Saving the DSM-5? Descriptive conceptions and theoretical concepts of mental disorders

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Abstract: At present, psychiatric disorders are characterized descriptively, as the standard within the scientific community for communication and, to a certain extent, for diagnosis, is the DSM, now at its fifth edition. The main reasons for descriptivism are the aim of achieving reliability of diagnosis and improving communication in a situation of theoretical disagreement, and the Ignorance argument, which starts with acknowledgment of the relative failure of the project of finding biomarkers for most mental disorders. Descriptivism has also the advantage of capturing the phenomenology of mental disorders, which appears to be essential for diagnosis, though not exhaustive of the nature of the disease. I argue that if we rely on the distinction between conceptions (procedures of identification) and concepts (reference-fixing representations), which was introduced in the philosophical debate on the nature of concepts, we may understand a limited but valid role for descriptive characterizations, and reply to common objections addressed by those who advocate a theoretically informed approach to nosology.

Keywords: psychiatry, philosophy, classification, nosology, DSM, DSM-5, mental disorder, concept

Running head: Saving the DSM-5, descriptive conceptions and theoretical concepts

I

While mental disorders are highly prevalent in all regions of the world, and increasingly recognized as such by the public opinion in US and EU countries[1], there is little agreement in the scientific community on how to classify them for research and diagnostic practice, as recent debates about

[1] Zachary Steel *et al.*, *The global prevalence of common mental disorders: a systematic review and meta-analysis 1980–2013*, "International journal of epidemiology", XLIII, 2, 2014, pp. 476-481; Matthias C. Angermeyer *et al.*, *Public beliefs about and attitudes towards people with mental illness: a review of population studies*, "Acta Psychiatrica Scandinavica", CXIII, 3, 2006, pp. 163-179.

the preparation and publication of the fifth edition of the Diagnostic and Statistical Manual of mental Disorders (DSM-5)[2] show[3]. One prominent critical issue among the others[4], both philosophical and psychiatric in nature, is the following: is the *descriptive* (symptom-based and criterial) characterization employed in the DSM-5, as in the previous versions of DSM and ICD, still a viable approach, or would a *theoretical* approach be more adequate? Supporters of the theoretical approach argue that information about causes and mechanisms (at the genetic, neuropathological, or other level) ought to be integrated in the characterization of specific disorders[5]. A further claim from some of the supporters of this position is that such a process will inevitably result in an abandonment of most of the current categories and criteria in the DSM-5, as it is made explicit in the presenta-

[2] American Psychiatric Association *et al.*, *Diagnostic and statistical manual of mental disorders (DSM-5®)*, American Psychiatric Publications, Washington 2013. Mental disorders are also included in the International Classification of Diseases (ICD), now under revision, with minor changes with respect to DSM-5 (World Health Organization, *The ICD-10 classification of mental and behavioural disorders: clinical descriptions and diagnostic guidelines*, Geneva, World Health Organization, 1992). While other classification systems are actually employed in clinical settings, most research is conducted on the DSM-ICD categories, and so the philosophical and methodological debate on psychiatry focuses on them. (See also International Advisory Group for the Revision of ICD-10 Mental and Behavioural Disorders, *A Conceptual Framework for the Revision of the ICD-10 Classification of Mental and Behavioural Disorders*, "World Psychiatry", X, 2, 2011, pp. 86–92).

[3] Steeves Demazeux and Patrick Singy (eds.), *The DSM-5 in perspective: Philosophical reflections on the psychiatric Babel*, *Vol. 10*, Springer Dordrecht 2015; Harold Kincaid and Jacqueline A. Sullivan (eds.), *Classifying Psychopathology: Mental Kinds and Natural Kinds*, MIT Press, Cambridge (Mass.) 2014; Rachel Cooper, *Diagnosing the diagnostic and statistical manual of mental disorders*, Karnac Books, London 2014; Peter Zachar *et al.* (eds.), *Alternative perspectives on psychiatric validation: DSM, ICD, RDoC, and Beyond*, OUP, Oxford 2014; James Phillips *et al.*, *The six most essential questions in psychiatric diagnosis: a pluralogue part 1: conceptual and definitional issues in psychiatric diagnosis*, "Philosophy, Ethics, and Humanities in Medicine", VII, 1, 2012, pp. 1-29; Kenneth S. Kendler, and Josef Parnas (eds.), *Philosophical issues in psychiatry: Explanation, phenomenology, and nosology*, Johns Hopkins University Press, Baltimore 2008, 2nd edition 2015.

[4] DSM-5 has also been criticized for hyper-pathologizing normal life, being the product of socioeconomic interests, not addressing the problem of comorbidity of mental disorders, and for endorsing an inadequate general definition of mental disorders. The literature on these issues vastly exceeds the limits of the present contribution. See R. Cooper, *Diagnosing the diagnostic and statistical manual of mental disorders*, cit. for references.

