A Multi-Dimensional Pluralist Response to the DSM-Controversies

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Psychiatric classification is highly controversial, as could be witnessed again with the latest revision of the Diagnostic and Statistical Manual of Mental Disorders *(DSM). These controversies comprise multiple kinds of critiques by a variety of actors. It is unlikely that all these issues will be overcome by one perfect solution in the future. Rather, it is precisely the DSM's "one-size-fits-all-approach" that lies at the root of many of the current problems. To restore the scientific and public credibility of psychiatric classification, a multi-dimensional pluralist response is thus needed: (1) theoretical pluralism, meaning a promotion of different research projects and heuristic strategies, (2) taxonomic pluralism, which allows for different classifications used in research versus clinical practice, and (3) participatory pluralism, which concerns the diversity of perspectives and stakeholders in DSM-revisions.*

1. Introduction

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) has elicited numerous criticisms throughout its history. Its particularly controversial status has not been resolved by the recent release of the DSM-5 (APA 2013); rather, the new edition has amplified debates in psychiatry as well as philosophy and the wider public. To a certain extent, such controversies are to be expected because of the influential role the DSM plays in science and health care. Researchers have often been required to use the DSM classification to get funded and published, clinicians need to use it for diagnosis,

and patients need a DSM code to get reimbursed for treatment.[1] Classification in psychiatry shapes the course of research as well as the clinical reality of those dealing with mental illness. Furthermore, it affects public views of mental health and has a special social significance due to its connection to beliefs about normality, rationality, and responsibility. Yet, the amount and variety of dismissals of the DSM indicates that psychiatric taxonomy is in a state of crisis and suffers from a substantial lack of credibility (cf. also Poland and Tekin 2017). In the following, I will start by sketching out some of the main lines of DSM-critiques (section 1.1). This ubiquity of criticisms, I will argue, is unlikely to be met by one superior approach or strategy. Rather, it requires a combination of different kinds of pluralisms (section 1.2), which will then be spelled out and supported in the remainder of the paper.

1.1. A Plethora of Critiques

Among the multitude of critical voices, the following strands are particularly prevalent (cf. also Bueter 2018). A first (somewhat less widespread) type of debate focuses on the DSM revision process and often relates to issues of political legitimacy. For example, DSM revisions have been criticized as being overly influenced by pharmaceutical companies (Cosgrove et al. 2006; Cosgrove and Krimsky 2012), as lacking transparency (Spitzer 2008), or as being too exclusive regarding participation in the revision process. The latter complaint has been combined with a plea for the integration of patients and families (Sadler and Fulford 2004) and greater disciplinary diversity in the DSM task force and workgroups (Sisti and Johnson 2015). Moreover, the American Psychiatric Association's (APA) authority to provide the diagnostic manual to guide all mental health care has also been called into question (Frances and Widiger 2012). Generally, these criticisms highlight and question the DSM's powerful position and the network of economic and socio-political relations it is part of (Sadler 2013). They are, moreover, not just discussed in the scientific realm but extend to the wider public, as is the case with the following issue.

A second prominent concern is the worry over an unreasonable diagnostic inflation and pathologization of everyday problems like grief or shyness (e.g., Lane 2007; Horwitz and Wakefield 2012). Such critiques of psychiatric medicalization have a long tradition. They date back to the anti-psychiatry movement of the 1960/70s, which indicted psychiatry for turning forms of social deviance into medical problems as a means of

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1. This is the case for the USA; for example, most European countries use the WHO's ICD system. Since the DSM and ICD aim for compatibility and share the general approach towards classifying mental illness, most criticisms discussed here apply to both.

power (e.g., Szasz 1961; Laing and Esterton 1964; Rosenhahn 1973). Concerns about medicalization moreover get fuelled by historical examples of problematic diagnoses such as drapetomania, hysteria, or homosexuality (e.g., Bayer 1981), as well as by more recent increases in diagnoses such as ADHD (e.g., Conrad and Potter 2000).

More restricted to the academic world are a number of controversies about the epistemic quality and justification of the DSM's categories and diagnostic criteria. These typically argue that the DSM lacks in validity and/or utility, which is often attributed to the DSM's atheoretical and operational approach to classification (see section 2). For instance, several authors have argued that the operationalist criteria of the DSM do not do justice to the complex phenomenology of mental disorders (e.g., Andreasen 2006; Kendler 2016; Parnas and Sass 2003). This misrepresentation of the clinical reality is thought to undermine clinical utility, which is another point of concern (e.g., Sadler 2005; First and Westen 2007; Tekin 2015).

Another highly influential critique relating to the DSM's diagnostic categories holds that the taxonomy currently lacks validity, or stalls the way towards more valid diagnoses, due to its atheoretical approach to classification because it differentiates diagnoses by their observable symptoms rather than their underlying causes and pathogenesis (cf., e.g., Murphy 2006; Hyman 2010; Tabb 2015; Tsou 2015). In order to achieve the knowledge needed to move forward towards an etiology-based classification, inquiry and investment into theoretical alternatives is called for.

The most prominent example of a developing alternative is probably the *Research Domain Criteria Project* (RDoC) of the *National Institute of Mental Health* (NIMH),[2] which is based much more explicitly on neuroscience and genetics (even though it can be compatible with a variety of approaches, see sections 2.3 and 3.1). The NIMH funding of research will no longer presume DSM categories but rather prefer studies utilizing the RDoC. Again, the rationale for this change is the DSM's alleged lack of validity (Insel 2013).

