Psychiatric Diagnosis

A Clinical Guide to Navigating Diagnostic Pluralism

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Abstract: The controversies surrounding the *Diagnostic and Statistical Manual of Mental Disorders* and *International Classification of Diseases* have generated significant debate across the psy-sciences. This debate has been further fueled by the launch of the Research Domain Criteria as a framework to facilitate advances in neuroscientific research, a renewed emphasis on dimensional models of psychopathology, currently exemplified by the Hierarchical Taxonomy of Psychopathology, and development of the *Psychodynamic Diagnostic Manual* by the psychodynamic community. In this article, we provide a clinical overview of recent debates surrounding categorical and dimensional approaches to psychiatric diagnosis, offer a critical assessment of proposed alternatives, and discuss how clinicians can navigate a plurality of diagnostic frameworks. Our discussion emphasizes that diagnostic frameworks need to be contextualized within the process of a comprehensive clinical evaluation, and their advantages and disadvantages should be understood in relationship to the theoretical orientations and practical needs of clinicians.

Key Words: Nosology, classification, pluralism, diagnostic practice, HiTOP

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Psychiatric diagnosis and classification have received increasing philosophical and scientific scrutiny over the last 3 decades (Aftab and Ryznar, 2021; Frances, 2013a; Phillips et al., 2012). The controversies surrounding the development of the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) and the unfulfilled hopes of a "paradigm shift" (Zachar et al., 2019) have generated significant debate across the psy-sciences. This debate has been further fueled by the development of the Research Domain Criteria (RDoC) by the National Institute of Mental Health (NIMH) as a framework to facilitate advances in neuroscientific research (Insel et al., 2010), by a renewed emphasis on dimensional models of psychopathology, currently exemplified by the Hierarchical Taxonomy of Psychopathology (HiTOP) consortium (Kotov et al., 2017), and development of the *Psychodynamic Diagnostic Manual* (*PDM*) by the psychodynamic community (Lingiardi and McWilliams, 2015). Furthermore, there is growing discontent among clinicians with regards to various limitations of categorical, descriptive, and operationalized approaches as they exist in the *DSM* and the *ICD*. In this article, we provide a clinical overview of some recent debates surrounding categorical and dimensional approaches to psychiatric diagnosis, offer a critical assessment of proposed alternatives, and discuss how clinicians can navigate a plurality of diagnostic frameworks.

DSM and *ICD* serve many purposes in health care. They provide a shared and common language for the profession, allow for comparisons among research studies, facilitate development of interventions for various conditions (including regulatory authorization by agencies), provide structure for education, serve as reference for forensic evaluations, and enable billing and administrative tasks as well as collection of health statistics. In our opinion, *DSM* and *ICD* do a "good enough" job of fulfilling these diverse and at times conflicting needs, but understandably, they do not fulfill any of them perfectly (Frances and Widiger, 2012). This imperfection has been particularly limiting in the research setting where it has become obvious that *DSM* and *ICD* categories do not capture distinct neuroscientific mechanisms relevant to psychopathology. *DSM*/*ICD* categories have also proven inadequate at describing the structure of psychopathology as examined through statistical techniques such as factor analyses, which so far consistently reveal a dimensional rather than a categorical picture. From a phenomenological perspective, the *DSM*/*ICD* criteria are too descriptively impoverished and unable to capture the rich nuances of psychopathological descriptions. For a variety of reasons then, clinicians and researchers from various backgrounds are looking for other models and frameworks for guidance in order to overcome the limitations of *DSM* and *ICD* systems.

The use of descriptive, operationalized criteria in *DSM-III* emerged in the context of concerns around the widespread lack of reliability of psychiatric diagnoses among psychiatrists (Aftab and Csernansky, 2020; Kendell et al., 1971). The development of operationalized diagnostic criteria was intended, in part, to remedy such discrepancies. When *DSM-III* was published in 1980, it was described as "atheoretical" with regards to etiology, a statement that was intended to emphasize its descriptive nature. However, descriptions always exist within a context of shared background theoretical assumptions (Zachar et al., 2023), and *DSM-III* was implicitly embedded within a neo-Kraepelinian approach to psychopathology (Blashfield, 1982; Klerman, 1978), with the assumption that studying psychopathology using descriptive, operationalized criteria will eventually lead to a convergence of validators and discovery of underlying disease entities (Rounsaville et al., 2002). This hope guided scientific research over the next 3 decades, and the project to identify valid, categorical psychopathological disease entities was largely unsuccessful. Once the neo-Kraepelinian assumptions are made explicit and cast aside, it is understood that *DSM* and *ICD* are pragmatic manuals, offering operational definitions for purposes of reliable communication, and while the categories do capture useful group differences on various validators, the manuals can make no claim with regards to "carving nature at its joints."

CONTEXTUALIZING DIAGNOSIS WITHIN DIAGNOSTIC PRACTICE

Sadler distinguishes between diagnosis-as-denotation and diagnosis-as-process (Sadler, 2005). Where the former refers to categories and classifications as we typically understand them, the latter points toward a broader notion of diagnostic practice. Clinicians make use of psychiatric classifications working in particular contexts with particular individuals. A categorization of psychopathology means little without some process of recognizing, understanding, and contextualizing it. Diagnosis is both the process and the outcome of ascertaining the nature of a clinical problem. When we look at diagnostic manuals such as *DSM*, we are