[5] Jonathan Y. Tsou, *DSM-5 and psychiatry's second revolution: Descriptive vs. theoretical approaches to psychiatric classification*, in Steeves Demazeux and Patrick Singy (eds.), *The DSM-5 in Perspective*, Springer Netherlands 2015, pp. 43-62; Dominic Murphy, *Psychiatry in the scientific image*, MIT Press, Cambridge, Mass. 2006; Steven E. Hyman, *Can neuroscience be integrated into the DSM-V?*, "Nature Reviews Neuroscience", VIII, 9, 2007, pp. 725-732 and Id., *The diagnosis of mental disorders: the problem of reification*, "Annual review of clinical psychology", VI, 2010, pp. 155-179; Kathryn Tabb, *Psychiatric progress and the assumption of diagnostic discrimination*, "Philosophy of Science", LXXXII, 5, 2015, pp. 1047-1058.

tion of the Research Domain Criteria (RDoC) project, a blueprint for a new system of classification[6]. On the other hand, arguments in favour of supporters of a descriptivist approach to psychiatric nosology point to the failures of the search for common causes and mechanisms for mental disorders so far, and reaffirm that reliability of diagnoses, communication facilitation, and clinical utility are the main goals for the diagnostic manual[7].

A bird's eye view on the debate taking place in international journals and conferences seems to show that – sociologically speaking – descriptivism is the minority position, with a few psychiatrists and psychologists supporting it, while most philosophers of psychiatry endorse a critical, theoretical perspective. In line with the minority, I shall argue in what follows that descriptivism is still a viable approach for the Diagnostic Manual to adopt. I shall maintain that what critics of descriptivism address with their critical remarks is not (in exemplar cases) descriptivism *per se*, but rather two possible shortcomings of this approach, namely, that constructs of specific disorders are *poorly validated*, and that criterial descriptions are often taken as *definitory*. Neither of those shortcomings, however, belongs to descriptivism intrinsically. From the debate on mental content within analytic philosophy I resume a distinction, which can make this point clearer: that between *concepts*, representations of categories, and *conceptions*, specifications of how we identify and discriminate elements of such categories[8]. What makes something member of a category (expressed by a concept) should not be confused with how we usually and preferably recognize it as such (the conceptions); in philosophical terminology, metaphysics should not be confused with epistemology. Conceptions are rough-and-ready, variable, and always fallible procedures of identification for members of a cat-

[6] David J. Kupfer and Darrell A. Regier, *Neuroscience, clinical evidence, and the future of psychiatric classification in DSM-5*, "American Journal of Psychiatry", CLXVIII, 7, 2011, pp. 672-674; Bruce N. Cuthbert and Thomas R. Insel, *Toward the future of psychiatric diagnosis: the seven pillars of RDoC*, "BMC medicine", XI, 1, 2013, pp. 1-5; Scott O. Lilienfeld and Michael T. Treadway, *Clashing Diagnostic Approaches: DSM-ICD Versus RDoC*, "Annual review of clinical psychology, XII, 2016, pp. 435-463.

[7] Kenneth S. Kendler and Michael B. First, *Alternative futures for the DSM revision process: iteration v. paradigm shift*, "The British Journal of Psychiatry", CXCVII, 4, 2010, pp. 263-265; Allen J. Frances and Thomas Widiger, *Psychiatric diagnosis: lessons from the DSM-IV past and cautions for the DSM-5 future*, "Annual Review of Clinical Psychology", VIII, 2012, pp. 109-130; Michael B. First, *Clinical utility in the revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM)*, "Professional Psychology: Research and Practice", XLI, 6, 2010, pp. 465-473.

[8] Georges Rey, *Concepts versus conceptions (again)*, "Behavioral and Brain Sciences", XXXIII, 2-3, 2010, pp. 221-222; John Rawls, *A Theory of Justice*, Belknap Press, Cambridge, Massachusetts 1999; Georges Rey, *Concepts and conceptions: A reply to Smith, Medin and Rips*, "Cognition", XIX, pp. 297-303, 1985.

egory, and do not define the category's extension; concepts do, and their complete characterization is the experts' task[9]. Equipped with this philosophical distinction, a viable option within the current debate on DSM-5 is that mental disorders correspond to *theoretically informed concepts*, possibly representing natural or real kinds, some of which are yet to be fully discovered, but they are also associated with (*pro tempore*) descriptive *conceptions* that enable identification practices in diagnosis and communication. Once a concept has been successfully validated, then which conceptions we might choose in order to apply it to everyday diagnostic and healthcare cases, will be largely a pragmatic option.

The position so outlined is a conciliatory one, based on acknowledging most of the reasons of both the theoretic and the descriptivist fronts. It is also a minimalist position with respect to the role of DSM-5, for on this view, an instrument such as DSM-5 should not be expected to explain what mental disorders are, but rather to establish itself as a most efficient tool for diagnosis and for improving communication within the scientific community, as well as inter- and intra-personal reliability[10]. Other scientific instruments may be apt for explaining what each mental disorder is, such as the forthcoming RdoC[11], thereby opening up the possibility of two or more levels of classification, the diagnostic-oriented one, and the research-based one(s), to be employed in constant reciprocal feedback.

The paper is organized as follows. In the next section the descriptive stance of DSM, from the third to the latest edition, is briefly recapitulated, along with the main reasons for it, namely *reliability* and communication facilitation, and what I shall call the *ignorance argument*. In the third and longest part of the paper I illustrate the distinction between the notions of concept and conception, and I show how it brings to bear on what I take to be the three main criticisms raised against the descriptive approach: its alleged distance from the medical model, the poor validity of existing nosological categories, and the problem of their reification. In section IV I formulate the conclusions and propose some suggestions on the role of a descriptive nosology of mental disorders.

[9] I mentioned the relation between expertise and concept individuation in Elisabetta Lalumera, *On the explanatory value of the concept-conception distinction*, "Rivista Italiana di Filosofia del Linguaggio", 2013, pp. 73-81.

[10] Lara K. Kutschenko, *In quest of 'good' medical classification systems*, "Medicine Studies", III, 1, 2011, pp. 253-270.