Importantly, underlying discussions about how to proceed to improve our psychiatric knowledge, and what kind of progress can be expected, are assumptions about the nature of mental disorders that range from the empirical to the epistemological and metaphysical realm. This is reflected in debates about dimensional versus categorical approaches. It also relates to the questions of whether mental disorders are usefully approached as natural kinds versus more complex entities, how suitable (anti-)reductionist

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2. Other noteworthy examples include the dimensional *Hierarchical Taxonomy of Psychopathology* (HiTOP; cf., e.g., Kotov et al. 2017) or the Psychodynamic Diagnostic Manual (Lingiardi and McWilliams 2017).

approaches are to the subject-matter of psychiatry, just how causally complex mental disorders are, or how to evaluate the relative importance of biological, social, and psychological factors (cf., e.g., Zachar 2000; Kendler 2005; Widiger et al. 2007; Schaffner 2008, Kendler et al. 2011; Schaffner 2012; Kincaid and Sullivan 2014; Borsboom 2017; Kotov et al. 2017).

1.2.   A Multi-Dimensional Pluralist Response

The sketched plethora of critiques demonstrates how many issues are at stake in revising or revolutionizing the DSM, how controversial all of these issues are, and that they target the DSM regarding different contexts: its lack of clinical utility, of public trustworthiness, of representing the phenomenology of mental disorders, and of successful etiopathogenic explanations allowing for better treatment. What this shows is the variety of purposes the DSM is supposed to serve (see section 2). Due the complexity of psychopathology as well as of the task at hand, it is unlikely that one perfect solution will emerge in the future (e.g., out of the RDoC) and overcome all these problems. Rather, it is exactly this "one-size-fits-all" approach imposed upon the DSM that is fundamental to many of the problems (cf. also Tsou 2015). Instead of hoping for a perfect successor to the DSM in all respects, I therefore suggest a multi-dimensional pluralist strategy in response to the current crisis, combining (A) theoretical pluralism, (B) taxonomic pluralism, and (C) participatory pluralism.

(A) In the following, I will point out the importance of developing alternatives to the DSM classification, focusing on the RDoC. I first reconstruct the NIMH's rejection of the DSM as a change in heuristic strategy that is well-justified by the history of DSM-led research. However, it is important to consider the possibility that the lack of progress made by this research is not due to the DSM's syndromal approach alone but also to the complexity of mental disorders (section 2). This recommends an implementation of theoretical pluralism as a means of risk spreading as well as of enhancing critical scrutiny (section 3).

(B) Secondly, RDoC was presented as an alternative framework for organizing research into psychopathology that is hoped to allow for progress, not as a full competitor to the DSM (yet). This leads to the question of how to deal with the DSM in the future; for example, if and when it should be replaced or restructured according to new findings from the RDoC. I will argue that the NIMH's decision provides an opportunity to reconceive the DSM as a manual primarily serving clinical practice, since the contexts of research and health care come with different needs that are hard to reconcile. For example, they might prioritize treatment outcomes or causal pathways as classificatory basis (section 4).

(C) Another difference between a taxonomy for research and health care pertains to the potential harms of taxonomic changes. In the case of a practical manual, such changes risk adverse effects on patients (e.g., over- or under diagnosis and -treatment). Instead of trying to specify standards for such decisions in advance, a procedural view on how such decisions are made is recommended. As the respective decisions involve value-judgments and deal with significant uncertainty, a pluralism of participants in DSM revisions could improve democratic accountability and trustworthiness. This requires a diversity of scientific and clinical perspectives as well as the representation of different stakeholders, especially patients and their advocates (section 5).

2. From the DSM to RDoC

2.1. The DSM's Atheoretical Stance

The DSM taxonomy is based on observable patterns of symptoms of mental disorders. This "operational" and "atheoretical" approach was introduced in 1980 with the DSM-III in order to overcome the lack of interrater-reliability characterizing DSM-I and -II diagnoses. These first editions were informed by a background in psychoanalytic theory, which was subject to a growing scientific and public skepticism. Moreover, they did not contain explicit criteria for most diagnoses but confined themselves to short descriptions of the different disorders. This led to considerable variability in diagnosing patients; for example, comparative studies of the UK and USA showed huge national differences in the frequency of diagnoses such as schizophrenia. At the same time, the discovery of the first effective drugs for mentally ill patients starting in the 1950s (e.g., lithium, imipramine, chlorpromazine) made it a priority to identify those patients that would benefit from certain drugs and to provide suitable study populations, and pharmaceutical companies as well as health insurers pushed for more standardized diagnoses (on the historical background of the DSM-III, cf., e.g., Mayes and Horwitz 2005; Cooper 2010; Tsou 2011; Shorter 2013).

A primary goal of the DSM-III was, accordingly, to increase reliability: firstly, by formulating explicit diagnostic criteria that could be easily observed in clinical settings; secondly, by being agnostic regarding etiopathogenesis (unless well-established) in order to create one common manual usable by all (APA 1980, p. 6). Only with this third edition did the DSM become as highly influential as described above, serving as a common manual across theoretical backgrounds and for a number of different purposes. This influence came with a multitude of different goals

that needed to be reconciled: for example, increasing interrater-reliability as well as clinical utility for making treatment decisions, suitability for research, acceptability across theoretical camps, compatibility with the ICD, and consistency with data bearing on the validity of diagnostic categories (cf. APA 1980, p. 2 f).

The DSM-III architects followed a particular heuristic strategy in pursuing these goals. They considered reliability as a first and necessary step on the way to a valid classification. Stepping away from (psycho-analytical) speculative etiology and adopting a neo-Kraepelinian stance, they decisively portrayed psychiatry as a branch of medicine, dealing with real, discrete, and categorical diseases, and emphasized careful clinical description of syndromes as a first step on the way to full (etiological) validation (on the Kraepelinian background, cf. Decker 2007; Jablensky 2007). This overall approach was first implemented in the well-known Feighner criteria, central to which is the proposal of five interacting phases of validity: (1) clinical description of symptoms as well as other features such as onset or sex; (2) laboratory studies; (3) delimitation from other disorders; (4) follow-up studies showing a similar clinical course; (5) and family studies (cf. Robins and Guze 1970; Feighner et al. 1972). These criteria were understood to mutually support each other and to incrementally increase diagnostic validity: They aimed to pick out homogeneous populations, i.e., patients that suffer from one and the same disorder, without necessarily knowing the causal details of that disorder yet.

