and self-stimulatory behaviors
  - Rocking, hand-flapping, toe-walking, head-banging

- Stereotypies = repetitive motor movements or postures
  - Not only in ASD
  - Transient or life-long
  - Maybe a reaction to inability to regulate sensory input
  - May be affected by specific neural substrate abnormalities related to genetic anomalies
Restrictive & Repetitive Behaviors: RRBs & Anxiety

RRBs - Two Types

- (a) *repetitive motor and sensory (RSM) behaviours* such as repetitive hand or finger movements and
- (b) *insistence on sameness (IS)*

Evidence supports the claim that *RRBs are associated with anxiety in individuals with ASD*

One hypothesis:

- Different subclasses of *RRBs* may function in different ways to either *increase or reduce sensory stimulation* and *anxiety*.

Charlot, 2018
Pathways to Difficulty with Change and Narrow or Restrictive Range of Interests

- Many people with an ASD have special areas of interest
  - may focus a great deal on these topics!
- Sometimes, know many details,
  - excellent at “fact listing”
- BUT - Tendency to “miss the forest for the trees” “...one-sided, long-winded speech about an unusual topic while being oblivious to the listener's feelings or reactions, such as signs of boredom or wanting to leave.”
Narrow Areas of Interest

- Weather, storms and tornadoes
- Video Games
- Cooking
Restricted Range of Interests

- Interferes with developing friendships and contributes to social isolation (a sig risk factor in psychiatric illness)
- Anxiety or frustration when limits are set
- Failure to understand impact of related behaviors on others
Treating RRBs when they cause distress, unhappiness

- Best treatments are non-medical
  - Behavioral*
  - Focus on reducing anxiety, using sensory modulation as well:
ANXIETY & RRBs

- Assess role of anxiety, reduce anxiety....
  - Most freq psych comorbidity in ASD = anxiety, phobias
- Let go of things that don’t matter
- Organize the environment
- Reduce down time
- Eliminate or mitigate setting events
- Schedule the compulsion to occur following desired responses less enjoyed
  - “Premack”
  - Behavioral momentum

Charlot 2019
Create a culture/environment that is:

- Positive and encouraging
- Safe - person has rapport with and trusts staff
- Quiet
- Predictable
- Engaging
- Fosters skills person is capable of that leads to easy access to reinforcement naturally

Laurie Charlot, PhD
Developmental Psychologist
Clin. Dir NC START East
National START Team Consultant
Asst. Prof., UMass Medical School
Dir. Becket Multidisciplinary ID/MH Evaluation Team
The Sensory System

- Proprioception (sensations in the muscles and joints)
- Vestibular (movement)
- Tactile (touch)
- Visual (sight)
- Auditory (hearing)
- Olfactory (smell)
- Gustatory (taste)

https://www.youtube.com/watch?v=D1G5ssZlVUw
Atypical Sensory Profiles in ASD: New DSM 5 Criteria includes:

- **Hyper- or Hypo-reactivity** to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Charlot, 2018
Sensory Modulation Symptoms in ASD

Meta-analysis > 14 studies - atypical nature of parent reported sensory symptoms in individuals with ASDs

“Persons with ASDs show elevated sensory modulation symptoms across ages and spectrum of severity.” p.10

Some of the low-sensitivity or hypo-responders are children who are also “avoiders”

Links Between IS (Insistence on Sameness) & Anxiety

- Anxiety was significantly associated with IS behaviours
  - i.e. routines, rituals, hoarding and dislike of change,
  - IS behaviours, which are linked to arousal by sensory sensitivity and sensation avoiding, may function to narrow sensory input.

Sensory Challenges - Add Risk for Anxiety in ASD

- Studied children/adolescents with ASD and EOE (Ease of Excitement or who get overly aroused) - who had difficulty identifying feelings

- “…, being both easily excited by stimuli and unable to identify one’s feelings is particularly anxiety provoking.”


Charlot, 2018
SENSORY MODULATION

- Sensory modulation intervention aims to use calming sensory input to manage the hypersensitivity and physiological arousal associated with anxiety.

Sensory-Over-Responsivity or SOR

- SOR = extreme or unusual negative reactions to sensory stimuli

- Examples:
  - noisy environment
  - visually stimulating environment
  - seams in clothing
  - being touched unexpectedly
    - light touch vs deep pressure
  - people and objects are “too close”

Charlot, 2018
Everyone Has a Sensory Profile—Most People React to Certain Inputs

- Abnormal sensations we all experience:
  - Pain
  - Fatigue

- Anything that suddenly causes us to feel odd, off, uncomfortable
  - Medication side-effects
  - Motor restlessness
  - Muscle stiffness

Charlot, 2018
Checklists- Features of SOR

- Following slides, some examples of a checklist of sensory challenges
- Website below