[11] Thomas Insel *et al.*, *Research domain criteria (RDoC): toward a new classification framework for research on mental disorders*, "American Journal of Psychiatry", CLXVII, 7, 2010, pp. 748-751.

II

Psychiatrists as well as philosophers and historians of psychiatry converge on the judgment that with the DSM-III[12], there was a shift of paradigm in the classification of mental disorders, from an explanatory stance, mostly informed by psychodynamic theory, to a descriptive one[13]. I shall briefly recapitulate the main features of the shift before assessing the present debate, focusing on the a-theoretic and descriptive character of DSM from the 1980s on.

First, any reference to etiology and origin of disorders were expunged in the 1980 edition. As it was stated clearly in the introduction,

> [t]he approach taken in DSM-III is atheoretical with regard to etiology or pathophysiological process except for those disorders for which this is well established and therefore included in the definition of the disorder. Undoubt- edly, with time, some of the disorders of unknown etiology will be found to have specified biological etiologies, others to have specific psychological causes and still others to result mainly from a particular interplay of psychological, social and biological factors[14].

The manual categorized more than 300 different diagnostic categories – while its predecessor contained only 104 – with the ambition of covering all the mental disorders accepted by the US (and partially British) psychiatric community, regardless of their explanatory models and hypotheses[15].

The a-theoretical character and, in particular, the elimination of all references to etiology was explicitly motivated by the aim of producing a neutral diagnostic instrument, to be used by clinicians of different orientations:

[12] American Psychiatric Association, *DSM-III: Diagnostic and Statistical Manual of Psychiatric Disorders*, American Psychiatric Association, Washington 1980.

[13] Mitchell Wilson, *DSM-III and the transformation of American psychiatry: a history*, "American Journal of Psychiatry", CL, 1993, pp. 399-410; Wilson M. Compton and Samuel B. Guze, *The neo-Kraepelinian revolution in psychiatric diagnosis*, "European archives of psychiatry and clinical neuroscience", CCXLV, 4-5, 1995, pp. 196-201; K. W. M. Fulford and Norman Sartorius, *The secret history of ICD and the hidden future of DSM*, in Matthew Broome and Lisa Bortolotti (eds.), *Psychiatry as cognitive neuroscience: Philosophical perspectives,* Oxford University Press, Oxford, 2009, pp. 29-48; William C. Follette and Arthur C. Houts, *Models of scientific progress and the role of theory in taxonomy development: A case study of the DSM*, "Journal of Consulting and Clinical Psychology", LXIV, 6, 1996, pp. 11-20.

[14] American Psychiatric Association, *DSM-III: Diagnostic and Statistical Manual of Psychiatric Disorders*, APA, Washington, 1980, p. 7.

[15] S. Demazeux and P. Singy (eds.), *The DSM-5 in perspective: Philosophical reflections on the psychiatric Babel*, cit., p. XIV.

The major justification for the generally atheoretical approach taken in DSM-III with regard to etiology is that the inclusion of etiological variables would be an obstacle to use of the manual by clinicians of varying theoretical orientations, since it would not be possible to present all reasonable etiological theories for each disorder, (APA,1980, 7).

Sociologically speaking, the atheoretical approach also reflected the political tensions among the groups of professionals involved in the task-force of DSM, and more broadly in the treatment of mental disorders: medical doctors, clinical psychologists of different orientations, and social workers. Thus Robert Spitzer, one of the key figures of the descriptive turn, and of the marginalization of psychodynamic accounts, explained that

[b]ecause no particular orientation or limited subgroup of schools has established its credentials as the sole scientific approach, there remains no scientific criterion for officially adopting one orientation over the others. Thus the field of psychiatry must somehow accommodate all the divergent schools and yet arrive at a single classified scheme that all agree to use. How then to reach agreement amid such unyielding disagreement? The authors of DMS-III sought to achieve this agreement by separating psychiatric observation from psychiatric theory. The common classification scheme would consist of categories whose meanings could be defined as far as possible through direct observation. In this way the adherents of different schools could nonetheless agree on basic terminology because disputes regarding definitions could be settled by appeal to what all could observe and could no reasonably deny. … Agreement over terminology requires, then, that the definitions of the terms remain operational and atheoretical[16].

The situation of disagreement – obviously with different competing forces, due to the passing of time – is intact at present times, as the history of the making of DSM-5 (from 2002 to 2013) clearly shows[17]. Now psychiatrists of psychoanalytic orientation are no longer a major dissident voice, but patients' interest groups, pressures from the pharmacological industries, and diverse scientific orientations within the American Psychiatric Association work-groups make the DSM-5 task force a "psychiatric Babel"[18].

To reach a level of possible agreement, explicit operational diagnostic criteria were introduced in DSM-III, linking the descriptions of symptoms

16 Robert Spitzer, 1978, quoted in Luc Faucher, *Evolutionary psychiatry and nosology: Prospects and limitations*, "Baltic International Yearbook of Cognition, Logic and Communication", VII, 1, 2012, pp. 1-64.

17 Joel Paris, *The ideology behind DSM-5*, in Joel Paris and James Philips, *Making the DSM-5*, Springer, New York 2013, pp. 39-44.

