Behind the Behavior:
Understanding Our Riders With ASD
Autism: “See the World Through My Eyes”

In order to better understand the behaviors of individuals with Autism, it is imperative that we understand how their brain processes sensory information. This is a hinge pin in establishing a common ground for building a relationship through communication.
Autism Defined

The American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders (aka; DSM-IV 2004) identifies autism disorder using the following criteria: severe qualitative impairment in social interactions and verbal and non-verbal communication, with repetitive and stereotyped patterns of behaviors, interests, or activities.
The Spectrum

- Autism is referred to as a Spectrum Disorder because it manifests itself differently in each individual. Autism falls under the umbrella of Pervasive Developmental Disorder and the characteristics range along a continuum in five areas: social skills, communication skills, restrictive/repetitive behaviors and interests, sensory responses, and cognitive abilities.

- Individuals on the Spectrum present within a range of abilities from low cognition, non-verbal, to highly verbal with above average cognition. Thus, the term that most accurately describes this complex phenomenon is *autism spectrum disorder*. 
Current Prevelance

1 out of every 88 children in the United States has Autism
Autistic Processing

Individuals on the autism spectrum may display behaviors we perceive to be as disruptive or asocial and, in fact, they are if the consequences result in harm to themselves, others, or general alienation in social contexts.

It is important for that reason to have a basic understanding of their neurology.
THEORY OF UNDERCONNECTIVITY

Replicated studies suggest that the deficits in autism may not be found in a single structure in the brain, but rather in the wiring of the neural networks that connect the different parts of the brain together. This has led to a theory of autism called “functional underconnectivity”, which hypothesis that brain regions are not linked to each other, causing them to be functionally out of sync.
THEORY OF UNDERCONNECTIVITY

Researchers from University of Washington in 2007 tested the hypothesis of underconnectivity by recording in real time the electrical signals that travel from one part of the brain to another. Results revealed that brain regions in autistic individuals that were far apart did not “talk” to each other as typical brains did.

Our most complex cognitive and executive functions, such as perception, attention, and learning and memory require the coordinated function of brain activity.
Strained Circuits

Underconnectivity Theory of Autism

Neurotypical Connectivity

Frontal-posterior bandwidth limitations

Difficulty with thinking tasks that require frontal participation

- Social tasks, language processing
- Enhanced visual thinking
Fusiform Face Area; Visual Facial Recognition

Healthy Control vs Autism FFA activation

Healthy Control  Person with Autism

Notes.
1. Areas in red show where brain areas that are significantly more active during perception of faces; areas in blue show where brain was more active during perception of nonface objects.
2. The right side of the brain is shown on the left side of the image, as if you were looking at the person face on.
Mono Chanel

An individual with autism may easily be over stimulated by auditory information if their brain is focused on processing visual information, or vice versa. This may easily apply to any of the other senses. If the theory of underconnectivity holds true, the individual is processing in “mono channel”; mono hearing, mono visual, mono touch, mono smelling, mono taste. In other words, disruptive behaviors can occur from an overload of conflicting sensory information by not being able to effectively process all stimuli simultaneously.
OVERSTIMULATION OF THE SENSES

If the theory of underconnectivity holds true, an analogy of brain function of the individual with autism is similar to an overloaded circuit of the senses. The sensations of light, sound, smell, touch, or even taste can be heightened to such a level that the individual experiences the feeling of being overwhelmed and out of control until their brain completes the function of processing the overloaded neurological circuit.
Temple Grandin: Teaching ASD Children and Adults

• “Some children and adults cannot process visual and auditory input at the same time. They are mono channel. They cannot see and hear at the same time. They should not be asked to look and listen at the same time. They should be given either a visual task or an auditory task. Their immature nervous system is not able to process simultaneous visual and auditory input”.

• “In older non-verbal children and adults touch is their most reliable sense. They can learn their letters by letting them feel plastic letters”.

• “Some autistic children do not know that speech is used for communication. If the child asks for a cup, give him a cup. If the child asks for a plate but wants a cup, give him the plate. The individual needs to learn that when he says words, concrete things happen. It is easier for an individual with autism to learn that their words are wrong if the incorrect word resulted in the incorrect object”.

