International Consortium of Autism Institutes

INTERNATIONAL AUTISM INSTITUTE

Autism: Making Sense of Sensory Needs

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Senses

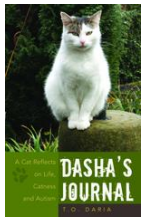
- Vision
- Hearing
- Tactility
- Olfaction
- Gustation
- Proprioception (incl. interoception)
- Vestibular system

32 senses (Murchie 1978): 5 categories:

- The radiation senses (incl. senses of radiation, electricity, magnetism)
- The feeling senses (incl. awareness of proximity to someone or something)
- The chemical senses (incl. appetite and humidity)
- The mental senses (incl. sense of danger, sexuality, sleep, a sense of humour, an aesthetic sense (appreciation of the arts, etc.), intuition)
- The spiritual senses (incl. conscience, the ability to experience ecstasy, religious bliss, feeling in unity with the cosmos)

Stimulus → Sensation → Interpretation → Comprehension

(Percept) *(Concept)*



- Blindness:

Recognition through touch → a book → I can read it (in Braille)

- Autism:

"When I pick up a book, I might turn the pages and sniff each page before looking at the pictures in it… Someone else with autism may tear a page or two… Another person with autism may totally ignore [it] because his perception would be directed towards some other aspect of environment" *(Tito)*

At present, sensory perceptual problems in autism are recognised but…

They are often oversimplified.

Hypersensitivities -

DSM-5 (2013)

- **B**. Restricted, repetitive patterns of behaviour, interests, or activities that should include at least two of the following:
- Stereotyped or repetitive speech, motor movements, or use of objects (such as simple motor stereotypies, echolalia, repetitive use of objects, etc.)
- Excessive adherence to routines, ritualized patterns of verbal and nonverbal behaviour, or excessive resistance to change (such as motoric rituals, insistence on same route or food, repetitive questioning or extreme distress at small changes)
- Highly restricted, fixated interests that are abnormal in intensity or focus (such as strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interests)
- Hyper-or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment (such as apparent indifference to pain/heat/cold), adverse response to specific sounds or textures, excessive smelling or touching of objects, fascination with lights or spinning objects.

Primacy

‘Sensory symptoms’ in early development can be detected much earlier than social and communication impairments

There is some evidence from research that does indicate that sensory perceptual differences may be among the first signs of autism in young children

- Pull away from social touch (Baranek 1999)
- Watching hands and fingers, and arm flapping (Volkmar et al. 1986)

Early ‘sensory symptoms’

- Hand-finger mannerisms, whole body mannerisms, unusual sensory interests *(Le Couteur et al. 1989; Lord et al. 1994)*
- Unusual reactions to vestibular tasks (Gepner et al. 1995; Kohen-Raz, Volkmar, Cohen 1992);
- Motor impairments (Harris 2017; Landa et al. 2017; Setoh et al. 2017)
- Frequent bilateral repetitive movements (arms, hands, fingers, lower limbs) (Purpura et al. 2017);
- Sensory and movement differences (Donnellan et al 2012)
- Low muscle tone (Serdarevic 2017)
- Put objects in their mouths more often;
- Need more cues before they look when someone calls their names
- Problems in attention and arousal;
- Orient less to visual information; *(Baranek 1999);*
- Atypical interest in visual stimuli, overexcitement when tickled, play limited to hard objects *(Gillberg et al. 1990)*
- Lack of responsiveness to certain sounds; hypersensitivity to certain foods; insensitivities to pain *(Hoshino et al. 1982);*
- Stereotyped behaviours, under- and overreaction to auditory stimuli, unusual postures and unstable visual attention
- Frequent ear infections *(Jeans et al. 2014)*

- The autistic ‘sensory’ symptoms observed during the first year seem to persist into the second year of life *(Adrien et al. 1992; 1993; Focarolli et al. 2016; Philpott-Rorinson et al. 2016).*
- Autistic toddlers and pre-school children display atypical sensorimotor behaviours at some point of their development *(Ermer & Dunn, 1998; Kientz & Dunn, 1997; Rapin, 1996).*

Sensory dysfunction or different sensory experiences?

