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REDEFINING AUTISM'S DEFICITS IN LIGHT OF A 4E PREDICTIVE FRAMEWORK

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Abstract :
As recent developments in autism research offer alternative explanations to the mainstream options, it can now be argued that the so-called cognitive deficits in the social domain associated with autism have been mischaracterized or, at least, oversimplified. We use a 4E (i.e., embodied, embedded, enactive and extended) conception of cognition understood within a predictive processing framework to address the notion of cognitive impairment in psychiatrics and autism. Predictive processing is an exciting development both in neuroscience and in cognitive science, in part because of what many see as its most interesting feature: it promises to offer a neurological foundation for 4E cognition. Predictive processing offers a way to see how brain and environment can be dynamically coupled, by supplying models of brain processes that neatly mesh into models of coupled brain-body-environment cognitive capacities. Brains are dynamically coupled to the body that houses them and the environment in which this body is embedded by having rich non-linear feedback interaction with its partners. Such a conception forces us to reassess what "cognitive deficit" means by integrating the environment not only in its usual sense (evo-developmental), but by understanding all cognitive performances as situated in environments (or fields of affordances) that shape and sustain them. Cognitive performance in any given cognitive task is the result of a dynamical process accomplished by a harmonized coupled system encompassing brain, body, world and even cultural resources. A cognitive deficit with respect to a given task is anything in the brain, the body or the environment that disrupts the proper accomplishment of the dynamical process underlying the performance of the task. We use the case of autism to show that certain socially constructed environments (i.e., cultural niches) can generate various cognitive deficits because of inequities in their construction. We adopt the HIPPEA model according to which autistic cognitive systems are characterised by lower differentiation between signal and noise (compared to neurotypical cognitive systems), which can lead to the underemphasizing of the context-dependent nature of some prediction errors. A crucial explanatory strategy of HIPPEA rests on a 4E conception of cognition. It explains the repetitive behaviours as an embodied strategy to deal with prediction errors (called active inference) and rigid adherence to routines as a process of niche construction. The explanation of the social deficits offered by HIPPEA also rests on niche construction: social situations, which are mostly dominated by neurotypicals, are extremely complex, permeated by contextual and volatile information, which makes them difficult to manage for a system whose priors and predictions are precisely attuned to specific situations (i.e., autistic cognitive systems). Autism's social deficits are thus a prime example of externalist deficits. Because of the adoption of more traditional views on cognition (i.e., internalist views), these deficits are considered to be individual and internal impairments, or even pathologies, leading to various inequities, namely epistemic injustices. These injustices, hermeneutic and testimonial, have stigmatizing consequences in neurodiverse people's daily lives, but they also feed back into research on autism, thereby making the "deficits" appear based on individual shortcomings.