

Precision Psychiatry—Yes, but Precisely What?

To the Editor In a recent Viewpoint, Stein and Smoller¹ stress the need for a paradigm shift in psychiatry, acknowledging the crisis in the field. We could not agree more. Drawing from the example of cardiovascular disease, they propose that “...genomic medicine [will be] the tip of the spear for the coming advances in precision psychiatry”¹ and lead to the much-awaited paradigm shift. Here, we could not disagree more.

While we take no issue with the premise that genomic medicine may lead to advances in psychiatry, we suggest the authors’ view perpetuates current reductive explanatory approaches and, as such, cannot be considered a paradigm shift. We believe this explanatory reductionism is precisely what has led to psychiatry’s current conceptual crisis.² To achieve a true paradigm shift, precision psychiatry, as currently conceived, must be complemented with a view that integrates multilevel explanatory models with cross-level dynamics and situates individuals’ illness experience within a social context.³

Precision psychiatry follows precision medicine approaches in oncology and cardiovascular disease that consider socioenvironmental factors but explain disorders in terms of lower-level biological mechanisms. It seems much less likely that such lower-level explanations will suffice for understanding and treating mental disorders. The limitations of such low-level explanations are evident in the failure of neuroscience to identify distinctive pathophysiologic mechanisms for most mental disorders. This may reflect the central role of symptom networks in psychopathology,⁴ the dynamics of brain-environment interactions across development, and the importance of social processes in differential susceptibility and recovery. A common element in all these areas of research is the role of cognitive processes involving expectations, active

inference, and meaning making. Elucidating how networks of symptoms develop requires attention to individuals' expectations and illness narratives, which are shaped by life experiences in a social and cultural context. This meaning-centered level of explanation is not secondary to lower-level biological mechanisms but interacts with them in crucial ways. Mapping interacting loops across levels of explanations (including mechanisms of epigenetics and neuroplasticity) could give us a more integrative understanding of the causes and course of mental disorders, leading to more precise diagnostics, therapeutics, and prevention.

While precision psychiatry is developing tools to work with large data sets spanning multiple levels of explanation, we need more concerted efforts to shift conceptions of mental disorders from reductionist neurobiology toward multilevel dynamic system models that integrate the growing body of data in neuroinformatics, cognitive neuroscience, and social epidemiology.⁵

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