- Not all the differences in perception are dysfunctional and sensory differences are not necessarily problems/difficulties.
- Some difficulties may be caused by environmental factors. If they are accommodated, this particular dysfunction would disappear.

‘Sensory theories’ of autism

Minicolumns in autism are smaller, more numerous and have an abnormal structure, so stimuli are no longer contained within them but rather overflow to adjacent units, thus creating an amplifier effect. Inhibitory fibres just do not cope with this flow.

- The inability/difficulty to ‘stop feeling the change’ – leading, in turn to overload and/or hypersensitivity

- Rubenstein & Merzenich (2003) *Increased ration of excitation/ inhibition in key neural systems*
- Casanova (2002; 2005) *Minicolumns in autism*

Markram et al. (2007): The Intense World Syndrome

The core neurological pathology in excessive neuronal information processing and storage in local circuits of the brain, which gives rise to hyperfunctioning of the most affected brain regions.

All features of autism (social interaction impairments, language and communication problems, cognitive functioning, repetitive behaviours, etc.) are rooted in sensory overload experienced by autistic individuals.

They perceive, feel and remember too much.

Excessive neuronal processing may make the world painfully intense when the neocortex is affected, and even aversive when the amygdala is affected (Markram et al. 2007)

Emotional hypersensitivity

- Emotions start as *sensory* feelings
- As most autistic individuals' senses work in 'hyper', and feelings start as sensations (either conscious or unconscious), it is no wonder that many autistic people are emotionally hypersensitive:
- Echoemotica

Filtering model: ‘Sensory gating deficit’

Gestalt perception (or ‘Sensory gating deficit’):

- The inability to distinguish between foreground and background information
- perception of the whole scene as a single entity with all the details perceived (but not processed!) simultaneously

- Neuropathology of cortical inhibitory interneurons *(Casanova 2002)*
- An imbalance of cortical excitation and inhibition *(Rubenstein & Merzenich 2003)*
- Filtering Model *(Bogdashina 2003; 2006)*
- The ‘Intense world syndrome’ *(Markram et al. 2007)*

Gestalt perception → Resistance to change/ Insistence on sameness

- Every situation is unique
- Any change destroys gestalt and brings confusion and fear
- On the other hand, Gestalt perception can account for strengths of autistic people's perception, too

Mental map

- "A mental map is a mental picture I form, which I expect to face in the process of events, so that I am not surprised or shocked by any sudden situation…
- I have a mental map of how things should happen around me. When they do not take place as expected, the anxiety is no less than any physical pain. It produces an amplified sensation throughout my gut."

Gestalt perception is reflected at higher levels, e.g.:

- Gestalt memory

- A Gestalt strategy in language acquisition:

-- Echolalia

-- Insistence on certain verbal routines/ Demanding the same verbal scenario

Gestalt → lack of generalisation

- The slightest change creates a new Gestalt - making ‘old behaviours’/skills non-applicable.

- Teach the child that the same object/ event/ situation can be in different ‘formats’

- Gestalt behaviours – rituals and routines

"All ritualistic behaviour is for reassurance and creating order in daily life. Autistic people count on their routines. They give structure to the day. Specific rituals involving getting dressed each morning, or preparing for a task, may be quite long and complicated. Often, eating also becomes a ritual. Certain foods are eaten in certain ways, using the same progressive steps.

Rituals are soothing and they do feel nice, they define areas of living." *(O'Neill)*

Gestalt perception – no filters

- Notices every tiny change in the environment *(visual)*
- Does not recognise a familiar environment if approached from a different direction *(visual)*
- Gets easily frustrated when trying to do something in a noisy, crowded room *(auditory)*
- Does not seem to understand the instructions if more than one person is talking *(auditory)*
- Is unable to distinguish between tactile stimuli of different intensity *(tactile)*
- Is unable to distinguish between strong and weak odours/tastes *(olfactory/gustatory)*
- Clumsy; moves stiffly (proprioception)
- Resists to change head position/movement (vestibular)

Gestalt perception: What we can do to help:

- We should find out which modality does not filter information and make the environment 'visually/auditorily, etc. simple'
- The next step would be to teach the person to 'break visual/ auditory, etc. picture' into meaningful units, i.e. teach them to recognise relevant features of objects and situations, while ignoring irrelevant ones.
- Structure and routine make understanding of everyday activities easier and provide feeling of safety and trust.
- Always communicate to the person beforehand, in a way he can understand (e.g. using verbal, visual or tactile means) what will be changed and why. Changes should be gradual, with his active participation.