It was clear that these phases were not all available at the time (e.g., laboratory markers of disorders) and that their application required some judgment (e.g., a different course does not necessarily mean different disorders, but might simply be explained by one disorder with variable course). However, the Feighner criteria were conceived of as a crucial step towards a fully reliable and valid system. An important function of this step was to create a suitable basis for research in order to gain knowledge of the causal background of mental illnesses.

> [T]hese five phases interact with one another so that new findings in any one of the phases may lead to modifications in one or more of the other phases. The entire process is therefore one of continuing self-rectification and increasing refinement leading to more homogeneous diagnostic grouping. Such homogeneous diagnostic grouping provides the soundest base for studies of etiology, pathogenesis, and treatment. (Robins and Guze 1970, p. 984)

The neo-Kraepelinian approach thus exemplified a three-step picture of classification: A scientific taxonomy firstly requires reliability, which makes diagnostic validity possible, which ultimately leads to etiopathogenic

validity by providing a better basis for research (as well as maybe hints about possible etiological and pathophysiological mechanisms).[3] However, as the Feighner-phases themselves, research targeted at diagnostic versus etiopathogenic validity will interact and each help to stabilize and improve the diagnostic categories. These steps should thus not be conceived of as strictly chronological.

Moreover, diagnostic categories were intended to be based on empirical data establishing their reliability and validity as opposed to clinical judgment and expert consensus (cf. Feighner et al. 1972, p. 57). The DSM-III, however, did not list only diagnoses sufficiently established according to the Feighner criteria, nor could it have. Regarding its practical purposes, it had to be comprehensive and could not just exclude all conditions with insufficient data. This continuing role of clinical judgment was acknowledged by the editors (APA 1980, p. 8). Ultimately, however, validating data were supposed to follow and etiological knowledge would be achieved based on comparable, communicable, and homogeneous diagnostic groups.

2.2. Problems with the DSM's Neo-Kraepelinian Heuristic—and how to Interpret Them

Sometimes called the "first revolution" in psychiatric classification, the DSM-III was at first widely appreciated as putting psychiatric classification on more solid scientific grounds and succeeded in creating a shared manual. It is also commonly considered to have increased reliability. On the downside, it has proven very difficult to generate consistent data validating the diagnoses. As pointed out above, it is now often argued that this results from the DSM's atheoretical approach, which should therefore be abolished in a second revolution that reintroduces current scientific theories about the etiology and pathophysiology of mental disorders into the taxonomy (e.g., Andreasen 1995; Follette and Houts 1996; Murphy 2006; Tsou 2015).

At its core, this debate about atheoretical versus theory-driven taxonomy is about the fertility of heuristic strategies. As depicted above, the Feighner group and the DSM-III architects hoped for careful clinical description of syndromes to identify homogeneous groups that would present suitable study populations and thereby promote scientific progress regarding etiopathogenesis and intervention. Unfortunately, most mental disorders are still

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3. Cf. Schaffner (2012) on this distinction between diagnostic and etiopathogenic validity. Etiopathogenic validators are external factors linked to diagnostic groups that clarify the pathogenesis of a disorder and point to its causes, e.g., certain neurophysiological or genetic factors.

not well-understood and difficult to treat. Not only has etiopathogenic explanation not been achieved, but also diagnostic validity according to the Feighner criteria remains problematic (cf. also the concise discussion in Tabb 2015).

For example, research based on DSM-diagnoses has so far failed to deliver laboratory tests and unequivocal biomarkers for mental disorders. Family studies and research on the genetics of mental disorders have also not been able to confirm DSM diagnoses. On the one side, research on disorders such as schizophrenia reveals a remarkable degree of genetic complexity that undermines the assumption of schizophrenia being one monolithic thing. On the other side, different disorders exhibit shared genetic risk factors (cf. Hyman 2010 for an overview).

Relatedly, the DSM diagnoses also seem problematic regarding the delimitation of disorders. A case in point is the high rate of comorbidity of DSM diagnoses. Up to 45% of all diagnosed patients satisfy criteria for more than one DSM disorder, and for some disorders, patients with only one diagnosis are the exception rather than the rule. Moreover, there is a significant and systematic overlap between certain categories, such as, for example, mood disorders (e.g., Major Depressive Disorder) and anxiety disorders (around 40%) or drug-dependence (around 30–38%) (cf. Hasin et al. 2005; Kessler et al. 2005; Moffitt et al. 2007).

High comorbidity rates in general and systematic overlaps in particular may be taken to indicate a lack of diagnostic validity, i.e., that the DSM diagnoses are unsuccessful in identifying populations that are homogeneous regarding underlying pathophysiological mechanisms (cf. van Loo et al. 2013 for a discussion). It is important to note, however, that such an interpretation presumes certain background assumptions about the nature of mental disorders. For example, assessing the implications of psychiatric comorbidity rates depends on how much comorbidity is considered likely, and whether mental disorders should roughly match comorbidity rates of somatic diseases. If a mismatch is taken to signal low validity, this presumes a certain ontological outlook on mental illnesses as discrete entities basically defined by underlying dysfunctions. While such an assumption seems plausible and is deeply engrained into the DSM as well as much of its criticism, comorbidity rates might also be taken to indicate that mental disorders differ from somatic disorders or do not separate neatly into different kinds (Hacking 2013).

The general question involved in interpreting comorbidity is whether and how far problems with validity can be attributed to the DSM's atheoretical stance. The DSM might just be getting its diagnostic groups wrong, because clinical presentation is not a good guide to etiology. On the other side, the lack of progress might also be due to a very high complexity of

mental disorders, with multiple (biological as well as psychological) factors being relevant and processes on various levels interacting with each other (cf., e.g., Schaffner 2008). The expectation to find underlying causal mechanisms defining distinct disease entities that match up with a certain clinical presentation, as well as course and treatment response, might prove too reductionist, whether one follows a syndromal or theory-driven approach to classification.