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looking at the denotation part of the process. The way clinicians or researchers use the framework is at least as important, if not more so. For example, when it comes to the *DSM*, clinicians rarely, if ever, use Structured Clinical Interview for *DSM* Disorders (SCID), which is generally reserved for research settings. Instead, clinicians often rely on prototypical descriptions of *DSM* psychiatric categories. They use the presenting complaints and initial history of the patient to rapidly create a differential diagnosis, use that differential diagnosis to guide their clinical assessment, and then refine or revise the differential diagnosis as the assessment proceeds (Huda, 2019). After they have established that the presentation approximates or matches a diagnostic prototype, they might consult the precise diagnostic criteria, and determine, for instance, whether the patient meets full criteria or is subthreshold or better considered in the "other specified" category. Many clinicians complement the diagnosis with a narrative diagnostic formulation that summarizes their conceptualization of predisposing, precipitating, and perpetuating factors (Huda, 2021). This is relevant for diagnostic frameworks such as HiTOP as well. The use of HiTOP in academic contexts currently relies on the application of clinical rating scales (Ruggero et al., 2019b); however, it is also possible to approach HiTOP constructs in a prototypical manner (*e.g.*, see Balling et al., 2023), and widespread clinical utilization of HiTOP may very well require such an approach. We cannot divorce psychiatric nosologies from the contexts in which they are used and from the processes clinicians or researchers employ to make use of them. It is also worth noting that clinicians as well as researchers frequently utilize a variety of quantitative clinical rating scales, such as Quick Inventory of Depressive Symptomatology or Yale-Brown Obsessive Compulsive Scale. Although these are generally used in service of a categorical *DSM*/*ICD* diagnosis, such incorporation of dimensional measures in clinical practice already represents a form of diagnostic pluralism in which categorical and dimensional approaches coexist.

CONCEPTUAL CONSIDERATIONS SURROUNDING PSYCHIATRIC DIAGNOSIS

The nature of psychiatric disorders remains a matter of active scientific and philosophical debate. The relationship between psychiatric diagnoses and the psychopathological reality has been described previously using the three umpires analogy (Frances, 2013b):

Umpire 1: There are balls and strikes, and I call them as they are.
Umpire 2: There are balls and strikes, and I call them as I see them.
Umpire 3: There are no balls and no strikes until I call them.

These umpires respectively represent the "realist," "nominalist," and "constructivist" philosophical positions. The first umpire position takes the view that psychiatric diagnoses correspond to distinct disease entities as they exist in nature. The second umpire adopts the view that psychiatric diagnoses are useful heuristics; the categorical distinctions do capture important differences that are relevant to etiology and treatment, but they do so in a historically contingent, pragmatic, and fallible manner. The third umpire takes a social constructionist view according to which psychiatric diagnoses are arbitrary social labels with no relationship to objective neurobiological and neuropsychological assessments. The current scientific consensus favors the nominalist position of the second umpire with regards to categorical, descriptive diagnoses used by *DSM* and *ICD* (Phillips et al., 2012). This is also consistent with a dimensional understanding of psychopathology. Any categorical distinctions on a continuum will not be reflective of nature discontinuities but of our pragmatic clinical and scientific needs.

The scientific and philosophical difficulties surrounding psychiatric diagnosis are compounded by the fact that there is no satisfactory definition of mental disorder (Aftab and Rashed, 2021; Phillips et al., 2012; Stein et al., 2010). It has proven very difficult to formally operationalize a definition of mental disorder that offers meaningful practical guidance and helps settle difficult boundary cases. The common themes in our contemporary notions of mental disorder are distress, disability, and dysfunction, but these are imprecise and value-laden notions, and do not provide necessary or sufficient conditions. The boundaries between disorder and normality therefore remain contentious, subject to value disagreements (Bolton, 2008). Notably, this philosophical problem is more acute in psychiatry, but it applies to all of medicine, where no settled definition of disease or disorder exists (Nesse, 2001). At present, psychiatric diagnostic manuals utilize a broad notion of "disorder" that in practice is not dissimilar from notions of "mental health problems" and "psychopathology." Although attempts to understand the notion of "dysfunction" in terms of biological functions remain fiercely debated by philosophers of psychiatry (Wakefield, 2007), clinicians continue to work with folk judgments of abnormality, distress, disability, and harm (Aftab et al., 2020; Jerotic et al., 2024).

CATEGORICAL VERSUS DIMENSIONAL APPROACHES TO PSYCHIATRIC CLASSIFICATION

The choice between categorical and dimensional approaches can be conceived of as referring to an optimal strategy of making the complexity of clinical phenomena tractable for clinical and research purposes, either through reliance on a finite number of classes (categories) or by the employment of a finite set of qualitatively specified but continuous and quantifiable dimensions. Categorical approaches to classification have historically been dominant in psychiatry (and medicine), but recent decades have seen a burgeoning scientific development of dimensional models of classification. The choice between categorical and dimensional models is, however, not simply a pragmatic issue. Psychiatric categories may be conceptualized and measured either categorically or dimensionally, but whether the statistical latent structure is truly categorical or dimensional is an empirical issue to be discovered (Ruscio and Ruscio, 2008). The scientific question about the latent structure of psychopathology is therefore distinct from the question of the clinical use of categorical versus dimensional models.

Classifications in medicine and clinical psychology are pragmatic tools created to guide and structure clinical work. Because many clinical decisions are binary, categorical classifications are often conducive to clinical work in a manner that dimensions are not. In research contexts, categorization of dimensional measures entails some loss of data, and consequently, dimensional approaches often allow for greater statistical power, which is conducive to scientific research. The choice between dimensions and categories, however, can be deceptive as dimensions can easily be converted in categories based on practically relevant thresholds. Many general medical problems exist as dimensions but physicians treat them categorically. For example, blood pressure and weight are dimensions, but essential hypertension is diagnosed as a category using a threshold of 140/90 mm Hg, and obesity is often diagnosed using cutoffs on the body mass index. Correspondingly, categorical classifications can incorporate elements of dimensionality, such as by conceptualizing the condition as existing on a spectrum and by specifying different levels of severity (subthreshold/mild/moderate/severe). In this sense, the goal of dimensional systems in psychiatry is not the elimination of categories, but rather the delineation and optimization of clinical cutoffs given the dimensional nature of the phenomena.