Sensory overload

What to look for:

- Sudden outbursts of self-abuse/ meltdowns/ difficult behaviour
- Withdrawal
- Tires very easily, especially in noisy/bright places, or when standing

- Gets nauseated or vomits from excessive movements (swings, merry-go-rounds, cars, etc.)

Gestalt perception makes autistic individuals vulnerable to sensory/ information overload

Overload: What we can do to help:

- It is important to recognize the first signs of sensory overload. It is better to prevent it than to 'deal with the consequences'
- As soon as you notice early signs of coming sensory overload (which are different for different individuals), stop the activity and provide time and space to recover
- Teach the individual how to recognize the internal signs and ask for help or use different strategies (e.g., relaxation) to prevent the problem
- 'First Aid Kit' should be always at hand (sunglasses, ear plugs, squeezy toys, favourite objects, 'I need help' card, etc.)

- Adjust the environment to the needs of the individual in order to protect the person from painful stimuli and/or reduce the confusion caused by possible distortions

It is important to create a safe place at home/ school, etc. for them to function successfully

"It is impossible for children to learn if they are bombarded with confusing, irritating stimuli they are unable to screen out"
(Temple Grandin)

- Let them have a 'safety object' (a toy, a piece of string, etc.) when they go to unfamiliar places or face an unfamiliar situation.

Sensory overload (and Gestalt perception) can lead to several different routes and may result in:

- <u>System shutdown:</u>

If early in life – 'self-imposed sensory deprivation':

'When sensory stimulation became too intense, I was able to shut off my hearing and retreat into my own world… In pulling away, I may not have received stimulation that was required for normal development'
(Grandin)

→Leading to:

<u>Sensory agnosia</u> (difficulty interpreting a sense):

- Feels/acts blind/deaf, etc.
- Rituals
- Has difficulty in interpreting smells/tastes
- Seems not to know what his body is doing
- Becomes disoriented after a change in head position

Another possible scenario:

- If they continue to try to process all the information coming in, despite their inability to keep up with it, it may result in hypersensitivity and/or distortions, that eventually bring anxiety, confusion, frustration and stress, that, in turn, leads to tantrums and difficult behaviours

Gestalt perception may result in different experiences, compensatory strategies and perceptual styles:

- Fragmented perception
- Distorted perception
- Delayed processing
- Hypersensitivity, sensory intolerance
- Hyposensitivity
- Fluctuation of perception
- Fascination
- Monoprocessing
- Peripheral perception
- Etc.

Fragmentation may be felt in any sensory modality

- "You may observe the autistic person rubbing sandpaper on his bare arm, or banging his fingers sharply into a solid wooden dresser, then peering at them as if to say, 'Oh, hello, hand. So you do belong to me, then.' Sometimes the body feels fragmented, so it appears to be suspended or floating in pieces" (O'Neill)

- "There have been times during my lifetime that my senses were so messed up that my body felt unattached to my head and I could not ascertain where exactly my body was in relation to space…" *(Hawthorne)*

- "I very often hear fragments of each sentence, which my brain automatically pulls together to try to make sense of. By missing key words, however, I quite often do not get the real content of what is being said" *(Tammet)*

Other problems:

- Bilateral integration problems - when the person has difficulty coordinating the two sides of the body. They fail to develop side dominance.
- Prosopagnosia (Face-Blindness)

Prosopagnosia

Prosopagnosia may lead to:

- Social isolation
- Difficulty in understanding and expressing emotions

Face-blindness may co-occur with ASDs:

Prosopagnosia may be an essential symptom in ASD, perhaps a specific group of Asperger syndrome" *(Kracke 1994; Cygan et al. 2018)*