My point here is to highlight the possibility that it might be the very nature of mental disorders that complicates psychiatric classification, and thereby the role related metaphysical background assumptions play in discussing the DSM's atheoretical stance. This is also important regarding another common critique of the DSM, namely that it allows for too much heterogeneity on the level of symptoms in order to be likely to pick out populations that are homogeneous regarding underlying disorders or dysfunctions. Symptomatic heterogeneity is enabled by the DSM's use of polythetic criteria sets. As an example, the diagnostic criteria for Borderline-Disorder consist of nine possible symptoms of which a patient must display at least five in order to be diagnosed (APA 2013, p. 663). Thus, two individuals would, in principle, have to share only one symptom to share a diagnosis, and there are 256 possible combinations (Olbert et al. 2014).

Again, polythetic criteria and symptomatic heterogeneity do not necessarily imply that a diagnosis is invalid, since a shared underlying pathophysiology can result in clinical pictures with some diversity (e.g., due to interactions between biological factors and social or psychological ones). Probably nobody would prefer to form 256 different groups and study them all separately, awaiting to reveal 256 dysfunctions. Similar to interpreting comorbidity, the question here is how much diversity in clinical representation is expectable, which depends one one's outlook on the ontology of mental disorders.

For example, Poland et al. (1994) have characterized the DSM classification as relying on an assumption of syndromes with unity (AOSU). They interpret this assumption as an understanding of mental disorders as natural kinds exhibiting law-like relations between causal microstructure and surface phenomenology. Such law-like relations presumed, surface phenomenology would provide a good guide in searching for etiological understanding. The opposite pole of AOSU is an assumption of symptomatic variability (AOSV). AOSV can be based on a view of mental disorders as constituted by underlying dysfunctions, which, however, tend to produce a variety of signs and symptoms. Due to the complexity of mental disorders and diversity of possible impact factors, there is no uniform relation between a dysfunction and its clinical presentation. The closer one's ontological outlook on mental disorders is to AOSV as opposed to AOSU, the less

likely it becomes to find out about underlying dysfunctions or pathophysiological mechanisms by starting from symptoms. Contrary to Poland et al. (1994), the DSM-III to -5 can be placed somewhere in between these poles, since they allow for considerable symptomatic heterogeneity, while at the same time expecting that careful clinical description can lead to pathophysiological and etiological knowledge.

Metaphysical background assumptions thus feed into the definition of suitable research goals (e.g., discovering causal mechanisms clearly delimitating different disorders) and inform beliefs about the fertility of heuristic strategies. The success of such strategies in pursuing their own goals can then be evaluated on empirical grounds. It is widely agreed that the DSM-based research has not led to much progress towards diagnostic and etiopathogenic validity in understanding mental disorders. What is less clear is in how far this is due to its atheoretical approach rather than to the complexity of mental disorders.

2.3.   The Development of RDoC

Prior to the release of DSM-5, there were hopes for a paradigm shift moving psychiatric classification to an etiology- instead of syndrome-based system, fuelled by statements from members of the DSM-5 Task Force (cf. Kupfer et al. 2002, xix). Yet, the DSM-5 has not brought about the envisaged paradigm shift. Meanwhile, however, the NIMH has been working on the RDoC to create a framework for research that may eventually lead to a theory-driven alternative classification, and announced its implementation in NIMH funding decisions shortly before the release of DSM-5 (Insel 2013).

Explicitly addressing the issue of heuristic fertility, Stephen Hyman, former director of the NIMH, has criticized that the DSM hinders etiological research and the gain of causal knowledge about mental disorders (Hyman 2010). He argues that the dominant position of the DSM classification has led to a situation in which its categories are constantly reified. Although the DSM has always presented its diagnoses and criteria sets as provisional, not as the ultimate categories of mental illness,[4] they are, in practice, treated as such—especially when research funding is dependent on using DSM diagnostic groupings. The DSM thereby has a strong effect on what questions can be studied; as time goes by and the reification process continues, it becomes harder and harder to think outside the DSM box. This creates regulatory as well as conceptual obstacles for research into alternative ways

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4. It is worth emphasizing that the various DSM introductions point out the provisional character of the classification and mention current problems. Criticizing the DSM for not delivering an ultimate classification of mental disorders can sometimes become unfair, if this is not acknowledged.

of classifying and understanding mental disorders—a situation Hyman describes as "epistemic prison" (Hyman 2010, p. 157).

Consequently, he calls for more research into alternatives based on theoretical accounts. His argument is thus one for a greater scientific autonomy, supported by the persisting problems after decades of research dominated by the DSM. The NIMH's development of RDoC as a framework for research is in line with this argument. RDoC differentiates between basic domains of mental functioning, e.g., "Positive Valence Systems," "Cognitive Systems," or "Systems for Social Processes." These are further divided into constructs such as "Attention," "Reward Valuation," or "Understanding Mental States." Such constructs constitute possible targets of research that cut across DSM diagnostic groups and can be studied across a range of different units (e.g., genes, molecules, circuits, physiology, or behavior) (e.g., Insel et al. 2010). It thus presents the opportunity to escape the epistemic prison created by the DSM, which will hopefully lead to substantial progress.[5]

On the other side, the introduction of the RDoC leads to new questions about psychiatric classification. For instance, it is not determined by the framework itself what kind of research will be funded and which units and constructs will be prioritized. I will argue in the following section that the most promising heuristic strategy here is to accommodate as much theoretical pluralism as possible.

