

CHAPTER 2

BASIC NEUROSCIENCE OF AUTISM

WHY IS AUTISM SO HARD TO UNDERSTAND?

1. Autism affects the brain in such diverse ways that Autistics & their loved ones are often overloaded with a flood of information, much of which does not appear to actually apply to them because no Autistic has every single issue that has been attributed to Autism. This is why trying to understand Autism solely by its seemingly unrelated outward manifestations is a futile endeavor. Instead, we need to start off by laying a neurological foundation that will allow us to identify the common denominators of all of its outward manifestations. This may allow us to improve our quality of life by...
 - a. ...developing strategies that can minimize the outward manifestations brought on by the underlying neurological differences.
 - b. ...explain Autism to those who we are struggling with in a way that does not sound like we are just making excuses.
2. An in depth study of Autism is beyond the comprehension level of the average non-professionals. Furthermore, even the professionals who work with Autistics everyday have a hard time comprehending the information produced by other professionals of different professions and specialties who work with totally different aspects of Autistics and Autism.

The solution seems obvious to me, all of the vast knowledge that the professional have accumulated on the subject of Autism needs to be translated from "Professional English" into "Common English." After all, Autistics cannot self-advocate, and their loved ones cannot advocate for the Autistic, unless they possess basic knowledge about Autism and are able to communicate that knowledge. Furthermore, they cannot understand this knowledge if the presenter is speaking in a language that is foreign to them.

3. Autistics, who have the ability to express themselves effectively, are not being given the opportunity to contribute fully to the dialog about Autism. This includes them being denied the opportunity to have a say in how...
 - a. ...Autism is defined.
 - b. ...Autistic behavior is interpreted.
 - c. ...the struggles Autistics face are handled.
 - d. ...money that is given to the Autism community is spent.

WHY IS THERE SO LITTLE UNDERSTANDING ABOUT THE BASICS OF AUTISTIC NEUROLOGY? (MY THEORIES)

1. The majority of those whom I have talked to assume that this subject cannot be simplified enough for them to understand. However, Dr. Woodruff, a neurologist with a family history of autism, went on a personal quest to learn more about autism by reviewing the recent medical literature on the subject. The knowledge that he has gained he has freely shared with the Autistic community and has been combined with our own understanding to produce a more comprehensive understanding of Autism. However, in spite of my efforts to bring this understanding to the attention of the Autism establishment, they have yet to ask him or myself to share these understandings with them.
2. The professional & Autism communities are so focused on the struggles, causes, cures & treatments that few see value in those who offer nothing more than root level insight. Let me make it clear that I am not inherently opposed discussing any issues that may improve the quality of life for Autistics and their loved ones. However, in spite of the fact that it is common knowledge that "Autistics are wired differently than non-Autistics," almost nobody that I have talked to can explain how we are different. It is my firm conviction that if you cannot explain the differences and how they affect the day-to-day lives of Autistics; you cannot help us Autistics reach our full potential.

Upon reading this, Dr. Woodruff responded:

“You may feel this way, but I think that the bar you are setting is unrealistic – if we have to wait for someone to provide a comprehensive understanding of the differences underlying autism before we can provide help, then autistic individuals will be waiting a long time for help!”

I am fully aware that there is still much to learn about Autism, especially at the neurological level. Nevertheless, the amount of knowledge that we currently have, when combined with wealth of the knowledge about Autism and human being in general from the other professions and specialties, have enabled me to answer just about any question anyone can ask me about why I am the way I am. Furthermore, I can also explain how to make the most of strengths I have and what I need to do to overcome my struggles.

Can I say for certain that we can provide such answers for every Autistic, no I cannot. However, everything that I have learned about Autism since I was diagnosed in 2009 convinces me that we already have a tremendous understanding, far more than it realizes. Nevertheless, it seems to me that the Autism community spends more time and energy lamenting what we do not know than disseminating what we do know. I intend to show just how many questions that I, a rank and file Autistic with no academic or professional credentials, can answer throughout this book because of the time I have spent combining all of the information that I have learned from all of the different resources available to everyone. This not only includes all of the professionals and specialist who work with Autistics and human beings in general, but also my fellow Autistics whose personal insights can provide answers that the professional will never be able to figure out without our help.

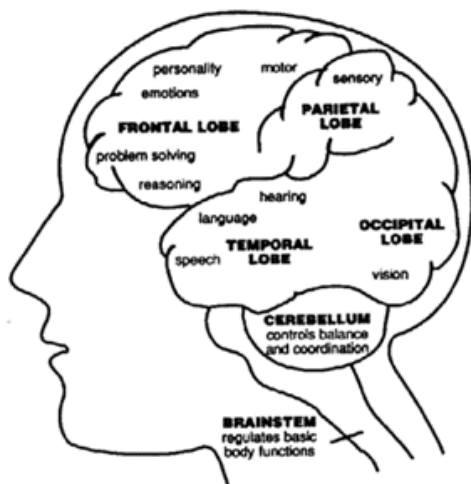
3. The subjective analysis of behavior, developmental progress and achievement is still the only method available for diagnosing individuals with Autism.

