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Social Communication Deficits in the General Population: How Far Out Does the Autism Spectrum Go?

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Two papers in this issue of the *Journal*^{1,2} examine ‘autistic traits’ and ‘social cognition,’ respectively, in the general population. Robinson and colleagues track the stability of ‘autistic traits’ between 7 and 13 years of age¹. Oliver and colleagues examine the association of conduct problems with diminished social awareness and pragmatic language².

These two articles can together be placed within the context of emerging epidemiological research on social and communication problems in the general population. As with many good epidemiological studies, they confirm some things that we thought we knew, and provide new findings that will lead to further research. The papers also raise interesting questions about what it fundamentally means to measure ‘traits’ of childhood clinical disorders and their relations to the disorders in a general population approach.

Both studies use data from a largely overlapping group of more than 6000 children from the Avon Longitudinal Study of Parents and Children (ALSPC). This large prospective study in the Avon area of Great Britain began collecting data from over 14,000 pregnant women in 1990-1992 and continues into the present. Analysis of the ALSPC dataset has now generated hundreds of individual papers. The current articles focus on analyses of caregiver behavioral ratings as children age from 4 or 7 years old to 13 years old.

The large, longitudinal ALSPC study allows researchers to identify relatively small changes over time. Despite this, Robinson and colleagues¹ found that caregiver ratings on the 10-item Social and Communication Disorders Checklist (SCDC)³ were remarkably consistent from 7 to 13 years old, both within the overall group and in various subgroups with higher degrees of social impairment. They draw parallels between these observations and studies in the autism population that show consistent impairment over time⁴. Further paralleling clinical studies of autism, which affects many more males than females, Robinson and colleagues¹ found consistently higher ratings of social communication problems in males than females across all time points.

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Oliver and colleagues² began from a different starting point: they calculated trajectories of caregiver-rated conduct problems from 4 to 13 years of age, with the most striking comparisons between children with early-onset conduct problems that persist over time and those with low conduct problems. With the ability to include and control for an impressive array of markers of developmental risk and comorbid symptoms, children with conduct problems were demonstrated to also show more problems with caregiver-rated social awareness based upon 4 items from the SCDC³. They found a similar relationship between conduct problems and caregiver ratings of pragmatic language skills on a 70-item questionnaire. The take-home message here would seem to be that children who don't understand others or communicate well with others are more likely to show problem behavior. Importantly, Oliver and colleagues² are careful not to suggest that kids with problem behavior are 'autism-like,' focusing specifically on 'social cognition' and 'pragmatic language' as the relevant dimensions under study, and in fact excluding children with documented autism spectrum diagnoses from analyses.

Coupled with their obvious strengths, these epidemiological studies also have inherent challenges. First, participants are hard to retain, and only 31-43% of the original participants were included in these studies, with particularly high attrition in the most impaired children¹. Second, objective clinical assessments aren't possible with such a large number of participants, forcing reliance on short parent rating scales with limited specificity³.

In addition to their primary findings, these papers, and a cluster of recent studies of 'autistic traits,' lead us wonder about the relationship between 'traits' of autism and the diagnosis of autism. This is a taxonomic question that merits examination of historical context.

For a half century following its initial description⁵, autism was thought to be a rare disorder. With ongoing revisions of the DSM we have seen broadened criteria for diagnosis of autism and 'autism-like' disorders, now grouped together as Pervasive Developmental Disorders (PDDs). In parallel, the rate of diagnosis has increased dramatically⁶. Numerous factors underlie this increase, including but not likely limited to shifts in criteria, increased awareness, and improved diagnostic instruments⁷. Given emerging findings of poor diagnostic agreement across clinicians, the various PDDs will likely be consolidated into a single Autism Spectrum Disorder (ASD) category in DSM-V.

Over the course of the surge in recognition and diagnosis of autism, clinicians familiar with the disorder began to expand study of autism-like 'traits' in people who don't share the full syndrome. Piven and others studied family members of children with ASD as having a 'broader autism phenotype'⁸. Constantino and Todd popularized the evaluation of 'autistic traits' in the general population, using parent or teacher questionnaire ratings in twin studies⁹. More recent studies in larger samples suggested a continuous distribution of 'autistic-like traits,' with evidence of separate heritability for social deficits, communication deficits, and repetitive behaviors¹⁰.

Each of these steps, from 'autism' to 'autism spectrum' to 'autistic traits', feels quite logical, but we now find ourselves in territory where a shared vocabulary may distort our thinking. This has happened before in child psychiatry. With each revolution in clinical appraisal, we tend to see a newly reified entity extend beyond its ideal borders. As young clinicians during the autism boom, we may be like those acolytes of Freud who saw the workings of the unconscious in the missteps of toddler speech. Or perhaps like those students of Kraepelin who diagnosed schizophrenia in the same children who would now be said to have autism. Each of these revolutions has been incredibly valuable, but each typically goes too far before receding to its eventual limits. Likewise, we as clinicians now see 'the Spectrum' everywhere, from family gatherings to faculty meetings, and sometimes even in the mirror.

Are there scientific reasons to think that we have gone too far in our conception of ‘autistic traits?’ We are at least out on a limb. The large epidemiological studies that characterize ‘autistic traits’ include only a small number of individuals with autism, and these individuals are frequently not clinically assessed as part of the studies, making direct assessment of symptom continuity and symptom clustering nearly impossible. It is not clear that continuous distribution of caregiver ratings of social communication means that these traits are just milder versions of the full syndrome. Within twin studies, at least, the numbers don’t easily add up. If each of the three trait domains is separately inherited¹⁰, how do we end up with so many people who are at the extreme in all three? Indeed, most research assessments of ‘autistic traits’ focus primarily on social traits, neglecting repetitive behavior. This is, we suppose, understandable, lest we start having to describe OCD as being ‘on the Autism Spectrum.’ But it highlights the need to stop identifying impairment in any of the three symptom domains as ‘autistic traits,’ and start instead naming the dimension that is affected. Clinically, this would translate to treatment (and funding for services) that is matched to impairments, rather than to a diagnostic checkbox.

To be clear, we are being deliberately provocative. While we think that it is worth questioning our vocabulary and its influence on our thinking, it is also crucial for us to understand the role of social aptitude in all of us. This may or may not give us specific insight into autism spectrum disorder, but it may identify a new domain for intervention in a larger group of children. Twenty years ago, these studies might have been described as evaluating the stability of ‘empathy’ over time, or its relationship with conduct problems. As articulated effectively by Oliver and colleagues, social cognition difficulties span multiple disorders, from autism to borderline personality disorder. We should therefore be careful to think about traits (and diagnoses) as specifically as possible, allowing the data, and not the language, to drive our thinking.

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