3.   Theoretical Pluralism

3.1.   Pluralism in Basic Research

Regarding the direction of future research, it is important to note that the RDoC project has been characterized by some of its architects as based on the following assumptions about mental disorders:

> RDoC classification rests on three assumptions. First, the RDoC framework conceptualizes mental illnesses as […] disorders of brain circuits. Second, RDoC classification assumes that the dysfunction in neural circuits can be identified with the tools of clinical neuroscience […]. Third, the RDoC framework assumes that data from genetics and clinical neuroscience will yield biosignatures that will augment clinical symptoms and signs for clinical management. (Insel et al. 2010, 749)

Conceptualizing mental disorders as dysfunctions in brain circuits is not necessarily equivalent to a reductionist approach that neglects psychosocial

5. The RDoC is continuously developed and updated online, see https://www.nimh.nih.gov/research-priorities/rdoc/constructs/rdoc-matrix.shtml.

factors (Bolton 2013). Nevertheless, it does put the emphasis on looking for a certain kind of biological dysfunction and assumes that this will ultimately result in improvements for diagnostics and clinical care. According to this, the ideal outcome of research in line with RDoC would be an understanding of the etiology and pathophysiology of mental disorders, which comes with biomarkers to be used for diagnosis and delimitation of different conditions, and ultimately leads to progress regarding treatment by identifying the right target mechanisms.

It will probably take decades until the fertility of RDoC in relation to this ideal can really be assessed. To enhance chances of success, it is important that RDoC-based research is accommodating a certain pluralism of theoretical approaches. In principle, the RDoC is compatible with research on different domains and constructs as well as units of analysis and should avoid focusing exclusively or too narrowly on certain units (e.g., genes and circuits) or levels of analysis. As a matter of fact, the RDoC has also been presented in other articles in a way that emphasizes its aim or potential to be an integrative and translational approach (e.g., Cuthbert and Insel 2013; Cuthbert and Kozak 2013; Miller et al. 2016).[6]

One argument in favor of such a pluralist and integrative approach to research based on the RDoC can actually be drawn from the history of the DSM. As discussed earlier, the lack of substantial progress towards etiopathogenic validation can most likely not be exclusively attributed to the DSM's atheoretical stance, but will also result from the complexity of mental disorders. Concentrating research too narrowly on neural circuits might equally end up unable to find essential dysfunctions that are at the same time helpful for diagnosis and intervention. Replacing the DSM with another epistemic prison by reifying certain constructs that ultimately might not be successful should be avoided (cf. Tabb 2015). As a means of risk spreading, it is thus recommendable to enable research from a variety of theoretical perspectives—within and probably also beyond the RDoC.

Put more generally, the complexity of psychopathology can be taken to support an epistemological pluralism that stresses the necessary partiality of all perspectives (cf., e.g., Dupré 2015). Relatedly, Tsou (2015) argues for pluralism on the basis of the theory-ladenness of observation and the consequent fertility of a variety of points of view. He relates this argument to the DSM and criticizes it for not being "purely descriptive." Similar

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6. With Joshua Gordon replacing Insel as director in 2016, the architecture and use of RDoC has moreover become more open to re-evaluation by the NIMH, making it even more difficult to predict the RDOC's concrete future.

points have been made by several other authors (e.g., Follette and Houts 1996; Murphy 2006).[7]

The general point in these criticisms, which applies to the DSM as well as RDoC, is that theory is inevitable and should be explicated, in order to allow for a higher degree of critical scrutiny. This scrutiny is enhanced by the presence of a diversity of viewpoints, because such diversity improves chances to detect implicit assumptions that otherwise get taken for granted (Longino 1990). Focusing exclusively on a certain research program threatens to make theoretical, metaphysical, or value-laden background assumptions invisible. Thereby, it can be detrimental to research by creating blind spots and a lack of alternative explanations (Bueter 2015). To sum up, incorporating theoretical pluralism is well-advised as a means of risk spreading and enhancing critical scrutiny.

3.2. Pluralism in Applied Research

Another important point to make here is that while a lack of progress or creation of blind spots by a too narrow focus is, of course, unfortunate from the perspective of research, the people who would carry most of this burden will be the patients waiting in vain for better diagnosis and treatment. At the same time, focusing too much on basic research (even in a pluralist manner) threatens to be detrimental to more applied research.[8] As Reardon (2017) argues, it is already the case that the NIMH's funding of clinical trials has decreased significantly since the introduction of RDoC.

One might take this danger as not being too big in light of the bulk of medical research in general being done by the pharmaceutical industry, which primarily aims for interventions. Such research may very well continue to target symptom clusters in drug development, even if, ideally, research into etiopathogenesis would at some point lead to better targets for causal interventions. However, it is well-known that industrial research comes with issues regarding its trustworthiness. It also frames mental disorders in a certain manner, namely as biological problems to be treated with drugs (e.g., Musschenga et al. 2010). Cooper (2017) argues for a fostering of more user-led research to increase a focus on patient-relevant outcomes as well as ecological and psychological aspects of mental illness,

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7. In order to be fair, such critiques have to take into account that the DSM aimed to be atheoretical regarding etiology, which is not equivalent to a claim of being completely theory-free. As the latter is most likely impossible, this does, however, not render the argument for pluralism as a means for critical scrutiny obsolete.

8. This seems especially risky if one considers it not only as very time-consuming, but as unlikely that research on lower-level causal mechanisms will be helpful with regards to higher-level phenomena in mental disorders (cf. Hoffman and Zachar 2017 for a critical discussion).

which seems well-advised. Calling for more pluralism in psychiatric research to ultimately improve psychiatric classification thus relates to different theoretical perspectives being integrated with the RDoC framework (and maybe even further outsider perspectives), as well as to approaches targeting different aspects in applied research in particular, as this should not be the sole domain of the pharmaceutical industry. As resources are limited, however, this leads to the important question of how to decide about resource allocation and funding priorities.[9]

In my view, this question is best dealt with in a procedural manner. Rather than determining in advance what kind of research approaches to prioritize, one should look at how these decisions are made and by whom. Theoretical pluralism needs to be accompanied by a participatory pluralism (see also section 5), which includes researchers of different theoretical orientations, clinicians, clinical scientists, patients, and policy-makers into deliberations about how to distribute resources.