18 S. Demazeux and P. Singy (eds.), cit.

(along with specifications about prognosis and treatment) to the abstract level of concepts of mental disorders, with the minimum possible use of terms with subjectively disputable meanings. Thus, for example, a characterization such as the following, for Depressive Neurosis, was cancelled: "excessive reaction of depression due to an internal conflict or to an identifiable event such as the loss of a love object or cherished possession" for it contained the word "excessive", which could give rise to obvious disagreements (would a three-month mourning be an excessive reaction? Would depression for the lost of one's dog be excessive?)[19]. DSM-IV (and ICD-10) introduced evidence-based procedures for modifying the classification, and several of them were modified, but the main features of the descriptive approach remain intact in the DSM-5.

Though many value terms are still present within the criteria, mostly conveying the harm, suffering and disability associated with mental disorders, the latest version retains the explicit commitment to an objective and descriptive language for diagnostic criteria[20]. As for structure, characterizations of specific disorders are 'polythetic': the whole set of criteria does not provide necessary and sufficient conditions for diagnostic inclusion, but thresholds are introduced for diagnosis judgments; for example, possession of any 5 out of 9 criteria qualifies a subject for a diagnosis of Major Depressive Disorder. Characterizations of specific disorders are also 'categorical', rather than dimensional: they do not admit degrees of category membership[21]. This style of diagnostic criteria reminds of a checklist for diagnosis, where ideally the import of the personal opinion of the clinician is minimized.

[19] *American Psychiatric Association Committee on Nomenclature and Statistics: Diagnostic and Statistical Manual of Mental Disorders*, 2nd edition, American Psychiatric Association, Washington; 1968, quoted by Randolph Nesse and Dan J. Stein, *Towards a genuinely medical model for psychiatric nosology*, "BMC Medicine", 2012, X, 1-9, p. 2.

[20] Harm (disadvantage or disability) to the person is one of the traits that qualify a condition as a mental disorder, according to the general definition as "harmful dysfunction" included in the Introduction of the 4th and 5th editions. See Jerome C. Wakefield, *The concept of mental disorder: on the boundary between biological facts and social values*, "American Psychologist", XLVII, 3, 1992, pp. 373-380.

[21] There are many different ways to meet the requirements of a polythetic characterization, and it is possible that patients so diagnosed have no characteristics in common. This has advantages (minimization of false negatives, *i.e.*, unrecognized pathological conditions), but also shortcomings. For example, Galatzer-Levy and Bryant found that there are 636,120 ways to meet the requirements for post-traumatic stress disorder as described in DSM-5. According to them, this proves that the characterization is not specific enough. See Isaac R. Galatzer-Levy and Richard A. Bryant, *636,120 ways to have posttraumatic stress disorder*, "Perspectives on Psychological Science", VIII, 6, 2013, pp. 651-662.

The main reason for adopting this kind of descriptivist stance in diagnostic criteria for specific disorders is well-known, and implicitly stated in the quote from Robert Spitzer reported above: it is to enhance 'reliability', the measure of the agreement of different clinicians on the same diagnosis (inter-rater reliability), or of the same clinician on the same diagnosis of sufficiently similar cases (intra-rater reliability). Reliability in psychiatry was very low before the issue of DSM-III, and has greatly improved over the years[22]. Together with reliability, communication among different users of the manual was eased by means of a shared language. As Nesse and Stein explain[23],

> [o]perationalized diagnosis transformed psychiatry. It made possible standardized interviews epidemiologists could use to measure the prevalence of specific disorders. Neurobiologists could search for pathology specific to reliably defined conditions. Clinical researchers at multiple sites could collaborate on treatment studies that produced massive datasets, now summarized in treatment guidelines. Regulatory agencies, insurance companies and funding agencies could, and soon did, require DSM diagnoses. Psychiatrists could finally diagnose and treat specific disorders, just like other physicians.

Nowadays, the DSM (and ICD) terminology and operational criteria set the standard for most psychiatric communications, thus achieving the initial goals[24].

What about a-theoreticity? Why couldn't reliability be achieved with theoretically informed nosology, including information about causes or underlying mechanisms within the criteria – once that psychodynamic explanations were (at least temporarily) discarded? In fact, many commentators agree on distinguishing between the atheoretical 'style' of the diagnostic criteria of specific disorders in the DSMs, and the committed theoretical 'general stance' of the manuals and their authors, which is an endorsement of the biomedical model, broadly conceived: mental disorders are diseases conceived as discrete, existing entities, on a par with somatic ones, and consequently the diagnosed subject is a *patient*, in need of medical care[25].

[22] Darrel A. Regier *et al.*, *DSM-5 field trials in the United States and Canada, Part II: test-retest reliability of selected categorical diagnoses*, "American journal of psychiatry", 2013.

[23] R. Nesse and D. J. Stein, *Towards a genuinely medical model for psychiatric nosology*, cit., p. 3.

[24] See Michael B. First, *The National Institute of Mental Health*, in Kenneth S. Kendler and Josef Parnas (eds.), *Philosophical Issues in Psychiatry II: Nosology*, Oxford University Press, Oxford 2012.

[25] See *e.g.* Massimiliano Aragona, *Neopositivism and the DSM psychiatric classification. An epistemological history. Part 1: Theoretical comparison*, "History of psychiatry", XXIV, 2, 2013,

In this respect, the descriptive approach of DSM has been defined neo-Kraepelinian, from the work of Emil Kraepelin in psychiatric nosology in the beginning of the XXth century. In an age where treatment and remission were very unlikely, Kraepelin focused his classification on an accurate description of symptoms and prognosis, believing that mental disorders could be classified by grouping together patients with sufficiently similar symptoms and prognosis, and by filtering out those symptoms that disappear in the course of the disease. For example, he classified 'dementia praecox' (now schizophrenia) and manic-depressive disorder as two different entities, on the basis of the fact that the one, but not the other, has a deteriorating course. However, symptoms and prognosis are not supposed to exhaust the nature of mental disorders, on Kraepelin's view. He also maintained that the etiology of mental diseases was soon to be discovered, and psychiatry be aligned with the rest of medicine[26].