Fragmented perception: What to look for:

- Resists to any change
- Selects for attention minor aspects of objects in the environment instead of the whole scene (visual)
- Gets lost easily (visual)
- Does not recognise people in unfamiliar clothes, on photographs *(visual/prosopagnosia)*
- Complains about some parts of the clothes, smells of some pieces of food, etc. *(tactile, olfactory, etc.)*
- Is confused with the food he used to like *(olfactory)*
- Complains about limbs, parts of the body *(proprioceptive)*
- Resists new motor activities *(vestibular)*

Fragmentation: What we can do to help:

- Structure and routines make the environment predictable and easier to control
- Routines and rituals help to facilitate understanding of what is going to happen
- Introduce any change slowly and always explain beforehand what and why is going to change
- If a person is prosopagnostic, introduce yourself each time you see him. Wearing the same clothes and hairstyle facilitates recognition

Distortions: What to look for:

- Fears heights, stairs, escalators *(visual)*
- Has difficulty catching balls *(visual, proprioceptive)*
- Appears startled when being approached *(visual)*
- Compulsive repetitive hand, head or body movements that fluctuate between near and far
- Pronunciation problems *(visual)*
- Unable to distinguish between some sounds *(auditory)*
- Hits eyes/ears/nose/oneself *(visual/ auditory/ olfactory/ tactile)*
- Difficulty with hopping, jumping, skipping, riding a tricycle/bicycle *(proprioceptive)*
- Climbs high into a tree, jumps off tall fences, etc. *(vestibular)*

Delayed processing

- Response to visual/ auditory/ gustatory/ olfactory/ tactile stimuli is delayed
- Echolalia in monotonous, high-pitched, parrot-like voice
- Any experiences are perceived as new and unfamiliar, regardless of the number of times the person has experienced it
- Very poor at sports
- Seems to be oblivious to risks of heights, etc.
- Hold head upright, even when leaning or bending over

- Give them time to take in your question/ instruction and to work out their response. Beware that autistic individuals often require more time than others to shift their attention between stimuli of different modalities and they find it extremely difficult to follow rapidly changing social interactions.

- While remembering – they re-experience the event, thus making the past feel very present. The ‘past reality’ becomes the ‘present reality’, with a full package of the past emotional and physical experiences. This combination of ‘past-present’ experiences can bring a lot of confusion. The past ‘picture’ of experience should coincide with the ‘present one’, and any inevitable deviation from it brings anxiety, fear and panic.
- Sometimes a word, combination of sounds, certain patterns, movements, or smells may trigger the person to remember the situation that has been stored. If the triggers are connected with something unpleasant or painful that happened when the individual encountered the same stimuli for the first time, he may react with ‘challenging behaviours’.
- On the other hand, it may be of an advantage to a person with autism when it is used as a compensation for their inability to process information quickly and may respond ‘from memory’ when something is triggered.

Intensity with which the senses work

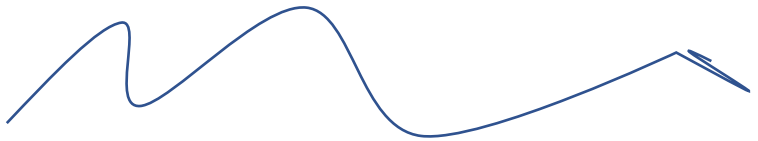
Hypersensitivity

- Identify which stimuli the person finds disturbing and either eliminate them (e.g., use natural lighting instead of fluorescent lights) or, if impossible, provide the person with ‘sensory aids’ (tinted glasses, earplugs, etc.)
- Desensitize the person to tolerate the stimuli via sensory diet
- Monitor a number of simultaneous stimuli; reduce irrelevant stimuli
- If possible, warn the person about fire alarms, bells, etc.