4. Taxonomic Pluralism: Differentiating Science and Practice

DSM-based research has disappointed many in terms of progress towards etiological and pathophysiological knowledge about mental disorders. The RDoC project, if accommodating a sufficient degree of theoretical pluralism, therefore presents a welcome change of heuristic strategy. On the other side, it creates the question of how to think about the relation between the two systems. I will argue that by separating psychiatric research from the constraints of DSM categories, RDoC also creates an opportunity to reconceive of the DSM as a manual primarily intended for practical purposes. At least for now, this would leave us with different (frameworks of) classification for research and practice (and possibly yet another one for administrative purposes). Such taxonomic pluralism is an advantage, because these contexts imply conflicting needs and thereby different standards regarding taxonomic decisions.[10] For instance, such divergences arise regarding the questions of what kind of evidence is most important and how much evidence is enough to legitimate taxonomic changes.

By elaborating this in the following, I will show how differentiating between clinical and scientific purposes of a classification of mental disorders allows for greater freedom of research on the one side, and for an

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9. Thanks to an anonymous reviewer for stressing this.
10. A similar idea to separate the theoretical from the taxonomic project has been advanced by Dupré (2001) regarding biological classification. His point that the taxonomy has several purposes besides guiding scientific research or answering theoretical questions fits well with psychiatric classification, which comes with the problem of how to balance the goals of health care, science, education, and administration (cf. also Binney (2015) on the compatibility of nosological pluralism in somatic medicine with Dupré's promiscuous realism).

increased focus on questions of clinical utility on the other. Moreover, it highlights the role of values in revising a taxonomy for clinical practices, which is forced to make decisions under considerable uncertainty. This, in turn, requires a proceduralist view focusing on the DSM revision process and recommends an inclusion of a diversity of perspectives and stakeholders in this process (see section 5).

4.1. What Kind of Evidence?

Deciding whether and when to change the DSM according to new results possibly generated by RDoC hinges on what kind of evidence is considered most significant—as does the introduction of changes to diagnostic categories and criteria via the current incremental processes of DSM-revisions. Respective decisions require non-empirical judgments at several points; for example, when balancing the number versus quality of studies or assessing the impact of studies with populations that were formed by using slightly different diagnostic criteria. Here, I want to focus on what data are considered decisive in assessing the validity of a diagnosis. Contrary to what the ubiquitous criticisms of the DSM's lack of validity might suggest, "validity" in psychiatry is not a monolithic concept.[11] Generally, it is often taken to pertain to the question of whether a diagnostic category represents a distinct, real entity; validity allegedly "addresses 'the nature of reality'" (Kendell and Jablensky 2003, p. 5). "While there is no agreed upon concept of validity in psychiatry, valid diagnostic categories are generally understood as classifications that pick out real phenomena (i.e., categories that 'carve nature at the joints')" (Tsou 2015, p. 49).

The DSM-5 understands the validity of diagnoses as "the degree to which diagnostic criteria reflect the comprehensive manifestation of an underlying psychopathological disorder" (APA 2013, p. 5). To assess this degree, a variety of different validators is employed that are conceived of as correlating a diagnosis with external factors. This array of validators for diagnostic validity presents an extension and refinement of the Feighner criteria. It is organized chronologically and distinguishes between: antecedent validators (e.g., "familial aggregation" or "environmental risk factors"); concurrent validators (e.g., "biological markers" or "patterns of comorbidity"); and predictive validators ("diagnostic stability," "course of illness," "response to treatment"). The predictive validators and familial aggregation are marked as especially important (cf. Kendler et al. 2009).

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11. Its use also somewhat differs from psychology, which defines validity primarily with regard to psychometric tests. Feighnerian validity can, however, be seen as a particular version of construct-validity.

Taking for granted for now the adequacy of the DSM list of validators, two problems remain. Firstly, most DSM-disorders lack sufficient and methodologically appropriate studies on the complete array of validators. This is a problem of time and resources, not an epistemological matter of principle, to be sure. Yet, since resources will likely stay limited in the future, this does relate to the second problem, which is how to assess the relative weight and importance of the different validators. The critique of the DSM lacking validity often seems to presume that evaluating validity by such an agreed upon list of validators is relatively straightforward, resulting from an expectation that all of these different validators will ultimately line up. Yet, empirical research indicates that matters are more complicated. For instance, various ways of subtyping schizophrenia were found to perform quite differently regarding the validators (e.g., the Tsuang Winokur categories would be best regarding reliability and treatment response, while the ICD categories were best on diagnostic stability and familial aggregation [Kendler 1990]).

This empirical finding can also be supported by systematic philosophical arguments. The expectation that all validators will eventually agree stems from epistemological and metaphysical assumptions about the nature of mental disorders (i.e., real, discrete entities with essential pathologies) and the capacities of psychiatric research (i.e., discovering these real entities, explaining them by their underlying causes, thereby enabling successful intervention and reliable prognosis). A less reductionist and more pragmatist (or promiscuously realist) outlook can instead allow for a pluralism of validity concepts as well as for equivocal performances of diagnostic categories (e.g., Schaffner 2012; Zachar 2012).[12]

If validators conflict (or resources and data are limited), the assessment of diagnostic validity involves a ranking of their significance. This ranking can look different for clinicians aiming to treat patients and researchers looking to explain their ailments. As mentioned, the DSM has marked predictive validators as particularly important. The DSM-5 justifies this by their relevance to clinical practice:

> Until incontrovertible etiological or pathophysiological mechanisms
> are identified to fully validate specific disorders or disorder spectra,
> the most important standard for the DSM-5 disorder criteria will be

12. Such differences in philosophical background assumptions also imply varying delimitations of validity and clinical utility (and thereby varying lists of validators). For example, Kendell and Jablensky (2003) propose a sharp distinction between utility and validity based on an understanding of mental disorders as natural kinds and a realist conception of psychiatry. In contrast, an instrumentalist or pragmatist perspective can lead to an identification, or at least overlap, of utility and validity (cf. Schaffner 2012).

their clinical utility for the assessment of clinical course and treatment response of individuals grouped by a given set of diagnostic criteria. (APA 2013, p. 20)

This reflects a priority of the aim of successful intervention and treatment of patients. Such an emphasis on practical concerns gains further support by reconceiving the DSM as a tool for clinical practice and giving up inflated expectations of a taxonomy that serves health care and science equally well. Taxonomic pluralism can accommodate the fact that judging the importance of validators from the perspective of research can look different. For example, the aim of explaining mental illness could justify a focus on aspects of validity that are more closely connected to their pathophysiological origination, such as the presence of shared biomarkers or the identification of causal mechanisms.