Kraepelin's conviction and medical model explicitly inform the versions of DSM from the third edition to the present[27], together with acknowledgment of the partial failure of the project of going beyond symptoms and prognosis for most mental disorders. As the introduction to DSM-IV text revision makes explicit, "the etiological basis for most psychiatric conditions remains elusive…for this reason, a descriptive approach to classification has proved to be of greater utility"[28]. This, in the shortest form, is the 'ignorance argument' in favour of the DSM's descriptive approach. If the etiological basis 'were' known, they could possibly be included in the characterizations of specificic disorders. Given that they are not, descriptivism and atheoreticity within the criteria remain the best options, while the overall orientation is towards the medical model.

Notice that the latter premise of the argument, acknowledgment of ignorance, is documented in most scientific and survey articles, including

pp. 166-179; J. Paris, *The ideology behind DSM-5*, cit. For a definition of the medical model in psychiatry see *e.g.* D. Murphy, *Psychiatry in the Scientific Image*, cit.

26 Emil Kraepelin, *Textbook of psychiatry*, translated by Anton R. Diefendorf, Macmillan, London 1907.

27 The so-called Feighner criteria were the immmediate precursors DSM-III, and they were formulated partially on the basis of Kraepelin's descriptions. See John P. Feighner *et al.*, *Diagnostic criteria for use in psychiatric research*, "Archives of general psychiatry", XXVI, 1, 1972, pp. 57-63. For an opinionated history see Roger Blashfield, *The classification of psychopathology: Neo-Kraepelinian and quantitative approaches*, Springer Science & Business Media, New York, 2012.

28 First, Michael B. *et al.*, *Introduction*, in *Diagnostic and Statistical Manual of Mental Disorders: Fourth Edition, Text Revision*, American Psychiatric Association Arlington, VA, 2000, p. XIV.

those who defend a theoretical over a descriptive approach to nosology[29]. It is, of course, 'relative' ignorance: while research projects are going on, no hypothesis has reached the standard of a diagnostic criterion that can be employed with the widest consensus in a variety of clinical and administrative settings. On this point, the statement of David Kupfer, the head of the DSM-5 task force, is clear:

> [t]he problem that we've had in dealing with the data that we've had over the five to 10 years since we began the revision process of DSM-5 is *a failure of our neuroscience and biology to give us the level of diagnostic criteria*, a level of sensitivity and specificity that we would be able to introduce into the diagnostic manual[30].

To sum up, in this section I presented the descriptive stance of DSM editions from the third to the present as motivated by disagreement among different orientations, and aimed at achieving reliability; I also claimed that atheoreticity is in fact the endorsement of the medical model of mental disorders, together with an ignorance argument for the conclusion that it is premature to include etiological information within the diagnostic criteria. With a view to reliability, and with an unfinished agenda of finding out biomarkers and mechanisms, characterizing disorders via symptoms and course appears to be the best option for large-use diagnostic manual.

III

In this section I shall introduce the concept-conception distinction, taken from the philosophical debates on concepts; then I shall show how it can be employed to respond to what I take to be the main objections to DSM's descriptivism (distance from the medical model, the problem of reification, and inadequate validation).

In the philosophical tradition – as different from the psychological and cognitive tradition – a concept is the general representation of some kind of object, property or event, that can be shared and grasped by different

[29] Research on schizophrenia (the dopamine hypothesis, the gene hypothesis and the brain hypothesis among others) is an example. See *e.g.* Matcheri S. Keshavan, Henry A. Nasrallah and Rajiv Tandon, *Schizophrenia, Just the Facts, 6. Moving ahead with the schizophrenia concept: from the elephant to the mouse*, "Schizophrenia research", CXXVII, 1, 2011, pp. 3-13.

[30] Interviewed by the *New York Times*. See Pamela Belluck and Bernard Carey, *Psychiatry's guide is out of touch with science, experts say*, "New York Times", VI, 2013.

individuals[31]. The concept of justice, for example, is a general representation of what justice is, and it is applied correctly to all and only the instances of justice (actions, decisions, and thoughts). Philosophers strive to find a proper characterization of the concept of justice, typically by testing definitions. Some concepts are more apt to be characterized as definitions, like the concept of a prime number (a natural number that has exactly two natural divisors, 1 and itself), or the concept of gold (the substance with atomic number 79). Others are less so, like aesthetic and value concepts (beautiful, good, true), but also everyday concepts such as artifacts may prove hard to define, and are better characterized by non-definitional criteria, or prototypes (*e.g.* chair, door). In the case of natural kind concepts (concepts of uniformities existing in nature, which support robust inductions), some philosophers have proposed that they have a theory-like structure; what fixes the extension of a natural kind category is what the best theory (or God's eye view) will eventually be able to discover. In the meantime, what we employ in order to identify members of a natural-kind category and discriminate them from members of other categories are our 'conceptions', that is, categorization procedures, often rough-and-ready, sometimes just partial points of view on the nature of the category. Here is how the philosopher of language Ruth G. Millikan explains the notion:

> [c]all the sum of the various ways that you have of recognizing a thing or, what amounts to the same, of recognizing when you are receiving information about a thing, your "conception" of that thing. Your conceptions of most common things have many components, for you have many ways of recognizing these things – no infallible ways, of course, but many fairly reliable ways. Whatever you know about a thing is part of your conception of it too, for whatever you know might help you to identify it, or help prevent you from misidentifying it, under some circumstances[32].