It is important to highlight that a difference in quantity can be consistent with the emergence of a qualitative or categorical difference on that continuum. For instance, a normal person may experience hypnagogic or hypnopompic hallucinations and an anxious person might believe that their coworker is talking behind their back, but there are qualitative differences between such experiences and the psychotic states observed in schizophrenia spectrum disorders, even though these may be rated continuously on a symptom scale. Experiences of impairment and disability on symptom dimensions are one example—disability may only be experienced only if the symptoms are sufficiently severe, and from the perspective of network dynamics, symptoms may

become self-sustaining via mutual feedback loops above a certain threshold of symptom activation but not below it. Dimensional approaches, therefore, in principle, allow for qualitative differences to exist on a quantitative continuum, and different neuropsychological mechanisms may be involved in their realization.

The scientific question of whether the latent structure of psychopathological conditions is discrete (categories) or continuous (dimensions) remains unsettled; there is no convincing evidence yet of discrete categories in psychopathology (Haslam et al., 2020). However, the notion that categories and continua are mutually exclusive has itself come under scrutiny (Borsboom et al., 2016). There are certain classical notions of what categories and dimensions look like (*e.g.*, Kraepelinian disease entities and intelligence quotient, respectively), but it is possible that psychopathology could be described in some ways as categorical (involving within-person dynamic phase transitions over time) and in others as dimensional (symptom distribution in a population) (Eaton et al., 2023).

Dimensional models tend to rely heavily on the employment of multivariate techniques jointly subsumed under the heading of factor analysis. The latter is directed at the reduction of initially very numerous input variables into a limited number of output variables (the factors), and it is factor analysis that is often presented as a vehicle through which dimensions in various models are arrived at. Such a presentation, however, can be misleading as far as it might suggest a completely mechanistic and one-directional procedure that simply allows the researcher to passively discover the traits "out there." Factor analysis, as has been reminded time and again, does not work like this. Rather, it includes some nontrivial decisions (like the choice between orthogonal and oblique rotation), which influence the solutions (or output variables) obtained (Achenbach, 2021).

The complexity of dimensional models also constitutes its most commonly brought-up disadvantage, that is, their perceived unwieldiness in clinical practice. The greater the number of dimensions to be assessed, the greater the cognitive burden (Phillips, 2016). This was precisely the source of resistance with which attempts to create an alternative dimensional classification of personality disorders for *DSM-5* was met (Zachar et al., 2015). *ICD-11* has been more successful in its implementation of a dimensional model of personality disorders (although the "borderline pattern" specifier was retained due to clinician insistence as a categorical vestige of the prior classification) (Tyrer et al., 2019). Nonetheless, the objection about clinical unwieldiness can be exaggerated and appears to be moderated, in part, by the professional background and the practice setting. Psychologists in an academic setting may very well find a dimensional system such as HiTOP to be more clinically useful, a psychiatrist in a busy community clinic might find *DSM*/*ICD* more convenient, whereas a psychoanalyst in private practice may have little use for either categorical or dimensional diagnosis, preferring to rely instead on a psychological formulation. The objection about clinical unwieldiness also depends on assumptions about the implementation requirements of the dimensional system. If dimensional diagnosis requires using an extensive battery of self-reported questionnaires and clinician-rated scales, that will be considered arduous in most clinical settings. On the other hand, if using the dimensional system simply means conceptualizing elevated symptomatology across a small number of broad dimensions (such as "internalizing" and "externalizing") in a prototypical manner based on a routine clinical assessment, this will be acceptable to most clinicians.

Although categories may be thought of in terms of individually necessary and jointly sufficient conditions, with discrete boundaries, and subject to either/or logic of inclusion, they are often, especially in clinical settings, not thought of in that manner. An alternative way of understanding classification categories is as fuzzy kinds, ideal types, or prototypes (Zachar, 2000). Clinicians tend to utilize a matching process where key features of the clinical presentation encountered are compared with prototypes of diagnostic profiles in an attempt to determine the best fit, which is then subjected to subsequent clinical confirmation (Huda, 2019). The prototypical approach to diagnostic categories relies on the notion of a typical example, which the members of the category can approximate to various degrees (Hampton, 2006). Prototypes are also characterized by vague boundaries that overlap with neighboring prototypes. The prototype model of categorization, as opposed to classical categories, features "fuzzy boundaries," where membership is not always clear-cut and some members represent the category better than others, like a robin being more representative of birds than an ostrich (Zachar, 2000). Prototypical categories include prototypical, atypical, and borderline examples, without requiring necessary and sufficient conditions for membership. The concept of "family resemblance" is also relevant here. *DSM*'s use of "polythetic" criteria is a form of the prototype model. Criteria sets allow for hundreds of possible symptom combinations, creating a family of types rather than a single, discrete type (Zachar, 2000). Although clinicians do not necessary conceptualize *DSM* categories in this manner, nonetheless, *DSM*'s use of operationalized criteria often creates sharp dichotomies such that, properly speaking, either the criteria are met or they are not; in some ways, disorder descriptions in *ICD* are more conducive to prototypical application since they often eschew arbitrarily precise thresholds in favor of fuzzy boundaries (*e.g.*, for Generalized Anxiety Disorder *ICD-11* requires "marked symptoms of anxiety that persist for at least several months," whereas *DSM-5* requires at least 6 months.) Prototypes can be viewed as a pragmatic strategy that serves as a compromise between the realism-instrumentalism dichotomy in philosophy of science (Schaffner, 2012).

THE RESEARCH DOMAIN CRITERIA

RDoC is both transdiagnostic and dimensional in its approach to behavior and psychopathology. Instead of relying on formal *DSM*/*ICD* diagnostic categories, it relates various aspects of neuropsychological functioning (such as working memory or reward anticipation) to psychological phenomena that cut across diagnostic categories (such as the entire spectrum of anxiety disorders or anhedonia across multiple diagnoses). It seeks to study the full range of functioning, from normal/typical to abnormal/psychopathological, seeing psychopathology as a dimensional deviation from normal functioning. Furthermore, the RDoC framework attempts to take into account "the processes of development (fetus to adult), and the impact of environment and experience on a living individual" (Gordon, 2017), revealing RDoC's potential to take neurobiological research in a more integrative and pluralistic direction. Whether RDoC investigators will actually emphasize the developmental and environmental aspects of the framework remains to be seen.

