MIND

I Have Asperger's, and My Mum Says My Brain Works Differently. How So?

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I have Asperger's syndrome, and my mum explained to me that my “brain works differently from everybody else's.” I'm curious as to how this is so. — Emer McHugh, Ireland

***Simon Baron-Cohen**, professor of developmental psychopathology at the University of Cambridge and director of the Autism Research Center, replies:*

Your mother is correct that the scientific evidence points to the brain of people with autism and Asperger's syndrome as being different but not necessarily "disordered." Studies have shown that the brain in autism develops differently, in terms of both structure and function, compared with more typical patterns of development, and that certain parts of the brain are larger or smaller in people who have autism compared with those who have a more typical brain.

One structural difference resides in the brain's corpus callosum, which connects the right and left hemispheres. Most studies show that the corpus callosum is smaller in certain sections in people with autism, which can limit connectivity among brain regions and help explain why people with autism have difficulty integrating complex ideas.

An example of a functional difference is in the activity of the ventromedial prefrontal cortex, which is typically active in tasks involving theory of mind—the ability to imagine other people's thoughts and feelings—but is underactive when people with autism perform such tasks.

The brain of those with autism also shows advantages. When some people with this condition are asked to complete detail-oriented tasks, such as finding a target shape in a design, they are quicker and more accurate. Additionally, those with autism generally exhibit less activity in the posterior parietal cortex,

involved in visual and spatial perception, which suggests that their brain is performing the task more efficiently.

Autism is just one manifestation of atypical neurodevelopment. There are hundreds of ways for the brain to wire itself, and each confers a different profile of strengths and weaknesses. This idea of neurodiversity most likely will be part of a changing way of thinking about autism.

Here is one illustration of the concept of neurodiversity: I am naturally left-handed, but as a four-year-old child in the 1960s I was forced by my primary school to write with my right hand because left-handedness was regarded as abnormal. Although this policy may have had no adverse consequences, we now accept that the 13 percent of boys and 8 percent of girls who are naturally left-handed are simply different, and we do not need to coerce people to all develop in the same way.

Some may try to place a value judgment on certain developmental profiles being “better” than others, but better is relative to the environment in which you find yourself. As one person with autism put it: “We are like freshwater fish in saltwater. Put us in freshwater, and we flourish. Put us in saltwater, and we struggle.”

If you are a left-handed child in a world that insists you should be right-handed, then left-handedness becomes a disability. Remove the requirement to be right-handed, and “magically” the disability vanishes. Extend this to those with autism, in a world that expects every child to be sociable and communicate through face-to-face chatting and “small talk,” and many people on the autism spectrum will be considered disabled. Remove this

expectation, and a significant proportion of the autism community can function extremely well.

This is why I prefer using the term “autism spectrum condition” (ASC), instead of the American Psychiatric Association's diagnostic term “autism spectrum disorder” (ASD). Although my term changes only one word, it represents an important shift. ASC carries the same message that people on the autism spectrum have a disability, with a biomedical basis, but it avoids the implication that it is the result of the brain being somehow damaged.

But we need to be clear: neurodiversity does not equate to relativism. Relativism says that all neurological profiles are equal, but we know that some of them mean the individual can cope well only in a specific environment, and such people will be at a disadvantage compared with those who can cope with a wider range of environments.

Autism, however, is perhaps more like visual or hearing impairment than left-handedness, in that some functions such as theory of mind are compromised. Given that such abilities make social relationships much easier, this deficit helps to explain why autism does lead to disability.

Let us assume that most of those with autism would prefer to have a typical theory of mind because it would make life easier for them. Yet when treatments come along, we need to ensure that they target only the features of autism that are disabling, leaving the positive facets—the excellent attention to detail, the ability to pursue a topic in enormous depth, the ability to quickly identify repeating patterns in a system—free to blossom.

Whether treatments exist or not, we should aspire to make the world more autism-friendly. Given that for every one person with autism there will be 99 without it, the risk will always exist that people with autism will feel they are on the margins. Being aware of their difficulties and adapting our behavior to be understanding and inclusive is half of the solution.