A concept stands to conceptions as one to many. So, for example, the moral philosopher John Rawls thinks that different societies have different conceptions of justice:

[31] A collection of philosophical essays on the nature of concepts from Plato to the present, with an useful introductory chapter, is Eric Margolis and Stephen Laurence, *Concepts: core readings*, Cambridge Massachussetts, Mit Press 1999. For an early formulation of the concept-conception distinction within the contemporary debate, see Georges Rey, *Concepts and conceptions: A reply to Smith, Medin and Rips*, "Cognition", XIX, 3, 1985, pp. 297-303.

[32] Ruth Garrett Millikan, *Language: A biological model*, Oxford University Press on Demand, Oxford 2005.

Existing societies are of course seldom well-ordered […], for what is just and unjust is usually in dispute. Men disagree about which principles should define the basic terms of their association. Yet we may still say, despite this disagreement, that they each have a conception of justice. That is, they understand the need for, and they are prepared to affirm, a characteristic set of principles for assigning basic rights and duties and for determining what they take to be the proper distribution of the benefits and burdens of social cooperation. Thus it seems natural to think of the concept of justice as distinct from the various conceptions of justice […][33].

Also, conceptions may gradually approximate a concept, as higher levels of expertise are reached. For example, I may say that logicians individuate and spell out the criteria of the concept of conjunction, and my own conception of conjunction changed with time, gradually approximating it when I attended a logic class. Likewise – the example is due to the philosopher of language and mind Christopher Peacocke – Gottfried Leibniz and Karl Weierstrass both had conceptions of the limit of a function, and approximated the definition[34]. A particularly interesting case for the concerns of this paper is concepts of natural kinds (to pick one current characterization among others, uniformities in nature that support inductions in virtue of their intrinsic properties). While science investigates the nature of natural kinds, so to determine their extension precisely, in most contexts they are identified with conceptions. Consider, for example, the concept of gold. We identify gold with criteria such as brilliance, colour, presence in the environment, and typical association with objects and forms. These conceptions are all fallible, as they do not discriminate gold from fake gold; nevertheless, they make gold easily recognizable in cases where chemical tests would be practically impossible, and epistemically redundant.

Finally, conceptions do not determine a category's extension, but concepts do. In most cases we don't rely on the opinion that our identifying procedures are all what there is to a thing's nature, as we implicitly assume that (in most cases) natures are hidden from view, they eschew phenomenological traits. The intuition is that of a difference between metaphysics and epistemology for a category:

[w]e need to distinguish the concept of something from merely the (epistemic) conceptions of it […] Concepts are what remain stable across variability in con-

[33] J. Rawls, *A Theory of Justice*, cit., p. 5.

[34] Christopher Peacocke, *Implicit conceptions, understanding and rationality*, "Philosophical issues", IX, 1998, pp. 43-88.

ceptions, and so give argument a point, framing the questions of what people could learn and what might be the limits of reason and thought[35].

The concept-conception distinction can now help me elucidate the role that descriptive characterization of mental disorders in the DSM may have. The DSM contains conceptions of specific disorders, aimed at facilitating communication and enabling clinicians to issue diagnostic judgments reliably, but also reasonably quickly and considering that no tests for the "hidden nature" of disorders are currently available. A DSM's entry, writes Paul McHugh,

> [b]eing appearance driven, it is similar to a naturalist's field guide with the advantages and disadvantages of such. Just as Roger Tory Peterson's *A Field Guide to the Birds* distinguishes a prothonotory from a yellow or blue-winged warbler by the bird's coloring, voice, and range, the DSM distinguishes and then arranges mental disorders by their appearance – on their shared phenomenological features[36].

Just like a bird's field guide help the readers identify the species of birds present in a certain area from how they look, sound, and behave, a criterial characterization of a mental disorder would help clinicians of diverse orientations to diagnose from phenomenological features. A *Field Guide* contains conceptions, as concepts of bird species are illustrated in textbook of ornithology, and explained with reference to their physiology and genetic structure; just like DSM contains conceptions, to be completed with proper concepts specified elsewhere.

The example of the *Field Guide* helps us to introduce the first common objection to the descriptive approach of DSM, namely, its distance from the current medical model. As the objection goes, descriptive characterizations of mental disorders are akin to Thomas Sydenham's bedside observations in the XVII century, but now, as Cuthbert and Insel claim,

> [i]n other areas of medicine, trends have increasingly moved in the direction of ever more precise specification of the genetic, molecular and cellular aspects of disease. In specialty after specialty, there has been a realization that disease entities that appear to be a single disorder actually have distinct genetic precursors and pathophysiology. For instance, for many forms of cancer, diagnosis is no longer defined by the involved organ or even the pathologist' s report, but rather by analysis of genetic variants that can predict exactly what treatment will be

[35] G. Rey, *Concepts versus conceptions (again)*, cit., p. 222.