The RDoC applies its units of analyses (from genes to psychosocial factors) to several predetermined neuropsychological domains—negative valence systems, positive valence systems, cognitive systems, social processes, arousal and regulatory systems, sensorimotor systems—in the form of a matrix. Each domain is subdivided into constructs; for example, positive valence systems include the constructs of reward responsiveness, reward learning, and reward valuation.

When it comes to RDoC, one is forced to distinguish between the research framework itself and the provocative manner in which RDoC was presented to scientific community as an alternative to *DSM* diagnoses, especially around the time of the publication of *DSM-5* (Frances, 2014). The early RDoC publications reductively conceptualized mental illnesses as disorders of neural circuitry, privileging neural circuits as the preferred mode of analysis (Insel et al., 2010). This notion of mental disorders as brain circuit disorders, however, is not intrinsic to the RDoC framework—the framework says little if anything about the notion of mental illness—and is prominently missing from subsequent descriptions of RDoC (Morris et al., 2022; Sanislow, 2016; Sanislow, 2020).

When reviewing what RDoC has achieved in its first 10 years (Sanislow, 2020), it can be appreciated that RDoC has encouraged novel approaches in research, has facilitated open-mindedness among grant reviewers with regards to thinking beyond traditional diagnostic

categories, and has inspired a wave of new research. RDoC has clearly energized neurobiological and translational research, and that is to be lauded and welcomed. If history is our guide, however, we can expect that progress when it comes to clinical translation will be difficult and slow (Stein et al., 2022).

The popular characterization of RDoC as a classification approach bears some comment. A 2017 article with Bruce Cuthbert (Head of the RDoC Unit) among its authors stated, "…the RDoC project was not intended for practical clinical use in the near future. Rather, it provides a framework for research. It does not formally incorporate any current *ICD* or *DSM* disorders and, in fact, does not define mental disorder or any specific disorders." (Clark et al., 2017). The article goes on to state, "as an experimental framework that is intended to generate new research hypotheses and data, RDoC is not bound by the need to produce a clinically usable document." (Clark et al., 2017). Joshua Gordon expressed a similar sentiment in 2020: "It is important to note that RDoC is not a diagnostic system, nor is it meant to be. It is a research framework intended to change as new data are gathered and new concepts are realized." (Gordon, 2020). The message from the NIMH leaders is clear in this regard: despite the popular characterization of RDoC as a nosological development in psychiatry, RDoC is neither a diagnostic system, nor at present a clinically usable manual.

Although the RDoC framework itself is not ready for clinical use, from a clinical perspective, there are similarities between RDoC and other approaches such as "cognitive neuropsychiatry" (Halligan and David, 2001) that focus on the links between psychopathology and neuropsychology. Cognitive neuropsychiatry focuses on symptoms and syndromes rather than conventional diagnostic categories, and this approach allows for the interpretation of psychopathological phenomena such as delusions as disruptions in cognitive processes. These processes include, but are not limited to, attention, perception, learning, memory, language, problem-solving, and belief formation. Each of these represents a subsystem, which, though separate, is interlinked within the cognitive framework. In a similar manner, thinking of psychopathology along the lines of RDoC domains such as negative valence systems and positive valence systems can enrich a diagnostic case formulation (see Yager and Feinstein, 2017).

THE HIERARCHICAL TAXONOMY OF PSYCHOPATHOLOGY

HiTOP (Kotov et al., 2017; Kotov et al., 2021; Ruggero et al., 2019b) is an effort to create a classification framework based primarily on empirical data and statistical methods: a quantitative nosology founded, as the claim rhetorically goes, on the "consensus of evidence" (Kotov et al., 2021) in contrast to the consensus of experts. The HiTOP consortium was founded in 2015, consisting mostly of academic psychologists interested in quantitative methods, and the nosological project relies heavily on multivariate statistical methods such as factor analysis. It is a family of methods that aims to identify patterns of covariation exhibited by symptoms and traits in the domain of psychopathology.

From a formal point of view, there are two features that are crucial to understand HiTOP. The first one is dimensionality: the idea, as discussed earlier, that psychopathology can be understood in terms of a set of distinct dimensions. Clinical phenomena are construed as falling along continua rather than simply present or absent (which would be proper to the *DSM*-kind categorical thinking) and as only quantitatively different from their counterparts proper to nonclinical populations. This dimensional structure as well as the respective methods of discovery (exploratory factor analysis), verification (confirmatory factor analysis), and measurement (multidimensional questionnaires) in the domain of psychopathology are similar to that of FFM in the domain of personality.

The second formal feature is the hierarchical structure of the classification or the idea to address psychopathology at different levels of statistical variation, beginning with the narrowest elements. The levels in question, in the bottom-up order, include the following: 1) sign/symptom and maladaptive trait components; 2) syndromes (understood in a dimensional manner); syndromes are not currently fleshed out in HiTOP, and their existence is subject to some controversy, but in theory, this is the level most closely corresponding to traditional nosological categories; 3) subfactors or small clusters of strongly correlated syndromes; 4) spectra including broad groups of subfactors; and (5) higher-order levels up to the stipulated general psychopathology factor (p). The list of spectra in HiTOP currently consists of Internalizing, Thought Disorder, Detachment, Disinhibited Externalizing, Antagonistic Externalizing, and, provisionally, Somatoform.

With this dimensional and hierarchical structure, HiTOP tackles both comorbidity and heterogeneity. Comorbidity of major depressive disorder and general anxiety disorder, for example, can be done justice in terms of a higher "Distress" subfactor. In cases where more specificity or homogeneity is needed, one can instead focus on symptoms and traits (for a detailed example of the HiTOP applied to a particular patient, see Ruggero et al., 2019b). A complete assessment with HiTOP produces a diagnostic profile that shows symptom severity across each component, syndrome, and spectrum; the scores on each dimension can then be classified into healthy, mild, moderate, and severe range using normalized *t*-scores. Impairment is rated separately from symptom severity. It is not necessary for clinicians, however, to assess every element of HiTOP; rather, the assessment can be tailored to relevant spectra, syndromes, or symptoms depending on the clinical context and clinical needs.

