



Complexity, Intellectual Humility, and the Psychiatric Trainee

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I have nothing particularly original to say about how one identifies the cause of something from among the many events and conditions on which it depends. It seems fairly clear that this selection is often a response to the purpose and interests of the one doing the describing.

Fred Dretske [1].

The conceptualization of psychiatric illness continues to be an elusive pursuit. When we entered graduate and postgraduate medical training, fantasies of mastery and clean explanatory mechanisms soon evolved into an appreciation for the complexity of the human mind. Our preference for certain theoretical frameworks were both reinforced and challenged by colleagues and mentors, often leading to revised understandings or, at times, more entrenched views.

Our experience was not dissimilar to those of other trainees. Even before the first day of medical school and residency, trainees are often oriented toward specific etiologic explanations of psychiatric illness. These usually fall superficially into one of three broad categories—biological, psychological, and social explanations—and these inform how trainees talk to patients about their disorders. While such a divergence of views promotes fruitful discussion, it can be tempting to focus on one's proposed explanatory mechanism to the exclusion of others.

Such exclusionary thinking is often reinforced by the nature of academic training. As trainees develop greater knowledge, they tend to pursue expertise in a narrower aspect of research or clinical practice. Instead of a more comprehensive understanding of a broad subject, academic training often results in a detailed understanding, and ardent defense of, a specialized topic along a progressively narrow line of inquiry.

Yet the narrow nature of training stands in stark contrast to the nature of the diseases trainees are expected to treat—psychiatric diseases are complex, multifaceted, multi-causal disorders. For most psychiatric disorders, no individual approach—from a biological to an environmental to a psychological perspective—has yet to offer a detailed, mechanistic account of the disorder. Our understanding of these disorders is therefore inherently shaped (and we argue potentially limited) by the means we use to characterize them—different levels of inquiry as to the etiology, pathogenesis, and treatment will reveal different aspects of a particular disease. Given that psychiatry has no privileged level of explanation [2], particular care must be taken by the trainee to practice intellectual humility. By intellectual humility, we mean a recognition of the limits of one's own knowledge and an appreciation for what others, from disparate fields, may teach us as trainees. This is especially important as psychiatric classification systems increasingly move to etiologic mechanisms. Whether or not one believes that fully characterizing the etiology of a disease will allow a cleaner, more parsimonious classification of mental illness (e.g., Research Domain Criteria) or whether one is comfortable with a more categorical characterization (e.g., Diagnostic and Statistical Manual of Mental Disorders), care still must be taken to ensure that one is open to different conceptualizations of disorders that are different from one's preferred perspective.

We argue that humility as a psychiatric trainee is especially essential when one considers the complexity of most psychiatric disorders and how little we know about them. For example, it is now commonly accepted that there is no single gene responsible for a disorder like schizophrenia. Instead, recent data indicate that more than 100 genetic regions are implicated, affecting many different aspects of brain function, from glutamatergic receptors to brain-adhesion molecules [3]. The precise nature of how these genes interact to give rise to schizophrenia is currently unknown. From a brain network perspective, there is no single network alteration commonly reported—there are widely divergent findings with respect to connectivity differences in canonical resting-state networks used in functional magnetic resonance imaging studies. In

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fact, the picture emerging from neuroimaging studies indicates that brain-wide alterations are associated with schizophrenia—there is no single region that one can reliably use to classify patients vs. controls—and such brain-wide approaches do not result in clinically useful classifications [4]. Similarly, while strong evidence points to the importance of environmental and social factors (e.g., early-life trauma, minority group position, cannabis use) in modifying one's genetic risk for schizophrenia, no one explanation results in a reliable clinical predictor in individual patients [5].

We highlight the example of schizophrenia simply to illustrate that while progress is being made, no individual approach—from a genetic, to a brain imaging, to a social/environmental approach—has yet to offer a detailed, mechanistic account of the disorder. Given that we as psychiatrists have chosen to help patients with some of the most complex diseases in medicine, this is perhaps not surprising. Nevertheless, when trainees choose a research project, seek out a clinical mentor or supervisor, or subscribe to certain types of literature, they are inherently making a choice about how to view and think about a psychiatric disorder. We maintain that given the complexity of mental illness, humility is key at this stage of training—as well as throughout one's career.

Training is a unique period in which one can become immersed in a broad range of perspectives on psychiatric illness. Especially early on in training, one should avoid the temptation of becoming siloed in a preferred perspective and seek out opportunities to engage with unfamiliar ones. While the nature of academic training may unintentionally encourage singular or narrow lines of inquiry, trainees should be careful not to complete their whole training through one lens. For example, if one tends to subscribe to biological explanations of mental illness, attend lectures in the social sciences, seek out clinical supervisors with expertise in psychodynamic approaches, subscribe to a journal in a different field, and challenge oneself to incorporate less familiar theoretical frameworks into clinical formulations. Doing so opens one up to a more complete understanding of psychiatric disease and makes one a more effective clinician.

In addition to the individual trainee perspective, advancing our understanding of mental illness as a psychiatric community will require collaboration from multiple fields. For instance, even if a particular field perfectly characterizes

underlying mechanisms of psychotic syndromes, other fields are needed to leverage these findings clinically. Neuroimaging may help reveal imaging biomarkers that accurately classify clinical risk, molecular neuroscience may help identify which neural circuits are responsible for the imaging biomarker, epidemiology may help characterize gene-environment interactions that compound genetic risk, and health services research may reveal sociocultural factors that impact treatment and recovery, and so on. By practicing intellectual humility and considering findings from other areas of inquiry, a more holistic picture of the disorder might be achieved.

We contend that humility in the face of complexity will be vital as trainees work to better understand, diagnose, and treat mental illness. The ultimate goal of our training—whether in the clinic or at the laboratory bench—is to lessen human suffering caused by mental illness. By acknowledging how little we know about psychiatric disease and by keeping an open mind about what other approaches may teach us, we as trainees, and as a field, may better set ourselves up to achieve this goal.

Compliance with Ethical Standards

Conflict of Interest On behalf of both authors, the corresponding author states that there is no conflict of interest.

Ethical Considerations None

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