[36] Paul R. McHugh, *Striving for coherence: psychiatry's efforts over classification*, "Jama", CCXCIII, 20, 2005, pp. 2526-2528.

optimal […]. In another domain, perhaps the most striking example of this trend involves a new drug, Ivacaftor (Kalydeco), approved by the Food and Drug Administration after an expedited review. The drug is effective in treating patients with cystic fibrosis who have a form of the syndrome with a specific mutation of the cystic fibrosis transmembrane regulator gene. Only 4% of patients with cystic fibrosis have this genetic mutation, but, for these patients, the compound is highly effective in correcting the action of the malfunctioning protein[37].

There are two lines of reply to this objection. First, there is the Ignorance argument, illustrated in the previous section. Even granting that neuroscience, genetics and epigenetics, provide now many hypotheses about the etiology of mental disorders or of some of their symptoms, it is plausible that, quoting Kupfer again, in most cases, they have not reached "a level of sensitivity and specificity that we would be able to introduce into the diagnostic manual"[38]. In fact, the test for genetic variants of cancer and the discovery that a subgroup of patients with fibrosis can be treated with Ivacaftor mentioned above exemplify a kind of success that psychiatry experienced only at the beginning of the XXth century, with syphilis. As Derek Bolton summarizes:

> [v]ery diverse signs and symptoms at and over time were unified into a syndrome caused by a kind of bacterium, a spirochete, invading the central nervous system, and which was treatable by penicillin. This early game, set and match achievement of the biomedical model applied to psychiatry has not been repeated since, and there are, as is well-known, ample reasons from research in the half-past century to cast doubt on whether it will ever be repeated, and indeed reason to believe that it will be not. As professor Kendler put it in a recent paper on the philosophical framework for psychiatry: no more spirochete-like discoveries, but rather multiple causes at multiple levels[39].

Here is a second rejoinder to the claim that descriptive conceptions are remote from the medical model. The concept-conception distinction makes it possible to suggest that there is no tension in keeping descriptive conceptions of mental disorders for diagnostic, and specifying elsewhere (in research texts and optionally in different classifications) the genetic,

[37] B.N. Cuthbert and T.R. Insel, *Toward the future of psychiatric diagnosis: the seven pillars of RDoC*, cit., p. 1. See also D. Murphy, *Psychiatry in the Scientific Image*, cit., chapter 6.

[38] See footnote 30 above.

[39] Derek Bolton, *Classification and causal mechanisms: a deflationary approach to the classification problem*, in Kenneth S. Kendler and Joseph Parnas (eds.), *Philosophical issues in psychiatry II: Nosology*, Oxford University Press, Oxford, pp. 6-10. Bolton mentions Kenneth S. Kendler, *Toward a philosophical structure for psychiatry*, "American Journal of Psychiatry", CLXII, 3, 2005, pp. 433-440.

neuropathological or most likely multilevel factors that intervene to cause them, that is, specifying elsewhere the concept of the disorder. Similarly, there is no tension in having both a *Field Guide* book for birds, and a science of ornithology. On this view, a descriptive approach to classification could be harmonized with the medical model insofar as it is completed by explanatory tools, in which mechanisms and ethiology of disorders at various levels of complexity are elucidated.

Moreover, there is a line of thought that brings to the conclusion that whereas descriptive conceptions of symptoms and prognosis may be contingent to many diseases, they are not so for psychiatric disorders, and therefore psychiatric diagnosis will inevitably rely on descriptive conceptions. In this sense, it is claimed, psychiatric disorders differ from other diseases in the relation between signs and symptoms that they instantiate. I borrow again Derek Bolton's phrases:

> [i]n acute medical care the symptoms of distress (physical or mental) is likely not to be the critical point, and may indeed in trauma be a good sign (of consciousness and life), the critical point being more likely to be an inner, beneath the skin, sign of something potentially catastrophic. In psychiatry, by contrast, especially in distress-related conditions such as depression and anxiety, the symptoms of distress are more constitutive of the illness, and the opposed concept of sign has a much less critical role. To put the point another way, the mental phenomenology, and its immediate behavioural associations, and its interpretation in the social context, have a defining role in our concepts of mental illness, and it is likely that, whatever else we may want our diagnostic categories to capture, we want them to capture these phenomena[40].

Let us now consider the second objection to the descriptive approach of DSM, namely is that its concepts lack validity; in particular, from a historical point of view, some commentators have argued that, from DSM-III on, validity has been sacrificed to reliability[41]. While there are different specific definitions in the literature, a common core to them is the idea that validity concerns whether a proposed concept captures or not an existing category in the world (in the sense that phlogiston or ghosts are not valid scientific concepts). A list of criteria of validity for psychiatric concepts was introduced before the publication of DSM-III, and now comprises validators from neuroscience, genetics, and the biomedical sciences (symptoms and course, family aggregation, genetic variations, and pathol-

[40] D. Bolton, *Classification and causal mechanisms: a deflationary approach to the classification problem*, cit., p. 10.

[41] See *e.g.* S.E. Hyman, *Can neuroscience be integrated into the DSM-V?*, cit.

ogy of neural mechanisms)[42]. There is a consistent agreement among psychiatrists and philosophers of psychiatry on the claim that a few of the disorders catalogued in DSM-5 correspond to validated categories. To quote Nesse and Stein's synthetic statement, "with the exception of neurological disorders such as Huntington's Disease, not one of the main DSM mental disorders can be validated by laboratoryor imaging biomarkers"[43].