Understanding the DSM as a practical tool also suggests a greater emphasis on other relevant qualities besides reliability and validity. For example, it has been argued that DSM-revisions should focus more on the clinical utility of proposed changes (e.g., First et al. 2004; First and Westen 2007). This involves evaluating the user acceptability, manageability, and accuracy of diagnostic criteria sets in field trials as well as, ideally, in clinical practice.

4.2. How Much Evidence?

Another point where differences between the perspectives of research and practice emerge is in determining what level of evidence is sufficient to justify changes. As mentioned above, the DSM-III's intention was to include etiological information when it is well-established. To overturn either individual diagnoses or the whole system at once thus requires specifying what it means to be well-established and how much evidence is enough for that. Answering this question turns on the weighing of potential risks and benefits, which can, again, differ from the perspectives of research and practice. For instance, focusing research funding on the RDoC framework may risk to set the field on a misguided path, but this comes with a potential for innovation.

Defending the RDoC as a new framework for research is, however, not the same as arguing that it should replace the DSM in all other contexts. Considering practice, potential benefits of such a change (at some future time) would be more successful interventions into medical disorders enabled by their causal explanation. On the other side, there are also potential harms to be considered here. Since the DSM is so deeply engrained into the complex network of health care related practices, radical changes to the DSM classification will have implications for clinical practice and

lead to considerable efforts regarding administrative and educational re-organization. Importantly, substantial alterations of the taxonomy can lead to changes in what patients are diagnosed with, and possibly how they are treated and what treatment they get reimbursed for. If these alterations are premature, they thus risk undermining the well-being of patients. More-over, continued theory-driven change of the taxonomic system might fur-ther undermine psychiatry's public credibility and increase the problems of trust the DSM already faces.

The latest DSM revisions have therefore taken a cautious approach re-garding changes to the taxonomy. For example, the guidelines for making changes have been implemented so that potential harms and adverse effects on patients are considered. The general thrust is to avoid premature alter-ations, thereby facilitating stability and continuity, since recurrent change is considered to be detrimental to health care. Consequently, the DSM-IV and -5 maintained a similar approach to decisions about the inclusion of a new and the exclusion of an old diagnostic category:

> DSM-IV made the conservative policy decision to require the same degree of empirical evidence to remove a diagnosis as to add one […]. This was intended to stabilize the diagnostic system and avoid arbitrary changes in either direction. […] This resulted in the DSM-IV grandfathering in a number of diagnoses whose tenure in the system was based on historical tradition rather than the level of empirical evidence that would have been required to gain entry as a new diagnosis in DSM-IV. (Frances and Widinger 2012, p. 121ff)

Similarly, the DSM-5 Task Force acknowledged that not all given categories have the level of empirical support required for new diagnoses to be included (cf. Kendler et al. 2009). Stability is thus given priority over the requirement of evidential support, in order to avoid risks for patients. This can be reasonable and responsible from the perspective of health care, even though it does not square well with a view of the DSM as a scientific document.

4.3. Translational Measures

To sum up, psychiatric classification comes with different priorities in the contexts of clinical practice versus research, which warrants diverging as-sessments of evidence, for instance, by emphasizing predictive rather than antecedent validity, focusing on utility rather than explanation, stability rather than innovation, or comprehensiveness over evidential support. The different contexts of clinical practice and research would therefore both profit from giving up the idea of the DSM as an all-purpose manual and reframing it more narrowly as a tool for clinical practice. A counter-argument to consider here is whether this would not isolate clinical

practice from research too much, and thus deprive patients of the potential benefits of new results. Here, I want to make two points.

Firstly, differentiating more clearly between a classification for practice versus research clearly requires some additional translational efforts. For example, it might be suggested that the DSM, as long as there is no stable consensus, should integrate the theoretical pluralism argued for above (e.g., the DSM could list competing theories about the etiologies of individual mental disorders). This does not seem particularly feasible in clinical care contexts, however, since the alleged problem with the DSM is that it does not pick out homogeneous disorders. Different theoretical accounts would thus also mean different diagnostic groupings. Such a complex manual might present a welcome overview of the current state of research, but would be difficult to manage in practice and threaten the communicability of diagnoses across different clinical and administrative contexts. Nevertheless, something similar might be done not inside the DSM itself, but via documenting and routinely updating potential links between more basic research and DSM-categories in an online repository shared by the APA and NIMH.

Secondly, this is obviously not a new problem, as the DSM always had to make decisions about when a revision is called for and what kind of changes to the classification are warranted in the light of new evidence. This, I think, recommends an enhanced focus on the DSM-revision processes in discussions in (philosophy of) psychiatry, looking at how such decisions on what risks to take or avoid in revising the classification are made.

5.   Proceduralism and Participatory Pluralism

Assessing potential costs and benefits of taxonomic changes is partly empirical. Respective decisions can profit from research that examines clinical implications and effects on patients, as well as from work in the social sciences inquiring about organizational, economic, or political aspects. However, even if such empirical work could inform us about potential consequences of replacing DSM diagnoses, it cannot determine respective decisions. These decisions about when to implement changes necessarily deal with some degree of uncertainty: it might turn out that the results supporting such a change are wrong.

