



Exploring Autism, Empathy, and Neurodiversity: 5 Questions for Psychologist Simon Baron-Cohen

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***Simon Baron-Cohen** is a professor of developmental psychopathology at the University of Cambridge and the director of the **Autism Research Centre** in Cambridge. He is the author of *Mindblindness* (MIT Press, 1995), *The Essential Difference: Men, Women and the Extreme Male Brain* (Penguin UK/Basic Books, 2003), and *Prenatal Testosterone in Mind* (MIT Press, 2005), as well as several books on autism. He also wrote a special report, titled "**The Autism Spectrum**," for Britannica's Year in Review 2009.*

*Much of Baron-Cohen's research centers around testing different theories of **autism**, exploring the neural, endocrine, and genetic basis for the condition. He is also investigating the relationship between autism and **empathy**—the ability to understand another person's feelings, desires, ideas, and actions. To learn more about his work and findings, Britannica science editor Kara Rogers asked Baron-Cohen several questions. His responses shed light on not only the relationship between autism spectrum conditions and empathy but also the implications of stigmatization and the*

"neurodiversity movement."

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Britannica: Autism spectrum conditions, from **Asperger syndrome** to classic autism, are similar in that all are characterized by deficits in the ability to interact socially and to communicate. Yet, some autistic individuals are described as "high-functioning" and others as "low-functioning." What distinguishes a high-functioning individual from a low-functioning individual, and how does cognitive function in autism spectrum conditions factor into associated deficits in the ability to interact socially?

Baron-Cohen: High vs. low functioning is a rather crude way to refer to the influence of **IQ**. Of course, IQ is not binary in this way, rather it is a continuous dimension. For this reason the planned changes in diagnostic classification will not be referring to high vs. low functioning but will be documenting IQ as an independent dimension to someone's autism diagnosis. Clearly, if you have autism plus below-average IQ this means that as well as the challenges of autism you also have **learning** difficulties.

Britannica: Much of your research on autism has focused on empathy and **emotion** recognition. How is the ability to empathize measured? Are autism spectrum conditions in general associated with empathy deficits?

Baron-Cohen: Empathy has several different components. The recognition component can be

measured using photographs and film-clips of facial expressions or audio clips of vocal intonation to see how well someone can recognize another person's emotions or mental state. The response component is harder to measure but can be tested using electrophysiological and **functional magnetic resonance imaging** methods whilst the person is observing someone's emotions.

Britannica: How might empathy difficulties manifest in social situations?

Baron-Cohen: Empathy difficulties are a parsimonious way of explaining a huge range of atypical behavior, and these include talking too loudly, standing too closely, dominating in a conversation, being disinterested in other viewpoints, trying to control others, not understanding others' intentions or motives or body language, saying inappropriate things (*faux pas*), being unaware of how others see you or think about you, being disinterested in conformity, not attending to others' faces, or not responding to hints.

Britannica: In what ways have your investigations of empathy and other behaviors affected by autism spectrum conditions influenced scientists' understanding of typical human social behavior?

Baron-Cohen: Our studies of empathy in autism have prompted us to explore the very nature of empathy in the typical population. Regarding autism as an extreme of an empathy dimension has prompted us to explore what influences one's position on that dimension, who ever you are. Factors that we have uncovered include your sex (females on average develop empathy quicker than males), activity of regions of the **brain** in the 'empathy circuit' (which includes the amygdala and ventromedial prefrontal cortex), hormonal factors (including foetal testosterone), and even **genes**. In addition to our biology, social factors clearly influence empathy too.

Britannica: Individuals with Asperger syndrome often use the term "neurotypical" to describe normal people, and in an effort to lessen the stigmatization associated with autism as a medical condition, the Asperger community has initiated the so-called neurodiversity movement. Can you briefly describe the neurodiversity movement and its implications on the diagnosis of autism spectrum conditions?

Baron-Cohen: The neurodiversity movement has been a very positive influence in reminding us that there is no single pathway in neurological development, but there are many ways to reach similar end-points. A simple illustration would be handedness, where we know that 12% of boys (and 8% of girls) are left-handed but end up being just as fluent in their motor skills as the majority (right-handers). This is an easy-to-identify example of neuro-atypicality, because it is observable. But the same logic applies to **language** development (some children talk as early as 12 months, others not until 24 months old, but with perfectly useful language in the end) and by implication, all other cognitive, affective, and motor skills.

Many of these differences are continuous dimensions (even handedness may be, and language certainly is) which further adds to the argument that one cannot draw a hard and fast distinction between normal and abnormal. Indeed, these very terms are arguably redundant if different subgroups in the population simply follow different developmental trajectories. In my theory, for example, we distinguish 5 different "brain types" and none is better or worse than another, as they all have their strengths and weaknesses. (These relate to the discrepancy between your empathy and your systemizing, where one might be mildly or significantly different to the other, in different directions).

The impact of dimensionalizing autism has been very positive, in terms of recognizing that we all have some autistic traits and that the difference between someone who needs a diagnosis and someone who does not is simply one of degree (they have more autistic traits) and their "fit" in society. (If their autistic traits are interfering with their ability to cope in their environment and causing suffering, then they need a diagnosis, but if they have a good fit between their autistic traits and their environment, they may not need a diagnosis).

Stigmatizing anyone, whether they have autism or any other characteristic, is wrong, since the

point about these labels is not to pick out the person in order to make their lives worse, but to help others understand their special needs and qualities.

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