**Sensory Processing Disorder Checklist: Signs And Symptoms Of Dysfunction**

Charlot, 2018
Tactile Sensitivity

- anxious with light unexpected touch
- did not like to be held or cuddled
- appears fearful of, or avoids standing in close proximity to other people or peers (especially in lines)
- becomes frightened when touched from behind
- complains about having hair brushed
- bothered by rough bed sheets
- resists friendly touch except family
- prefers hugs
- distressed by seams in socks, clothes rubbing on skin
- refuses to wear clothes with rough textures, hats, or belts, etc.
- avoids using hands for play
- may want to wear shorts and short sleeves year round
- distressed about having face washed
- resists brushing teeth
- extremely fearful of the dentist
- picky eater, only eating certain tastes and textures
- may refuse to walk barefoot on grass or sand
- may walk on toes only
- raindrop, water from shower, on the skin
  - may feel like torture and produce adverse and avoidance reactions

Charlot, 2018
Visual Sensitivity

- Sensitive to bright lights - squints, cover eyes, cry
- Difficulty keeping eyes focused on task/activity he/she is working on for an appropriate amount of time
- Easily distracted by other visual stimuli in the room; i.e., movement, decorations, toys, windows, doorways etc.
- Has difficulty in bright colorful rooms or a dimly lit room
- Rubs his/her eyes, has watery eyes or gets headaches after reading or watching TV
- Avoids eye contact
- Enjoys playing in the dark

Charlot, 2018
Fights broke out each time a tourist took a loud roller board over the bridge by the flamingo area.

We called them “kurfluffles.”
Sensory Sensitivities and Atypical Sensory Profiles

- Most frequent “psychiatric” diagnosis in youth with an ASD = phobias
- Most frequent phobias are to loud noises or specific noises (i.e. sirens)
- These are forms of a sensory abnormality
- Person is distressed and anxious in reaction to sensory input that people w/o these concerns would not find distressing
- Sometimes we cannot understand why an individual becomes self-injurious or aggressive when they are reacting to distressing sensory experiences
Sound Sensitivity

- distracted by sounds not normally noticed by others; i.e., humming of lights or refrigerators, fans, heaters, or clocks ticking
- fearful of the sound of a flushing toilet (especially in public bathrooms), vacuum, hairdryer, squeaky shoes, or a dog barking
- distracted by loud or unexpected sounds
- Bothered-distracted by background environmental sounds; i.e., lawn mowing or outside construction
- frequently asks people to be quiet; i.e., stop making noise, talking, or singing
- runs away, cries, and/or covers ears with loud or unexpected sounds
- may refuse to go to movie theaters, parades, skating rinks, musical concerts etc.
- may decide whether they like certain people by the sound of their voice

Charlot, 2018
Anxiety > Externalizing Challenging Behaviors (CBs)

- Part of ASD profile or how you are hard-wired
- When in contexts that provoke responses
- Over time, learn to react to associated stimuli also
- How I control anxiety
- Caregivers see i.e. he does that when he can’t get his own way

Charlot, 2018
Goals of Using Sensory Modulation

- Individuals who are easily over aroused experience elevated *Autonomic Nervous System* arousal

- Relaxation exercises may help to reduce a tendency to over react when there are things that provoke states of heightened arousal

- Example approaches any of us might use to reduce heightened ANS:
  - Deep breathing
  - Physical exercise
  - Yoga
  - Using mental imagery
  - Listening to soothing music

Charlot, 2018
WHY LOWERING YOUR ANS AROUSAL LEVEL TAKES TIME

- Goal is to gradually develop a new “set point’
  - This takes time and practice
  - Runners are not able to do a marathon day 1 of training
- Using principles of exposure and response prevention or desensitization
- Being calm more of the time leads to being calm more of the time
- “Reinforce” (Strengthen) and clearly identify the things that you are trying to promote in whatever unique individual way that works for the unique individual child or adult

Charlot, 2018
Strategies: SOMETIMES LESS IS MORE

- Quiet spaces
- Not over decorated - "Minimalist "decor
  - Soft - low lighting, bean bags, thick soft rugs, soft blankets to roll up in
- Holiday light strings, lava lamps, glow sticks, battery powered candles
- Weighted stuffed animals, blankets, vests -
  - “tight tuck in”
- Scents
- Rocking chairs
- Soft music, noise cancelling headphones
- Lots of sensory toys or items - Koosh Koosh et al.
Why a daily “diet”? 

- What do you call relaxation, deep breathing when you ask an already very anxious person to engage in it? 

- HYPERVENTILATION 

Charlot, 2018
Simple but Helpful

- Avoid activities in loud crowded areas
- Avoid activities with too many people
- Allow lots of time when meeting new people
- Pair preferred people with new people
- Pair new people with fun pleasant things, things that are enjoyed
- Don’t wait only until already getting wound up “amped up”

Charlot, 2018
Anything that over time will help lower ANS arousal

► Done every day or multiple times daily
► Using same kinds of principles as in “desensitization’
► Re-setting your threshold for getting over excited
► Slowly raise the threshold
  ► Individualized exercise programs
    ► Adaptive Physical Education staff
  ► Walks
  ► Breathing exercises -
    ► Windmills, Bubbles if usual tactics do not work
  ► Use visuals to support learning

Charlot, 2018
Sensory Kits

- Portable
- Individualized
- Prevention
- Soothing
- Calming

Charlot, 2018