• “Children who have difficulty understanding speech have a hard time hearing many consonant sounds such as “D” in dog and “L” in log. Even though the child may have passed a pure tone hearing test, he may still have difficulty hearing hard consonants. Children who talk in vowel sounds are not hearing consonants”.
Additional Triggers That May Cause Overstimulation

• Level of noise, sight, touch, smell, movement or other forms of stimulation might be upsetting to the individual
• Introduction of new experience
• Sensitivity to light like a bright day
• Heat or cold of the day causes discomfort
• Overload of verbal information
• Pain or illness
• Not enough sleep; tiredness
• Hunger, thirst, or need to restroom
• Waiting or lack of structure
• Avoidance of new situation
• Breaks in routine
Strategies That Lead to Enhanced Communication and Cooperation
Developing Goals and Strategies for Success

• Know the families and caregivers; they know their children in ways we do not have the same experience or opportunities to understand their child’s behaviors, idiosyncrasies, and preferences. Perceive their information as golden.
THE HAPPY RIDER

- Always consider safety of Rider first; if child is in a state of “meltdown”, remove from horse but continue lesson on alternative plan. If able, spend moments after touching or smelling horse; this may only last moments but may allow child to process and de-escalate.
- Ignore, or do not respond verbally to overt, disruptive behavior. Redirect tactically and use non-verbal cues to replace behavior with positive choice.
- Use distraction as a temporary crisis tool; return to task or modify task to support the reinforcement of positive behavior.
- Allow individual to make successful choices to reinforce self-esteem and sense of control.
More Strategies

• The Indiana Resource Center for Autism (IIRCA) and Indiana’s Autism Leadership Network offer several tips for working with students on the autism spectrum.

• Approach students quietly from the side to avoid startling them. Their peripheral vision may be better and it gives them time to process information that tells them you are coming toward them. Once they are startled, it can be difficult for students to calm themselves.
Non-Verbal/Low Verbal/Low Cognition Individuals on the Spectrum: Strategies for Intervention

• Use a calm, even tone of voice.
• Visual supports are beneficial, even after the child no longer seems to “need” them.
• Remember not to take behaviors personally, even when the child has a perfect knack for targeting your most vulnerable attribute.
• Children on the spectrum often have poor social skills. Insert naturally occurring lessons into the day as they arise.
• Use of applied behavior analysis (ABA); positively reinforce and shape positive behaviors by not responding to inappropriate behavior or responses from the child. Avoid negotiation.
Strategies continued:

• Use non-verbal communication (e.g., gestures) when you can. For example point to the location you wish the child to be, put your finger to your lips to remind him/her to stop talking, or give a thumbs up when he/she is doing well.

• Pre-teach new concepts so students can re-hear them. This promotes success when topics have been rehearsed.

• Give the student ample time to respond BEFORE you repeat instructions.

• Use planning and structure in activities and plan ahead for “down time”.
Strategies continued:

• If there is a schedule, follow it. Prepare for any upcoming variations to reduce anxiety in anticipation of the change.
• Forewarn a student when an activity is about to end, even if he/she is using a timer.
• Educate students using their knowledge, interests, and fixations.
• Stay in close contact with family members and physicians about what is working and what is not, especially when students are on medications.
Strategies continued:

• When you are feeling overwhelmed by a situation, surround yourself with a team of people whom you can brainstorm.

• No matter what the age of the individual, teaching specific procedures and skills and then fading support is essential for this to happen.

• Most importantly, enjoy working with these students! They have many and gifts talents. BUILDING A STRONG AND POSITIVE RAPPORT MAY BE YOUR MOST EFFECTIVE TOOL!
Verbal and Non-Verbal Communication

- USE NON-VERBAL COMMUNICATION (E.G., GESTURES) WHEN YOU CAN. For example, point to the location where you wish the child to be, put your finger to your lips to remind him/her to stop talking, or give a thumbs up when s/he is doing well.
- Use literal, succinct and direct instructions. “First, put your coat in the closet, and then come to class.” Avoid idiomatic phrases or sarcasm that the student may not understand.
Patience and Planning

• Use a calm, even tone of voice. Excited adults yield excited students. Practice your poker face.
• Remember not to take behaviors personally, even when the child has a perfect knack for targeting your most vulnerable attribute.
• Give the student ample time to respond BEFORE you repeat instructions.
• If there is a given schedule, follow it. Prepare for any upcoming variations. Prepare in a manner not to enhance anxiety in anticipation of the change.
Asperger’s syndrome, also called Asperger’s disorder, is a type of pervasive developmental disorder (PDD). Pervasive developmental disorders are a group of conditions that involve delays in the development of many basic skills, most notably the ability to socialize with others, to communicate, and to use imagination. Children with Asperger’s syndrome typically exhibit social awkwardness and an all absorbing interest in specific topics.