Hyposensitivity – Too dim, too quiet…

- Provide extrastimulation through the channels that work in ‘hypo’

Fluctuation



Fluctuation What to look for:

- Responds differently (pleasure – indifference – distress) to the same visual/auditory/olfactory/gustatory/tactile stimuli, movement activities (swings, slides, spinning, etc.)
- May have different muscle tone (low – high) *(Proprioception)*
- Pencil lines, letters, words, etc. are uneven (e.g., sometimes too tight, sometimes too faint) *(Proprioception)*

Scotopic Sensitivity Syndrome

1. Light sensitivity
2. Contrast and colour sensitivity
3. Poor print resolution
4. Restricted span of recognition
5. Attention deficit
6. Poor depth perception
7. Strain and fatigue

Sensory intolerance:

- Remember, what we think enjoyable (e.g., fireworks) may be fearful or overwhelming to an autistic individual
- Be aware of the colours and patterns of the clothes you are wearing, and of your perfume
- Always warn the person about the possibility of the stimulus he is fearful of and show the source of it
- Strategies to cope with light sensitivity are turning off any unnecessary lighting (esp. fluorescent lighting), using lamps rather than overhead lights, and tinted lenses

Sensory intolerance: What to look for:

- Squint or close eyes in bright light *(visual)*
- Gets easily frustrated/tired under fluorescent light *(visual)*
- Tries to destroy/ break objects producing sounds *(auditory)*
- Gets frustrated with certain colours/ sounds/ smells/ tastes/ movements or body postures
- Fears falling or height *(vestibular)*

Fascination: What to look for:

- Is fascinated with coloured and shiny objects, certain sounds, certain textures, tastes or smells *(Visual, auditory, tactile, taste, smell)*
- Is often engaged in complex ritualistic body movements, especially when frustrated or bored *(Proprioception)*
- Spins, jumps, rocks, etc., especially when frustrated or bored *(Vestibular)*

Fascination: What we can do to help:

- Make a list of pleasant stimuli for each individual. If you think the activities (behaviours) or materials the person uses for 'self-treatment' are inappropriate, identify their function and replace them with more appropriate ones.
- Use 'objects of fascination' in the 'case of emergency' – to calm the person down after a painful/stressful experience.
- Use special interests in teaching

The ability to *hypersense*

Sometimes ‘autistic experiences’ can be seen as ESP as those around them not only fail to see, hear, smell, or feel what some autistic individuals can, but also find it hard to imagine that such experiences are possible. E.g. – ‘feeling and seeing energy’

Adaptations and compensations

Perceptual styles:

- Monoprocessing
- Peripheral perception

- ‘Stims’

Monoprocessing: What to look for:

- Doesn't seem to see if listening/ smelling/ feeling, etc.
- Doesn't seem to hear if looking/ smelling/ feeling, etc.
- Doesn't seem to feel taste if looking/ listening/ smelling/feeling, etc.
- Doesn't seem to smell if seeing/hearing, etc.
- Doesn't seem to feel being touched if looking/ listening, etc.
- Fails to define the texture or location of touch
- Doesn't seem to know the position of the body in space/what the body is doing when looking at/ listening to something
- Doesn't seem to mind any movements when looking at/ listening to something

Monoprocessing:

- A person who monoprocesses may have problems with multiple stimuli. Find out which channel 'is open' at the moment and reduce all 'irrelevant stimuli'
- Always present information in the person's preferred modality. If you are not sure what it is or which channel is 'on' at the moment (in the case of fluctuation), use multisensory presentation and watch which modality 'works'. Remember, though, that they can switch channels.
- BUT: [Mono-processing – one sense in hyper, the rest – hypo] "When Iris has her focus on feeling, she is hypersensitive. Then she reacts by jumping high the minute somebody touches her. It burns like fire when something touches her skin. The gentler and more careful the touch the more it burns. It is terribly unpleasant. [-hypertactile] If the focus is not on feeling she doesn't feel anything, [hypotactile]

Peripheral perception:

What to look for:

- Avoids direct eye contact
- Reacts to instructions better when they are 'addressed to the wall'
- Can tolerate only 'instrumental' (not 'social') touch
- Avoids direct smell/taste
- A very careful eater
- Has difficulty in imitating movements
- Avoids balancing activities

What we can do to help:

- Never force eye contact
- Do not approach the person directly in his hypersensitive modalities. When hypersensitivity of the affected sensory channel is addressed and lessened, the direct perception becomes easier

Compensating for unreliable sense by other senses

- *One sense is never enough*

<u>What to look for:</u>

- Smells, licks, touches, or taps objects
- Looks for the source of the sound
- Inspects food before eating
- Watches the feet while walking
- Watches the hands while doing something
- Avoids climbing, jumping, walking on uneven ground

- <u>What we can do to help</u>:

❖It is important to let the individuals use the sensory modality they prefer to 'check' their perception.