HiTOP does not rely on any particular definition of mental disorder or psychopathology. It does not posit any fixed boundary between normal and disordered. Recognizing dimensional nature of psychopathology, thresholds for clinical decisions are intended to be guided by severity thresholds, which would require validation in different populations, or in the absence of clinically validated thresholds, by *t*-scores relative to normal distribution in the population. As expressed by Ruggero et al., "diagnostic thresholds are indicators not of people who can be classified as qualitatively different from the healthy, but of relative severity on continua that suggest varying need for treatment." (Ruggero et al., 2019a). The HiTOP consortium has recommended several existing instruments that are compatible with HiTOP and can be utilized by clinicians (see https://psychology.unt.edu/hitop). A self-report measure based on HiTOP, HiTOP-SR, is now available for research use (https://www.3plab.org/hitop). It is anticipated that HiTOP-SR will be available for clinical use in the coming years.

HiTOP offers many scientific advantages. Mechanisms of psychopathology and biomarker associations can be hypothesized and investigated at different levels of the hierarchy, instead of the usual syndromic level. Dimensions also offer greater reliability compared with categories (Markon et al., 2011). HiTOP is aimed at capturing the covariance of symptoms; therefore, HiTOP can be understood to be valid to the degree it accurately describes patterns of covariance as they exist in reality. Individual dimensions stipulated by the HiTOP are all founded on carefully designed multivariate data analyses (Andrews et al., 2009; Ringwald et al., 2023). A recent meta-analysis of 35 studies estimating factor-analytic models from 23 *DSM* diagnoses resulted in a model that closely resembled the HiTOP framework, supporting the validity of HiTOP (Ringwald et al., 2023). Results of statistical clustering from a large self-report survey (n = 14,762) based on *DSM*-symptoms also show strong convergence with HiTOP (Forbes et al., 2023). A series of papers in *World Psychiatry* has provided validity evidence for spectra in the model (Kotov et al., 2020; Krueger et al., 2021; Watson et al., 2022).

Having said this, there are important limitations to consider with regards to HiTOP. As previously mentioned, factor analysis is not a passive data-driven procedure, but like all statistical and data analytic procedures, it depends on crucial choices that are made with regards to statistical analysis. The suitability of HiTOP's choice of simple structure factor analytic procedure remains subject to debate (Borsboom, 2017a; Haeffel et al., 2021). The effort to create a classification optimized to represent patterns of covariation exhibited by symptoms and

traits is a scientific advance in its own right; whether it leads to advances in the form of improved understanding of etiology or better treatment is an open question. HiTOP at present does not cover neurodevelopmental and neurocognitive disorders, although work is underway to include them in the framework. This constitutes a significant limitation of the system in terms of clinical application as well as its uptake in the neuropsychiatry community. HiTOP, like other dimensional assessments, is a cross-sectional evaluation of symptoms and thus lacks "memory" of previous states. In contrast, *DSM*/*ICD* diagnoses capture varying degrees of temporal stability, and this is reflected in the course and current state designators (*e.g.*, acute *vs*. chronic schizophrenia; major depressive disorder *vs*. persistent depressive disorder). The lack of temporal and etiological specifications in HiTOP can also make it hard to differentiate among substance-induced psychosis, schizophrenia, and affective psychosis, all of which have different prognostic and treatment implications (Huda and Petch, 2023).

The quantitative nosological advance offered by HiTOP comes with a clinical burden and uncertain clinical returns. The greatest challenge that HiTOP presently faces is in the domain of clinical utility, and this will determine whether HiTOP is adopted widely in clinical practice or not. Although clinical implementation of HiTOP is possible using rating scales (Ruggero et al., 2019b; Waszczuk et al., 2017), rating scales have at present limited uptake in most psychiatric and psychotherapeutic settings outside academic contexts (with the exception of brief screening instruments such as PHQ-9 and GAD-7). Considerable worries concern the clinician acceptability of quantified dimensional profiles, at least in the near future, and especially in primary care, where the bulk of anxiety and depressive disorders are diagnosed and treated at present. As noted earlier, worries about clinical acceptability depend on the flexibility of implementation, and just as *DSM* can be used without administering SCID, HiTOP can also be used in clinical practice, in principle, without administering formal rating scales.

There are some favorable preliminary data about acceptability of HiTOP among clinical psychologists, at the time of this writing; however, there has been no studies investigating whether medical professionals can reliably generate and interpret a HiTOP profile, studies investigating how HiTOP can guide treatment, and whether use of HiTOP in clinical settings leads to better therapeutic outcomes (Haeffel et al., 2021). Although implementation of HiTOP will continue to progress given the many scientific advantages offered by HiTOP, in clinical settings, it is likely that only demonstrable improvement in patient outcomes will provide a convincing argument for clinicians to undertake the considerable effort required to transition from *DSM*/*ICD* to HiTOP (Zimmerman, 2021) (for some ideas, see Sauer-Zavala, 2022).

PSYCHODYNAMIC DIAGNOSTIC MANUAL

Combining psychiatric diagnoses with an idiographic clinical formulation (biopsychosocial, cognitive behavior, psychodynamic, etc.) has long been recommended as the standard of good psychiatric practice (Gabbard, 2014), but the practice of formulation has been eroded in recent decades with the practice of symptom checklists (aided by screening questionnaires such as PHQ-9, especially in primary care settings) and practice guidelines, which reinforce a diagnosis-based algorithmic approach to treatment. In the domain of nosology, there has been little effort to integrate diagnostic constructs with clinical formulation. The multiaxial system introduced in *DSM-III* was a rudimentary form of formulation and encouraged clinicians to develop one. However, it was removed from *DSM-5*, and this has further contributed to the neglect of formulation. One notable exception in this regard among classification frameworks is the *PDM* (Lingiardi and McWilliams, 2015), first published in 2006 and now in its second edition, released in 2017. The *PDM* is a product of a collaborative effort among five national and international psychoanalytic organizations, including the American Psychoanalytic Association and the International Psychoanalytical Association. It was developed to complement, rather than compete, with *DSM*. As such, it utilizes and refers to *DSM* categories but augments *DSM*'s descriptive symptom-focused approach with a thorough discussion of individual psychodynamics and ways of engaging in the psychotherapy process (PDM Task Force, 2006).