The symptoms of Asperger’s syndrome can range from mild to severe.

Individuals with Asperger’s Syndrome are generally highly verbal and are characterized by behaviors such as being easily distractible, tangential to topics of discussion, and very literal.
Symptoms of Asperger’s Syndrome

**Problems with social skills:** Children with Asperger’s syndrome generally have difficulty interacting with others and are often awkward in social situations. They often engage in long winded, one sided conversations, without noticing if the listener is listening or trying to change the subject.

**Eccentric or repetitive behaviors:** Children with this condition may develop odd, repetitive movements such as hand wringing or finger twisting.

**Unusual preoccupation or rituals:** A child with Asperger’s syndrome may develop rituals that he or she refuses to alter, such as getting dressed in a specific order.

**Communication difficulties:** People with Asperger’s syndrome often have poor eye contact when speaking with someone, have trouble using body language or understanding that of others, understanding humor or language in context. Individuals with Asperger’s may present with “flat”, monotone voice.

**Limited range of interest:** Showing an intense obsession with one or two specific, narrow subjects.

**Coordination problems:** Children with Asperger’s syndrome may move clumsily, with poor coordination.

**Skilled or talented:** Many children with Asperger’s syndrome are exceptionally talented or skilled in a particular area, such as Math or Music.
Interventions for Asperger’s Syndrome

Behavioral Interventions: Teaching social skills by modeling/role playing and age appropriate social stories. Also, utilize “real life” or television shows to teach valuable social skills.

- Enroll child in group activities and pursuits. When selecting activities, consider the child’s interests and abilities.
- Continually reinforce social information. Many social skills deficits are caused by lack of social information (e.g., all odd numbers are on one side of the street, mail is delivered only once a day, etc.) View every car ride or trip to the store as a “classroom” for social information.
- Establish reward systems to reinforce and recognize appropriate social behavior.
- Work on one behavior or social skill at a time. This results in less confusion and increased responsiveness to intervention.
- Teach empathy. Encourage the child to be more understanding of the feelings of others.
- Set limits when child monopolizes conversation or abruptly shifts topics; redirect child back to topic.
- Provide the child with choices when possible. This increases the child’s ownership of the task or activity.
- Explain the rationale and importance of providing periodic eye contact; compare it to a hand shake.
- Distinguish the difference between behaviors that are characteristic of Asperger’s syndrome and simply bad behavior.
All individuals with ASD benefit from the reinforcement of non-verbal communication skills. The horse communicates non-verbally and is a segue to increasing the individuals’ understanding and use of body language necessary to establish control when riding.

Approximately 80% of all communication is non-verbal.
VARY COMMUNICATION TO FIT THE INDIVIDUAL

Considering that autism is a spectrum disorder, it is equally important to adjust your communication to the specific communication needs of the individual.

While reinforcement of non-verbal cues is a crucial element, this does not mean verbal language is not important. Keep verbal language concise with all. Verbal language is very necessary to establish relationship and socialization.

Keep in mind, the riding experience must be fun, even while the rider learns the nuances of the horse.
Celebrate the Difference

- Individuals with autism see the world in little pieces and then create the whole picture; neurotypicals process the whole and then break it down into the smaller parts because our processing works differently. There’s room and function in the world for both to learn from each other.
It’s All About Perspectives

- Understand the perspectives of the individual from a neurological point of view.
- Spend time with a student before making programming judgments. Listen to and observe the student with input from family members, teachers/therapists or other involved staff before commenting.
- Forewarn a student when an activity is about to end.
- If a lesson goes astray, shift YOUR PERSPECTIVES and EXPECTATIONS to what the child is focusing on in order to teach in the moment and re-establish joint attention.
- Enjoy the new view!