❖With appropriate treatment and environmental adjustments to decrease hypersensitivities they gradually learn to use their sense organs properly – eyes to see, ears to listen, etc.

Functions of stimming:

- Defensive: (to reduce pain or discomfort caused by hypersensitivity, fragmentation, overload, etc.)
- Self-stimulatory: (to improve the input in case of hyposensitivity, e.g.)
- Compensatory: (to interpret the environment in the case of 'unreliable' sensory information)
- Out of frustration: ('enough is enough!)
- Just pleasurable experiences (that help to withdraw from a confusing environment)

Disturbance by/ Intolerance to

- Certain stimuli
- Too many stimuli
- Any sudden unpredictable stimuli

ABC: Antecedent-Behaviour-Consequence

Challenging behaviours caused by either

- ❑‘present but invisible’ antecedent, or
- ❑‘past’ antecedent,
- ❑‘probable future’ antecedents, or
- ❑‘last straw’ antecedents
- ❑emotional state of carers/ teachers
- ❑some synaethetic experiences

Synaesthesia

Sensory synaesthesia can be of two types:

- Two-sensory synaesthesia (when stimulation of one modality triggers the perception in a second modality, in the absence of direct stimulation of this second modality)
- Multiple sensory synaesthesia

<u>Two-sensory synaesthesia:</u>

- Coloured-hearing (when a sound triggers the perception of a colour)
- Coloured-olfaction (when a smell triggers the perception of a colour)
- Coloured-tactility (when a touch triggers the perception of a colour)
- Coloured-gustation (when a taste triggers a colour)
- Tactile-hearing (when a sound triggers tactile sensation)
- Tactile-vision (when a sight triggers feeling shapes and textures pressing the skin)

Multiple sensory synaesthesia

- Coloured-numbers (when numbers are heard or read they are experienced as colours)
- Coloured-letters (when letters are heard or read they are experienced as colours)
- Shaped-numbers (when numbers are heard or read they are experienced as shapes)

Synaesthesia

- One of the most common features of synaesthetes is their superior memory
- Synaesthetes have uneven cognitive skills
- Most synaesthetes do not complain of their condition because for them it is their normal perception of the world. However, it is true if synaesthesia is unidirectional
- In the case of ‘two-ways’ synaesthesia (when, e.g., a person not only sees colours when he hears sounds, but also hears sounds whenever he sees colours) it is often overwhelming
- Sensations can be overwhelming

Cognitive/ Conceptual synaesthesia

Synaesthesia

- Learning disabilities seem more common in synaesthetes, however, the actual incidence of autism among synaesthetes is not known at present
- Reported low incidence of synaesthesia in autism can be accounted for by the fact that it is not easily detected in the autistic population:

  - Communication problems (even verbal individuals have difficulties in expressing their experiences)

  - Even non-autistic synaesthetes find it difficult to realize that they experience the world differently and it might be hard for them to imagine that others cannot, say, hear sounds while seeing colours

Synaesthesia: What to look for:

Vision:

- Covers/rubs/hits/blinks eyes in response to a sound/ taste/ smell/ touch
- Complains about (is frustrated with) the 'wrong' colours of letters/numbers, etc. written on coloured blocks

Hearing:

- Covers/hits ears in response to a visual stimuli/ taste/ smell/ touch/ texture
- Complains about (is frustrated with) a sound in response to colours/ textures/ scent/ touch

Taste:

- Makes swallow movements in response to a visual/ auditory stimuli, etc.
- Complains about (is frustrated with) taste in response to visual, auditory etc. stimuli

