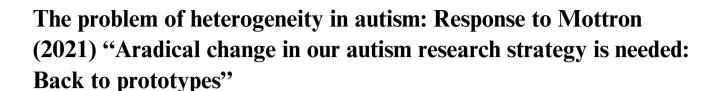
REPLY



Lynn Waterhouse D

Child Behavior Study, The College of New Jersey, Pennington Road, Ewing, New Jersey, USA

Correspondence

Lynn Waterhouse, The College of New Jersey, Pennington Road, Ewing, NJ 08628, USA. Email: lynwater@tcnj.edu

Mottron proposed "our ability to discover the mechanisms of autism" (2021, p. 1) would improve by replacing polythetic DSM 5 criteria with prototypical autism based on expert clinicians' personal autism categories, increasing specificity and reducing heterogeneity through limiting DSM 5 symptoms to a smaller set of homogeneous values. The "mechanisms of autism" are the genetic and neurobiological bases for autism pathophysiology. Genes and neurons are "natural kinds," the gold standard of science because of their explanatory powers (Franklin-Hall, 2015). Most research categories are established to discover natural kinds (Franklin-Hall, 2015). The mechanisms of autism have yet to be discovered because autism is a changing category, and all iterations of the autism diagnosis carry the baggage of immense heterogeneity (Mottron, 2021: Waterhouse & Gillberg, 2014). Mottron (2021) claimed research on prototypical autism samples would improve mechanism discovery (p. 6). However, Hyman (2021) asserted that no psychiatric diagnoses would discover natural kinds because all psychiatric diagnoses lack objective measures. For Hyman (2021), prototypical autism would not improve finding the mechanisms of autism because it relies on expert personal autism categories, which are not objective measures (Waterhouse & Gillberg, 2014). Moreover, the speed of autism identification (Mottron, 2021, p. 6) does not measure the relative objectivity of personal autism categories. Hyman (2021) noted the core problem: psychiatric diagnoses "are damaging to science" (p. 23) because they limit heterogeneity, but heterogeneity blocks constructing more objective "reductive, uniform" diagnostic categories (p. 26). All heterogeneity is scientifically meaningful, and heterogeneity can only be fully explained by dismantling

diagnostic categories (Hyman, 2021; Waterhouse & Gillberg, 2014). Autism heterogeneity may occur because nearly all cases are unique. One solution would be to advocate prototypical autism for treatment research because it relies on expert personal autism categories, but encourage experimental research that takes autism apart to explore heterogeneity in nondiagnostic groupings.

Check for updates

ORCID

Lynn Waterhouse https://orcid.org/0000-0001-8614-3456

REFERENCES

Franklin-Hall, L. R. (2015). Natural kinds as categorical bottlenecks. *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*, 172(4), 925–948. https://doi.org/10.1007/s11098-014-0326-8

Hyman, S. E. (2021). Psychiatric disorders: Grounded in human biology but not natural kinds. *Perspectives in Biology and Medicine*, 64(1), 6–28. https://doi.org/10.1353/pbm.2021.0002

Mottron, L. (2021). A radical change in our autism research strategy is needed: Back to prototypes. *Autism Research*, *XX*, XX–XX. https://doi.org/10.1002/aur.2494

Waterhouse, L., & Gillberg, C. (2014). Why autism must be taken apart. *Journal of Autism and Developmental Disorders*, 44(7), 1788–1792. https://doi.org/10.1007/s10803-013-2030-5

How to cite this article: Waterhouse, L. (2021). The problem of heterogeneity in autism: Response to Mottron (2021) "Aradical change in our autism research strategy is needed: Back to prototypes". *Autism Research*, 1. https://doi.org/10.1002/aur.2584