From a psychodynamic perspective, the deemphasis on the patient's subjective experiences in *DSM* and *ICD* has produced a flat, experience-distant catalog of mental suffering that fails to capture the complexity and uniqueness of individual human beings. For instance, *DSM* criteria sets for anxiety and depression include observable phenomena such as palpitations and changes in sleep and appetite, but they fail to capture whether the anxiety is related to separation or annihilation, or the depression is anaclitic or introjective—aspects that are vital to adequate diagnosis and treatment within the framework of psychoanalysis (McWilliams, 2011). The *PDM* attempts to bridge this gap. In this sense, *PDM* occupies a unique position in the contemporary nosological landscape. Although *PDM* has failed to penetrate into wider psychiatric practice, and reliance on the manual is variable and inconsistent even among psychodynamically minded clinicians (Lingiardi and McWilliams, 2015), it offers a template for how idiographic and nomothetic aspects of diagnosis may be integrated in a manual. On the other hand, *PDM* has never been subjected to field trials and assessments of reliability, and vital scientific information regarding its clinical applicability is therefore largely unknown, limiting its use in clinical as well as research settings.

OTHER THEORETICAL DEVELOPMENTS RELEVANT TO PSYCHIATRIC NOSOLOGY: NETWORK MODELS, CLINICAL STAGING, AND PHENOMENOLOGICAL PSYCHOPATHOLOGY

Although beyond the scope of our present discussion, we wish to briefly acknowledge significant theoretical developments that seek to expand contemporary nosologies by i) hypothesizing feedback interactions between symptoms in a psychiatric syndrome using tools from network theories; ii) attempts to characterize extent of progression of a condition, from subclinical to chronic and recurrent, and iii) detailed descriptions of abnormal human subjectivity.

Network approaches (Borsboom 2017b; Robinaugh et al., 2020) assume that symptoms of psychopathology causally influence each other, such that self-sustaining feedback loops can lead to the emergence of a psychiatric syndrome in the absence of a common cause (such as a central etiological mechanism). Network approaches view psychopathology in dynamical terms, akin to how ecology and meteorology treat habitats and weather. The brain is treated as a complex system, and states of health and psychopathology are conceptualized as distinct states that the system occupies and the system can transition from one to the other.

Clinical staging approaches (McGorry et al., 2006; McGorry et al., 2014) take inspiration from fields like oncology where clinical staging of pathology has transformed scientific understanding and treatment. Psychiatric disorders appear to progress through a continuum of illness: asymptomatic and at-risk (stage 0), help-seeking with distress (stage 1a), attenuated syndromes (stage 1b), full-threshold disorder (stage 2), recurrence or persistence (stage 3), and treatment resistance (stage 4). Early stages are characterized by nonspecific, overlapping, and fluctuating symptoms that are "pluripotent," that is, they have the potential to evolve into different stable and well-defined syndromes (Hartmann et al., 2021), as traditionally described in *DSM* and *ICD*. Clinical staging framework therefore bridges dimensional and categorical approaches by taking a longitudinal perspective on illness development.

Phenomenological psychopathology (Chakraborty, 2020; Stanghellini and Broome, 2014) is a systematic exploration of psychopathological phenomena from a subjective, first-person perspective. It has been described as the basic science of psychiatry, and it is interested primarily in neither classification nor etiology, but rather in a careful

and nuanced description of experiences in terms of basic, elemental features of human subjectivity, such as selfhood, intersubjectivity, affectivity, and temporality (Nelson et al., 2021). It provides a shared language across theoretical orientations at a more fundamental level than descriptive classifications.

For discussions of the links between these theoretical approaches and nosological frameworks, see Eaton et al. (2023), Nelson et al. (2021), and Rief et al. (2023).

RESEARCH LITERATURE ON CLINICIAN ATTITUDES TOWARD CLASSIFICATION

Raskin et al. have reported findings from a survey of more than 700 psychologists from multiple divisions of the American Psychological Association (Raskin et al., 2022). They found that psychologists were overall dissatisfied with *DSM-5*. Reasons for dissatisfaction included the following: a belief that *DSM* applies medical labels to psychosocial problems; *DSM* obscures individual differences; there are disagreements over what categories belong in the manual; there is too much emphasis on pathology; diagnostic labels have distorting effects on clinical understanding; concerns about reliability and validity; and worries that diagnostic classification can lead to potentially inappropriate treatment. However, despite the dissatisfaction, nearly 90% reported using it regularly for administrative and billing purposes, as well as for the purposes of making a differential diagnosis. With the exception of *ICD*, psychologists were generally unfamiliar with alternatives such as HiTOP, RDoC, and *PDM*. The responses of psychologists varied by their theoretical orientation. CBT psychologists generally had a more favorable view of *DSM-5*, whereas psychodynamic and humanistic/constructivist/systems-oriented psychologists generally had a negative view. The attitudes of integrative/eclectic psychologists were in-between the two. Among alternatives to the *DSM*, most supported the use of *ICD*. Psychodynamic psychologists had a more favorable view of the *PDM*, whereas CBT psychologists assessed it negatively.

