Heterogeneity Dissected

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Scientists and the general public now accept that autism is heterogenous, hence the notion of an *autism spectrum*. A person's language level, intelligence, severity of disability when present and medical and psychiatric conditions can all vary almost infinitely. Is this heterogeneity scientific fact, or does it simply speak to our inability to precisely identify the boundaries of autism?

In an article accepted in *Molecular Psychiatry*, we undertook an extensive investigation into the mechanisms that led to the very idea of an autism spectrum, which led us to favor the second interpretation. The criteria which currently define autism allows for the diagnosis of people who no longer resemble each other. This has important consequences where research is concerned (see: Autism Research : are we losing the signal? in our previous issue), but also in terms of service provision. For example, it is not beneficial to place a child into an autism classroom, if that child will not benefit from accommodations that are helpful to autistic pupils.

It is important to mention that some "good" heterogeneity probably exists in autism. For instance, consider the difference between a young autistic child who is non-verbal, and that same child as an adult who is now verbal. There are also real differences in severity, given that some autistic people have relatively good quality of life whilst others do not, despite the same level of autism symptoms. Another source of heterogeneity exists between autistic people who speak very early, those who speak very late and those who never become verbal. These 3 groups of people can, however, be very alike in many other ways.

However, our article largely emphasizes what we consider to be "bad" heterogeneity, which results from widening diagnostic criteria. If we find certain signs which may look like autism in a neurological or psychiatric condition, present criteria would effectively allow us to consider that the person presenting these signs is autistic. There is also an issue with clinicians diagnosing solely based on criteria and "checking boxes" such as : has few friends, follows routines etc., thereby diagnosing many more people as autistic than clinicians who *recognize* that the person before him *resembles* other autistic people they have previously met.

How can we address this situation in a way which continues to deepen our understand of autism? By considerably restricting the notion of an autism spectrum. For this, it will be necessary to reconstruct diagnostic criteria based on autistic people who present similarly and have autistic signs as recognized 70 years ago. Then, we will need to trust the expertise of clinicians who have met many autistic people. Indeed, research currently suggests that clinical expertise is more reliable in recognizing autism than diagnostic tools. Research will also have to shift its focus to autistic people as we have redefined them. We will also need to reintroduce differential diagnostic in autism criteria. For example, if a person with hyperactivity presents with social difficulties, it will first be necessary to determine whether the hyperactivity may be causing these problems, instead of diagnosing autism on top of hyperactivity. Lastly, we will maybe need to abandon the idea that "we are all a little autistic". Though there are some cases in which the line between autistic and non-autistic appears blurry, an autistic child in early life is fundamentally different from a child who is not autistic. Lastly, it would be wrong to assume that the consequence of such a movement would be a loss of services for people who lose their autism diagnosis. They will have access to services better adapted to their condition.