The RDoC framework: continuing commentary

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We are grateful for the thoughtful comments received in response to the target article about the National Institute of Mental Health (NIMH)'s Research Domain Criteria (RDoC) project that appeared in the February 2014 issue of *World Psychiatry* (1), and appreciate the opportunity to respond briefly to the major themes running throughout the thirteen commentaries (with apologies that space limitations preclude consideration of many interesting points).

We start by clarifying several aspects where we believe that we are in fundamental agreement with the commentators. First, although RDoC was seen by some as a radical departure from current research, we view the project as emerging from a rich history of translational research in brain-behavior relationships and dimensional approaches to psychopathology (e.g., 2). Thus, efforts to introduce biological and quantified behavioral/psychological criteria into diagnostics would not change many time-honored approaches.

We agree that a careful clinical interview is an essential component of the diagnostic process, which would be augmented (not replaced) by neurobiological or behavioral tests. Similarly, we agree with the necessity of studying clinical course and outcome with respect to RDoC domains and constructs. We are also in accord with the need to map RDoC dimensions to etiological factors of various sorts, e.g., such aspects as prenatal conditions and a full range of environmental variables related both to risk and resilience (in fact, as other commentators noted, such etiological studies are an emphasis in RDoC).

Multiple commentators noted the need to characterize the numbers of patients with DSM/ICD disorders that are included in RDoC-themed studies, and we agree that this will be a useful step to maintain crosswalks to the DSM/ICD system (while noting that many participants will not reach traditional diagnostic levels due to the dimensional approach). Finally, we agree that the ultimate arbiter of clinical utility for RDoC – as with any nosology – will be its ability to guide clinicians to personalized (or stratified) treatments that have greater aggregate effectiveness.

In this regard, several commentators expressed different variations of a critical theme that the RDoC framework might contribute in the future, but cannot inform clinical practice at the current time. We agree: RDoC is not intended as a near-term replacement for the ICD/DSM. However, other comments implied that necessary advances in future diagnostics and treatment will naturally eventuate if the current *status quo* for conducting research is maintained. Here, we disagree. Rapidly emerging neurobiological and behavioral data increasingly indicate that future needs cannot be met – or will be very considerably delayed – if the difficult research to align diagnosis with empirical data is not initiated now.

Another aspect of this theme stems from concerns that a future-oriented research project like RDoC slights the pressing needs for research and care of patients at the current time. Two related points may be noted in response to this concern. First, NIMH (like any agency that funds disorder-related research) must balance its resources among support for basic research, translational research, and services/dissemination research; RDoC only concerns the second of these areas, and support for the other areas has not changed – e.g., the NIMH RAISE project (www.nimh.nih.gov/health/topics/schizophrenia/raise/index.shtml) is a large-scale effort to develop best practices for detection and treatment of first-episode psychosis. Second, the needs for greatly expanded mental health services are all too apparent given the increasing burden of disability due to mental disorders (e.g., 3), and the availability of treatments for mental disorders is well recognized; our view is that research to accelerate enhanced diagnosis and treatment will encourage, rather than discourage, efforts to develop improved mental services in the US and around the world.

Several commentators indicated that RDoC ignores the psyche, subjective experience, or the clinical presentations of disorders – coupled with the related point that RDoC is excessively reductionistic. We would respond that the introduction of neuroscience and modern psychometrics into diagnosis does not mean that the patient's subjective experience or presenting symptoms are unimportant; as pointed out originally (and above), relating the various neurobiological and behavioral measures to symptoms and presenting phenomenology represents an important task in the RDoC scheme. However, we would disagree with a view that the patient's subjective experience, as such, ought to represent the sole or predominant focus of assessment and treatment. We acknowledge that some important clinical phenomena are as yet minimally represented in RDoC; this reflects a considered decision to start with relatively well-established areas of brain-behavior relationships, so as to establish a solid foundation upon which to build toward such poorly understood aspects of psychopathology.

Finally, it should be noted that pre-emption and prevention of disorders constitutes a major long-term objective of the RDoC process. It is now well known that, across many mental as well as neurological disorders, overt dysfunction appears only as a late stage in an ongoing disease process – badly hampering efforts toward early prevention. For mental

disorders, we are now only beginning to target early stages of illness, largely through incipient signs and symptoms as in the schizophrenia prodrome (4). In the future, indicated pre-emption of disorders will require the ability to intervene (e.g., with neuroplasticity interventions and/or targeted neuroprotective compounds) before any symptoms appear. In this context, measures such as functional gene group assays, sensitive cognitive tests, and endophenotypic measures (e.g., event-related potentials) do not constitute a reductionistic approach as such, but rather represent the necessary assessments that would be required for successful risk detection and pre-emption.

We close by repeating our appreciation for the opportunity to continue the discussion by clarifying some points of misunderstanding and acknowledging clear differences of opinion that demarcate the RDoC framework from current approaches to diagnosis. Interested readers are encouraged to visit the RDoC website (www.nimh.nih.gov/research-priorities/rdoc/index.shtml) for more information and links to papers with more extensive descriptions of various aspects of the project.

Appendix

The members of the NIMH RDoC Workgroup are: Bruce Cuthbert (chair), Rebecca Steiner Garcia, Marjorie Garvey, Marlene Guzman, Robert Heinssen, Michael Kozak, Sarah Morris, Daniel Pine, Kevin Quinn, Charles Sanislow, Janine Simmons, and Philip Wang.

References

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DOI 10.1002/wps.20140