Two survey studies conducted by First et al. shed light on how the *DSM* is used in clinical practice (First et al., 2019; First et al., 2018). In an online survey of 394 psychiatric clinicians—a convenience sample from readers of the US-based periodical *Psychiatric Times*—revealed that majority used the *DSM* for administrative/billing purposes. Fifty-five percent found it very or extremely useful for communicating a clinical diagnosis with other professionals, 51% found it very useful for teaching trainees, 26% for educating the patient/family, and 23% for selecting a treatment (First et al., 2019). In a global survey of 1764 mental health professionals from 92 countries, the most frequent use was again for administrative or billing purposes. A little more than half (57%) reported often or routinely going through diagnostic guidelines or criteria systematically to determine whether they apply to individual patients. Nearly 50% reported that they often or routinely make a diagnosis without referring to diagnostic criteria (First et al., 2018).

In the WPA-WHO Global Survey of 4887 psychiatrists in 44 countries (Reed et al., 2011), psychiatrists rated facilitating communication among clinicians and informing treatment and management as the most important purposes of a classification. Participants overwhelmingly preferred a simpler system with 100 or fewer categories, and over two thirds preferred flexible guidance to a strict criteria-based approach. Most were open to a system that incorporated dimensional components. In a similar WHO-IUPsyS survey of 2155 psychologists from 23 countries (Evans et al., 2013), 60% routinely used a formal classification system, and viewed treatment guidance and communication as the most important purposes, and preferred flexible guidelines over strict criteria.

A smaller study of 143 practicing clinicians (nearly all were psychologists) compared the clinical utility of HiTOP versus *DSM* (Balling et al., 2023) using 3 clinical vignettes of diagnostically complex presentations drawn from published case reports. HiTOP was rated as offering more clinical utility than *DSM* by the participants. HiTOP was rated as better with regards to treatment formulation, communicating clinical information, comprehensive description of psychopathology, describing global functioning, and ease of application. However, it is notable that prototypical examples of *DSM* diagnoses were avoided in vignette development and the study used a simplified version of HiTOP where instead of rating scales and quantitative scores for each dimension, clinicians read brief descriptions of HiTOP constructs and then rated whether, for the person in the vignette, each construct was a) not at all a problem, b) somewhat of a problem, or c) very much a problem. HiTOP elements included in the study were superspectrum, spectra, and subfactors.

To summarize, these surveys reveal the following:

- Clinicians prefer flexible diagnostic guidelines over strict criteria, suggesting a preference for a clinical prototype approach over strict operationalization. Clinicians generally support incorporating dimensional elements into categorical systems such as *DSM* and *ICD*.
- Many mental health professionals, although they make use of diagnoses, do not routinely refer to specific diagnostic criteria in the manuals.
- Clinicians want diagnostic guidelines to facilitate communication and guide treatment.
- The majority use *DSM*/*ICD* for administrative/billing purposes, even when they are otherwise dissatisfied with the manual.
- A simplified version of HiTOP appears to be acceptable to psychologists and offer some advantages over *DSM* when it comes to conceptualizing diagnostically complex cases with multiple comorbidities. It is unclear at the moment how medical professionals (including psychiatrists and nonpsychiatric professionals such as primary care physicians) would assess HiTOP's clinical utility compared with *DSM* and *ICD*.
- Theoretical orientation of mental health professionals, especially psychologists, influences whether they find *DSM* to be useful and what alternatives they prefer. No current diagnostic system is highly endorsed by psychologists across all theoretical orientations.

PROPOSALS TO ELIMINATE PSYCHIATRIC DIAGNOSIS

In light of the various deficiencies and limitations of *DSM* and *ICD* psychiatric diagnoses, some critics of psychiatry have proposed eliminating psychiatric diagnoses altogether. For instance, in 2013, the British Division of Clinical Psychology (DCP), a subdivision of the British Psychological Society, issued a formal position statement calling for the abandonment of psychiatric diagnosis, arguing instead that changes be made to the structure and delivery of mental health services to rely on psychological formulation alone, even for conditions such as schizophrenia and bipolar disorder (The British Psychological Society–Division of Clinical Psychology, 2013) The position statement refers to the reliance on subjective clinical judgment, biological emphasis, decontextualization, ethnocentric bias, discrimination, and stigmatization, and so on as additional reasons to abandon psychiatric diagnoses.

However, there is no convincing evidence that the suggested proposal of psychological formulation satisfies relevant scientific concerns, since psychological formulation faces even greater difficulties with regards to reliability, validity, and reliance on subjective clinical judgment, and so on. Furthermore, it is one thing to recognize the neuroscientific limitations of *DSM* and *ICD* diagnoses, and another to maintain that these limitations render the diagnostic systems so problematic that they cannot even be used for purposes of clinical description, clinical research, and administrative tasks. BPS DCP has subsequently developed the Power Threat Meaning Framework as a psychological alternative to psychiatric diagnosis (Johnstone and Boyle, 2018). Although the framework is popular among certain communities highly critical of psychiatry, it has largely been ignored by clinicians given its shortcomings (Morgan, 2023), and in particular, the framework is virtually unknown in the United States (Raskin et al., 2022).

Given the obvious limitations of psychological formulation in serving the pragmatic tasks that *DSM* and *ICD* currently serve in the

system, attempts to eliminate psychiatric diagnosis altogether are unrealistic and harmful in our opinion. Diagnoses such as schizophrenia and bipolar disorder, while they may not reflect the existence of categorically distinct disease entities and do not provide etiological explanations, nonetheless capture important aggregate differences in clinical presentation and diagnostic validators; they allow for a convenient way to convey probabilistic information necessary for competent clinical care, such as risk factors, longitudinal course, prognosis, and available treatments. In due course, they will be replaced by diagnostic constructs that are able to capture such information more efficiently and powerfully. It is the case that psychiatric diagnoses often generate significant societal and professional discrimination and stigma, but these problems are not inherent to the classification itself. When utilized appropriately with clinical judgment, complemented by a comprehensive clinical characterization, and awareness of limitations, psychiatric diagnosis serves to enhance our understanding of the patient, informs treatment, and provides a useful language to communicate about similar problems across the population.