It is my firm belief that Autism will not be diagnosed with 100% accuracy until science provides us with a brain scan that can diagnose Autism as quickly, easily and accurately as other simple tests can diagnose diabetes, high blood pressure, etc. Unfortunately, Dr. Bryan K. Woodruff has assured me that no matter what press release you may read online or hear about on the news, science is still a long ways from being able to provide this.

DEFINITION OF AUTISM

AUTISM IS AN ATYPICAL NEUROLOGICAL CONNECTIVITY PARADOX RESULTING IN HEIGHTENED ACTIVITY IN SOME AREAS OF THE BRAIN AND DECREASED ACTIVITY IN OTHERS, COMPARED TO NON-AUTISTIC INDIVIDUALS.

The paradoxes of Autism can result in Autistics being extremely gifted in some areas, and extremely inept in others. The struggles Autistics deal with are often aggravated by people, who do not accept that Autism is a paradox, focusing solely on one aspect of Autism while refusing to acknowledge the paradoxical other. Some of the issues that Autistics face because of their atypical neurological connectivity include:



- ❖ Sensory Processing Issues
- ❖ Hyper Sensitivity to Stress and Emotions
- ❖ Stimming
- ❖ Seizures
- ❖ Delayed and/or Impaired Language Development
- ❖ Delayed and/or Impaired Social Development
- ❖ ADD/ADHD
- ❖ Tourette's Syndrome
- ❖ Impaired Executive Functioning
- ❖ Impaired motor skills
- ❖ Hyper Sensitivity to Medications

In addition, science also shows that the human brain is “plastic,” meaning that our brain is constantly changing, enabling it to adapt in both positive and negative ways. This provides us with a scientific basis to believe that some areas which Autistics struggle with may self-correct and/or be modifiable. I am not saying that Autistics will outgrow Autism, or that various therapies and other treatments are not needed

for Autistics. I am just saying that no one should ever hoist the white flag of surrender in theirs, nor anyone else's, personal lives.

OBSERVATIONS I HAVE ABOUT THE VIDEO

1. How did Carly gain the literacy skills that no one ever taught her?
2. Much of Carly's frustration, and probably a factor in her meltdowns, could be attributed to the fact that her alternative communication devices did not give her the ability to communicate her needs.
3. Everyone who was involved in Carly's life was so focused on her struggles that they had no idea about her capabilities. This ranged from not realizing that she understood what they were saying about her; to her ability to learn an effective method of self-expression that works for her.

AUTISM & SEIZURES

Depending upon whose research result you use, 1/5 to 1/3 of all Autistics (including myself) have some histories of seizures. Based on his extensive knowledge of human neurology, Dr. Woodruff is surprised that the rate of seizures amongst Autistics is so low. This suggests that there may be more Autistics having seizures that are not being recognized as such. It is therefore possible that many more Autistics have seizure activity that is not being recognized by themselves and those around them. This is probably due to the fact that when many people think of seizures, they think of the most overt type, "Generalized tonic-clonic" (commonly referred to as "Grand Mal.") However, there are numerous other types of seizures that are not nearly so obvious.

MIRROR NEURONS THEORY

"Neurons that fire when an animal acts or observes the same action of another thus coding the motor response. They were originally discovered in the premotor and parietal cortex of the monkey and studies have shown that neurons that have a similar mechanism are present in humans. Mirror neurons are theorized to be related to social cognition."

The National Center for Biotechnology Information, Year introduced: 2012
<http://www.ncbi.nlm.nih.gov/mesh/68059167>

The subject of Mirrored Neurons is one in which I must admit to needing to do an attitude check on before diving into. Whatever possible future scientific benefits might be gained from continued research into this subject, it is never the less a sore spot for me because of some of the conclusions that are being drawn today. Namely, proponents of this theory are looking for a scientific explanation for why Autistics lack social skills and empathy. After all, Dr. Rimland has proven that "Autism is a biological disorder, not an emotional illness." He has called for Autistics, and their loved ones, to "refuse psychotherapy, psychoanalysis and intensive counseling. These approaches are useless."

I will refute these misinterpretations of the behaviors of Autistics by non-Autistics in the Chapter 7, "ATYPICAL SOCIAL DEVELOPMENT OF AUTISTICS." I will do this by presenting information that Dr. Rimland denounced as irrelevant when trying to understand Autistics, then letting you decide where you stand on this issue of Autistic social development for yourselves. As far as the long term value that science can gain from the study of Mirror Neurons, that is a separate matter that I am not qualified to speak on.

After having critiqued this section, Dr. Woodruff commented:

"The only change I would make to the first line would be: 'Neurons that fire when an animal acts or observes the same action of another, thought to be instrumental in learning by imitation.'" In other words, it has not actually been proven as a fact that Mirrored Neurons are "instrumental in learning by imitation."

One thing that I have learned from Dr. Woodruff is that research press releases are a lot like dating and job interviews, you want to put your best foot forward. It is not that you are necessarily lying, but that you want to show your date or interviewer aspects of yourself that they want to see. Research press releases are similar and the goal of which often times has more to do with fundraising, so they can continue their research, then actually educating the public.

I do not say this in order to discourage anyone from reading such press releases, but to caution everyone to seek out the actual reports that are submitted for peer review before stating something as fact. My friendship/partnership with Dr. Woodruff enables me to benefit from his ability to not only obtain such reports, but to also be able to understand what they say and explain them to me at a level that I can understand.