



BOOK REVIEW

GEEKS, GENES, AND THE EVOLUTION OF ASPERGER SYNDROME

Dean Falk and Eve Penelope Schofield

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Asperger Syndrome (AS) has received much attention in recent years, as our society seeks to rework old dichotomous categories and replace them with an understanding of individual difference in all its domains. AS is an attractive candidate for such consideration, because as a syndrome that seems to marry language difficulties and social disease with unusual forms of intelligence, it seems like an exaggerated version of something to which many can relate, academics in particular. Thus, the 2013 decision to drop AS, as a separate category, from the DSM V and place it on the autism spectrum seems counter to a developing social understanding. Yet, from a strictly clinical point of the view, because language delay is not essential for the diagnosis of autism, AS represents high functioning autism (HFA), not a separate category.

Whatever the clinical definition (AS or HFA), recent first-person narratives by self-identified Aspies, such as the NYT bestseller, *Look Me in the Eye* by John Robinson, challenge the rest of us to reconsider notions of normal and abnormal, functional and dysfunctional. Yet, the question remains, what is the biological basis of AS and what does it say about the evolution of human mental capacities more generally.

GEEKS attempts to address this question by combining an evolutionary perspective from Dean Falk, a prominent paleoneurologist, with illustrative accounts of personal experience from her granddaughter Eve, a high functioning Aspie. As such, this is a book intended for a wide audience with an interest in science and human experience. It might be useful in undergraduate courses in anthropology, psychology, and human development as a way of enriching scientific learning with personal experience.

Falk starts by providing a summary of three basic evolutionary trends that characterize the human species; delayed development, the importance of infant-mother contact, and an early brain spurt. In the next three chapters she provides a basic overview of AS, including the need for comfort from sensory overload, the coexistence of social naiveté with a cognitive focus on classifying things, and the way in which the focus of obsessive classification seem to follow sex

typical differences (girls like animals; boys like trucks). At the end of each chapter, Eve tells us about her obsessions, how she experiences sensations and fears, the way she thinks in words and pictures, and how she found AS girls so much calmer than the boys. I was particularly struck by Eve's description of how the need to pay attention to sensations would divert her attention from the normal cues that ease social interaction with others.

The book also devotes a chapter to the worldwide incidence of AS as a backdrop to claims that the incidence of AS has been on the rise in the United States and, particularly, Silicon Valley. Falk's overview of the data makes it clear that a lack of adequate prevalence studies make such claims moot. Importantly for anthropologists, Falk considers prevalence rates in less developed countries where analytic thinking and individualism are less valued, suggesting that AS might stand out more there. Again, the evidence is not sufficient to the question. Falk calls for studies of AS in hunting/gathering societies before they disappear, as a way of getting at the universal nature of AS.

Those expecting the evolutionary explanation suggested in the title, and explored in Chapter 5, may be disappointed. For one thing, despite a high genetic loading (estimates of heritability anywhere from 0.6 to 0.9), the chapter makes clear that there are very few suspected candidate genes, including *AUT2*, *FOXP2*, and *OXTR* that can be explored for their functional consequences and/or evolutionary histories. In addition, specific traits associated with AS that might be a target for selection as well as social ecological selective pressures are not well specified, beyond the general traits of a tendency for classification, difficulties with social communication, and repetitive motions and interests.

In the last chapter, Falk floats the idea that autism may have been promoted by the rise of civilization in a way similar to the development of writing which led to the recycling of brain structures designed for object recognition to recognizing written characters. Especially, AS is selected for by the conditions of greater reliance on technology with attendant role specialization and skill differentiation that allow for technically competent, but socially naïve, individuals to not only survive, but also reproduce. That sounds plausible for Silicon Valley, so why not Mesopotamia?

It is an intriguing possibility, but it is not an evolutionary argument. The scenario needs to be more tightly drawn if it



is to do more than repeat the standard characterization of primitive and civilized societies. In small-scale societies, people depend on other people for survival. Thus, a la Robin Dunbar's social brain hypothesis (Dunbar, 1998), the importance of understanding and communicating with others. However, eccentricity is also tolerated because you need the efforts of everybody in the group to promote survival. Furthermore, it is important not to underestimate the complexity of hunting/gathering technology. Who among us can make an Inuit harpoon out of the materials available AND use it to bring home a seal? Under these conditions, as much as in Silicon Valley, AS individuals might do well-enough to survive and reproduce.

In sum, this well-written and relatively slim book serves as an intelligent primer on AS, including a first person per-

spective. However, it does not fulfill its promise to provide evolutionary insight nor does it provide a strong link between that insight and personal experience. Conversely, it serves as an illustration of the grandmother's hypothesis; grandchildren are worth understanding and supporting. Such natural concern may be the impetus for the eventual development of a deeper evolutionary perspective on AS.

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