NAVIGATING DIAGNOSTIC PLURALISM

In light of the preceding discussion, we offer some reflections and suggestions on how clinicians can navigate the current landscape of diagnostic pluralism.

- Diagnoses, whether categorical or dimensional, offer condensed information about a patient's presentation, but they cannot substitute for a comprehensive clinical characterization.
- Diagnosis should be based on a comprehensive clinical evaluation, and when we think of diagnosis, we should also think of diagnosis as a process (and not simply as a label).
- Although operationalized criteria are useful for research purposes, clinicians tend to use prototypical descriptions that allow for fuzzy boundaries and flexible application, and that do not make strict realist assumptions about the nature of the categories.
- Just as *DSM* diagnoses can be made in a variety of ways in clinical and research settings (clinical interview, rating scales, and standardized interviews such as SCID), alternatives such as HiTOP should allow for flexible use to facilitate clinical uptake.
- *DSM*, HiTOP, RDoC, *PDM*, and other frameworks are not mutually exclusive; they can be viewed and should be used in a complementary manner. In a manner of speaking, *DSM* is a coarse-grained categorical approximation of HiTOP's dimensional and hierarchical schema. Although *DSM* constructs are not officially included in HiTOP, clinicians can use the syndromic level, in between symptom/traits and subfactors, to translate between the two frameworks. HiTOP hierarchical elements can also be incorporated into *DSM* constructs, and it is not uncommon, for instance, for clinicians and researchers to categorize *DSM* categories as belonging to internalizing and externalizing disorders even though internalizing and externalizing spectra are not officially part of the *DSM*.
- Clinicians are generally agnostic on the issue of the "latent structure" of psychopathology. Categorical diagnoses need not correspond to the latent structure for them to have clinical utility or for them to carry clinically useful discriminatory information. Clinical utilization of categorical or dimensional classifications is a separate issue from our best scientific understanding of the nature of psychopathology. Clinicians care about what framework better allows them to assess the patient and match the patient to available treatment options. *DSM*/*ICD* have the historical advantage here given that nearly all available practice guidelines and regulatory approval of medications refer to *DSM*/*ICD* categories. Thus, even when clinicians are using HiTOP, they will have to refer at present to *DSM*/*ICD* diagnoses to ensure practice guidelines are being adhered to and to determine the appropriate pharmacological treatment. Although it is true that pharmacological treatments such as SSRIs have broad effects across the internalizing spectrum, there are important differences in pharmacological treatment options for disorders within the internalizing spectrum that require being mindful of the diagnostic distinctions among, say, major depression, generalized anxiety, and obsessive-compulsive disorder. Furthermore, clinically important distinctions, such as between unipolar depression and bipolar depression, are currently not captured by HiTOP.
- Dimensional approaches often look at symptom distribution in a population; however, clinicians are interested in individuals whose status as disordered changes dynamically with time. A depressed patient, for example, is not always depressed. Dimensional distribution of depression symptoms in a population has little direct relevance to that. Scientific approaches that take into account such "phase transitions" between depressed and nondepressed states are valuable and emphasize categoricity of dimensional phenomena at an individual level.
- Fine-grained dimensional characterizations do not generally fit well with the flow of clinical work in contexts such as brief psychiatric appointments or in the emergency room evaluations. In such contexts, the lesser cognitive and administrative burden of *DSM*/*ICD* (including the use of "not otherwise specified" categories) while guiding treatment is a distinct advantage.
- HiTOP requires categorical cutoffs for clinical application. At present, these cutoffs are determined by *t*-scores, but future research should seek to determine these thresholds based on relevant clinical data.
- One of the crucial tasks of *DSM* and *ICD* diagnoses is to rule out medical and neurological diseases as well as substance intoxication and withdrawal as causes of psychiatric symptoms. Dimensional systems and formulation-based alternatives have not so far formally included such considerations of differential diagnosis within the frameworks.
- Developments in classification should be complemented in their conceptualization with theoretical developments in areas such as network theory, clinical staging, and phenomenological psychopathology.
- *PDM* is particularly useful for psychodynamically oriented clinicians seeking to complement *DSM*/*ICD* with a psychoanalytic formulation; however, its uptake is limited for clinicians working within other theoretical orientations.
- At present, views regarding the clinical utility of diagnostic frameworks are heavily influenced by the theoretical orientations of the clinicians.

CONCLUSIONS

Advancing psychiatric knowledge and enriching clinical practice requires the profession to embrace a plurality of diagnostic and explanatory frameworks (Aftab and Ryznar, 2021; Aftab and Stein, 2022; Jerotic and Aftab, 2021). Researchers have had to develop new frameworks to guide neuroscientific research efforts because it has become clear that limiting research studies to *DSM* and *ICD* categories has hindered scientific progress, but there nonetheless remains a need for an official classification—a role presently fulfilled by *DSM* and *ICD*—that provides a shared language for clinicians and researchers as well as permit other tasks such as administrative documentation, health care provision, insurance reimbursement, and legal and forensic use. Alternative approaches such as RDoC and HiTOP are not yet able to serve these clinical needs across all relevant contexts in a manner that would make *DSM* and *ICD* redundant. However, frameworks such as HiTOP and *PDM* can be productively used in conjunction with *DSM* and *ICD* in clinical settings, and they offer various advantages to clinicians. It is important for the psychiatric professions to make clear the limitations and many deficiencies of *DSM*/*ICD* approach, but to also recognize the difficulty of developing better alternatives that can completely replace *DSM*/*ICD* in clinical settings (Reed, 2018). For the near future at least, we are looking at a landscape of nosological pluralism, where multiple classification systems and frameworks will be employed for different settings and different purposes. In such a context, the need for a shared language to communicate and translate information

remains essential; the wide acceptance of *DSM* and *ICD* has largely been due to their success at providing this common language (Pichot, 1994). A recurrent lesson in the history of psychopathology is one of humility, and it is better for nosologists of today to underpromise and overdeliver rather than vice versa.

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