As argued, the consequences of being wrong can mean different things for research and practice. Taxonomic pluralism enables a situation where science can be bold and aim for innovation, while the practical manual prioritizes stability and prevention of adverse effects. However, to determine the appropriate degree of caution here hinges on judgments on what risks are worth taking and what kind of error should be avoided. This requires weighing the severity of potential consequences of different errors

(e.g., stalling progress or disturbing administration, over- or under diag-
nosis, etc.). Such a balancing of different inductive risks involves value
judgments about what potential cost one is willing to pay for what goal
(cf., e.g., Douglas 2000).

The implementation of new results into the practical manual should
thus be an empirically informed decision, but is not fully determined by
empirical evidence. Because of the role of values in judging what risks are
worth taking, it is important to ask how such decisions are made, and by
whom. Rather than trying to develop *prima facie* standards about when and
how to incorporate results from the RDoC into the DSM, this supports a
procedural view on decision-making in DSM revisions.

In the last decades, the question of how to deal with values in science
has been of great concern to philosophy of science in general. Many have
argued that rather than conceiving of objectivity and epistemic trust-
worthiness in terms of impartial, unbiased results, one should look more
closely at the processes of knowledge production. Prominently, Helen
Longino has argued for a conception of "social objectivity," that is based
on a number of community-related conditions enabling a process of critical
discussion characterized by transparency, accessibility, and fairness. One of
the most important features of social objectivity is, moreover, a diversity of
participants in terms of background assumptions, which allows for the
detection and discussion of the idiosyncrasies of individual or shared
perspectives (Longino 1990). Ross (2002) has argued convincingly for
an application of Longino's model of social objectivity to DSM-revisions.
Sadler (2002) has made some proposals to increase the accountability,
openness, and transparency of the revision process that resonate well with
this.

The point I want to emphasize here is the positive function of diversity
in establishing scientific and public trustworthiness. It makes sure that no
single, partial perspective gets to dominate, and that all relevant voices are
heard. Regarding the DSM-revision (understood as a manual primarily
guiding clinical practice), this supports a participatory pluralism on two
levels: firstly, a pluralism in scientific and clinical perspectives; secondly, a
pluralism in partaking stakeholders.

For example, the specification of potential risks and benefits could profit
from integrating a range of different disciplines, including social sciences
as well as practicing clinicians and other mental health professionals.
Moreover, as a crucial point to the decision-making is how changes would
affect patients and how different potential outcomes are valued (or feared),
it seems worthwhile to increase the role of patients, care-givers, and advo-
cates. The role of other stake-holders, such as insurance companies or phar-
maceutical companies, should also be openly discussed and made

transparent.[13] Such proceduralist advances, if communicated convincingly, can help to address concerns about pharma lobbying or medicalization, and thereby restore public trust in the DSM.

Miriam Solomon has recently argued that pluralism and dissent is problematic in medical disciplines since it erodes their professional authority (Solomon 2015).[14] However, regarding the ubiquity of critiques of the DSM, the long history of critical voices in psychiatry, and the public nature of many of these disputes, it hardly seems an option to downplay such dissent or the role that background assumptions play in taxonomic decision-making. The better strategy to regain public trustworthiness and overcome the crisis in psychiatric classification seems to lie in being transparent and as democratic as possible regarding decisions that deal with a certain level of uncertainty and include value judgments. To do this in an epistemically responsible fashion requires identifying, as clearly as possible, where questions of political import and practical consequences play a role and seek input from multiple perspectives and concerned stakeholders on these (cf. Bueter 2018).

The DSM-5 revision has begun to take steps in this direction, for example, by eliciting public comments on workgroup proposals and by revealing as well as limiting financial support of individual workgroup members by pharmaceutical companies (e.g., Sisti and Johnson 2015). Presenting the DSM as a primarily practical manual has the potential to further promote these developments and thereby increase the trustworthiness of the process and the document.

6. Conclusion

As I tried to show, the replacement of the DSM by RDoC as a framework for research presents a promising change of heuristic strategy, if it is combined with a sufficient degree of theoretical pluralism that answers to the complexities of mental disorders. Moreover, the NIMH's decision can be seen as a separation of psychiatric research from the task of creating a taxonomy to be used in practice. While this practice ideally incorporates advances in research at some point, these two projects should not be considered as identical. The different contexts of science and practice tend to produce tensions at several junctures, such as judging the required level of evidence for changes, weighing the importance of different validators,

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13. This does not necessarily mean that all stakeholders' perspectives should be considered equally important; see Bueter (2018, and forthcoming) for arguments supporting an ethical and epistemic priority of patients' viewpoints and concerns.

14. It is important to note that Solomon differentiates between basic and applied research here, and her work has been seminal in arguing for the epistemic importance of pluralism in the former (cf. Solomon 2001).

aiming to be comprehensive or evidence-based, and prioritizing stability or innovation.

The DSM should therefore be treated primarily as a tool for clinical care, not for science—as a means to organize practices and communicate information—not to get things right. On the one side, such a taxonomic pluralism enables a greater freedom of research. On the other side, it creates the opportunity to put a greater focus on questions of clinical utility and usability. It also puts a spotlight on the role of values in taxonomic decisions that deal with a certain amount of uncertainty, namely, to inform judgments about what risks are worth taking. Instead of trying to specify any *a priori* standards for when to change the DSM according to, e.g., RDoC results, a procedural perspective is recommended on the respective decision-making, as well as a greater participatory pluralism (regarding scientific standpoints and represented stakeholders) in the revision process that increases transparency and democratic accountability. In a nutshell, a greater humility regarding the aims and abilities of psychiatric taxonomy has the potential to enhance its epistemic as well as political trustworthiness, if it is taken to support a combination of different kinds of pluralism: theoretical pluralism, taxonomic pluralism, and participatory pluralism.

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