Smell:

- Covers/rubs/hits, etc. nose in response to a visual/ auditory, etc. stimulus

Tactility:

- Complains about (is frustrated with):
  - feeling colours/sounds, etc. while being touched
  - feeling being touched when being looked at
  -backache/heat/cold in bright/crowded places

Proprioception/Vestibular:

- Involuntary movements/postures of the body in response to a visual/auditory, etc. stimulus

- It is useful to see synaesthesia as a distinct cognitive style.
- Seeing sounds/words/numbers is colours, feeling them as textures, etc. help them to remember information
- Often their secondary perceptions are much more vivid and vibrant than the primary ones; so they provide additional cues to retrieve the information from memory
- The combination of a sensory imagery and a verbal thinking style provides original ways to solve problems

Autism Sensory Spectrum

- Temple Grandin: “There is a continuum of sensory processing problems for most autistic people, which goes from fractured, disjointed images at one end to a slight abnormality at the other.”

- “Autism never manifests itself in the same way twice, as there are many types of it” *(O’Neill)*
- Individuals with autism differ from one another as their non-autistic peers do. All autistic people have their own individual personality

Numerous individual differences indicating possible subtypes based on different patterns of sensory perceptual problems have been reported (e.g., Greenspan and Wielder 1997; Stone and Hogan 1993; Lane et al. 2014)

Implications for:

- Diagnosis
- Research
- Clinical assessment
- Treatment
- Education

IQ and Autism

- What is intelligence?
- What do we measure with IQ tests?

Autistic Intelligence

"I could tell from the change in the pattern of a footstep or the slightest change in the sound of a vehicle pulling up outside the feel of the occurrences about to happen. I could tell in the shifting pattern of movements… the range of possibilities that would follow. I could tell from the sound with which a glass was put down, in response to the sound of another glass being put down, the basic feel… of the interaction that would take place" *(Williams)*

Making sense of ‘sensory needs’: Why? What? How?

- Sensory differences → different perceptual/ cognitive/ linguistic/ cultural worlds
- Before considering ‘what to do?’ and ‘how to do it?’ we have to understand ‘why?’ (they behave the way they do) and ‘how?’ (they perceive their environment)
- Each child’s sensory needs are very specific – No two autistic individuals have exactly the same SPP
- To make necessary accommodations to the environment we should know each child’s sensory needs
- Development of effective communication – based on the child’s perceptual style and inner language

Interaction

- Establish:
  - The most reliable channel for the child. It will help us to 'see' the environment from the child's point of view and 'speak' the same language
  - The most unreliable channel(s) and ways the child copes with the problem(s) (the child's coping strategies)
  - It is important to let the individuals use the sensory modality they prefer to 'check' their perception.
  - Address the problems:
    - either follow the child's lead (if appropriate), or introduce different coping strategies & 'sensory aids'
    - Desensitize the child (using 'sensory techniques and therapies)

Reliable/unreliable channels

- Smells, licks, touches, or taps objects
- Looks for the source of the sound
- Inspects food before eating
- Watches the feet while walking
- Watches the hands while doing something
- Avoids climbing, jumping, walking on uneven ground

‘Sensory’ therapies:

- Tinted lenses
- Prism lenses
- Oculomotor exercises
- AIT:
  - Tomatis method
  - Berard’s method
- ‘Hug-machine’
- Weighted vests, blankets
- Etc.
- ‘Sensory diets’

Be careful with SI exercises

- Their reactions and actions are logical and rational because they are dictated by their ‘realities’ which are very different from a ‘normal reality’.
- **Work with autism, not against it**
- Before you start teaching autistic children – learn about the way they perceive the world and themselves

Olga Bogdashina:

- “Sensory Perceptual Issues in Autism and Asperger Syndrome”
- “Communication Issues in Autism and Asperger Syndrome”
- “Theory of Mind and the Triad of Perspectives on Autism and Asperger Syndrome”
- “Autism and the Edges of the Known World”
- “Autism and Spirituality”

T.O. Daria:

- “Dasha’s Journal: A Cat reflects on life, catness and autism”