My point is that the objection is not directed to descriptivism *per se*. Descriptivism is the choice of a particular structure and terminology for conceptions of mental disorders (polythetic criteria and objective language); it is not a thesis about which mental disorders should be included in the manual. In short, descriptivism is about "how", not what to characterize in the diagnostic manual. Validity, on the contrary, concerns the "what" question. Thus, in principle, there is no obstacle to the view that new research may provide amendments to the present classification, without changing its descriptive style. This is in fact what happened in the revision process of DSM-IV that lead to DSM-5. This is what Kendler and First call a "iterative" model for psychiatric progress:

> [t]he iterative model assumes that using increasingly rigorous empirical methods, each subsequent revision of our diagnostic system will produce improvements over its predecessor. Overtime, this process will slowly move our nosology from the rough constructs we now call 'disorders' towards a better and better approximation of the 'true' psychiatric diseases as they exist in nature. The iterative model is evolutionary and cumulative in nature. The architects of DSM–III–R8 and DSM–IV implicitly utilised this approach. The DSM–IV revision strategy, which called for making changes only if there was sufficient evidence to justify such a change, also implicitly followed this iterative model[44].

There are some examples of possible problems arising within the current nosology, which could be addressed by enhancing empirical validation studies without dismissing the descriptive approach: to name just two, the division between affective and schizotypal disorders[45], and the

[42] Eli Robins, and Samuel B. Guze. "Establishment of diagnostic validity in psychiatric illness: its application to schizophrenia." *American Journal of Psychiatry* 126.7, 1970, pp. 983-987, Kenneth S. Kendler, "The nosologic validity of paranoia (simple delusional disorder): a review", *Archives of General Psychiatry* 37-6, 1980, pp. 699-706.

[43] R. Nesse and D. J. Stein, *Towards a genuinely medical model for psychiatric nosology*, cit., p. 4.

[44] Kenneth S. Kendler and Michael B. First, *Alternative futures for the DSM revision process: iteration v. paradigm shift*, "The British Journal of Psychiatry", CXCVII, 4, 2010, pp. 263-265.

[45] See eg. Talya Greene, "The Kraepelinian dichotomy: the twin pillars crumbling?", *History of Psychiatry* 18-3, 2007, pp. 361-379, and

proper characterization of personality disorders[46]. As the authors of the paper just quoted claim, the main advantage of iteration is that it is user-friendly, namely, that it is not revisionary with respect to diagnostic and communication practices of clinicians and other subjects involved, minimizing disruption.

However, there is more to the objection of validity of existing nosological concepts, namely, the claim that they hinder psychiatric progress *qua* being descriptive[47]. There are two ways of considering the descriptive characterization of a mental disorder as those included in the DSM: either the criteria are evidence for the presence of the disorder, or they are definitional with respect to it[48]. Suppose that it is found that two (very) different causal pathways lead to the same syndrome described in a DSM entry – say, for the sake of simplicity, a genetic cause, and a traumatic cause. On the evidential views of criteria, that would suffice for concluding that the descriptive criteria underdetermined the presence of a disorder, where in fact there are two or many different disorders. On the definitional view, the disorder is one, as the criteria are reified into an entity.

The rigid reification of disease entities out of criteria is arguably problematic for research. In article published in 1996 William Follette and Arthur Houts discuss the case of depression, and the result of a long empirical study testing a certain treatment on depressed patients, which showed no significant improvement of condition. They claim that the result was due to the inadequate reification of the criteria for depression into one disorder entity, where in fact there should be many:

> [a] syndromal classification system assumes that a depressive is a depressive is a depressive. However, there are several well-developed accounts for how depression might come about, (e.g., biological, behavioral, cognitive-behavioral, and interpersonal theories, etc.). If one assumed that depressive symptoms were one possible endpoint from a number of etiological pathways and that any group of persons with depression contained a number from each pathway, then comparative outcome studies are forever doomed to get equivalent results because those

[46] See the history of the discussion before the publication of DSM-5 contained in Peter Zachar et al., "Personality disorder in DSM-5: an oral history", *Psychological medicine* 46-01, 2016, pp. 1-10.

[47] See *e.g.* S. E. Hyman, *The diagnosis of mental disorders: the problem of reification*, cit.; B. N. Cuthbert and T. R Insel, *Toward the future of psychiatric diagnosis: the seven pillars of RDoC*, cit.

[48] Well-explained in Paul E. Meehl, *Bootstraps taxometrics: Solving the classification problem in psychopathology*, "American Psychologist, L, 4, 1995, pp. 266-275

who might have had a biological cause might respond to medication but not those who were interpersonally unskilled, and so on[49].

The case of depression is problematic and its proper discussion in empirical terms is out of the scope of this paper. However, the lesson to be learned is clear enough: that descriptive criteria, once reified, are an obstacle to research.

A possible defense of the descriptive approach goes through employing once more the distinction between conceptions, which are not definitional, versus concepts, which fix their referents. As we do not use our conception of gold (the yellow-looking, brilliant substance) for selecting gold samples for chemical studies, so the descriptive conceptions of disorders included in the DSM are better employed for diagnosis and communication, with the proviso that they do not exhaust the nature of the disease itself. On this reading, the problem of reification is not descriptivism per se, but one possible (and empirically disadvantageous) kind of descriptivism, namely the use of criteria as reference-fixing, and the conflation of conceptions with concepts, in a strict operationist epistemology. In Meehl's words, psychiatry should import from the rest of medicine the notion that syndromes are just evidence:

> advanced-science medical model does not identify disease taxa with the operationally defined syndrome; the syndrome is taken as evidentiary, not as definitory. The explicit definition of a disease entity in nonpsychiatric medicine is a conjunction of pathology and etiology and therefore applies to patients who are asymptomatic (which is why, e.g., one can have a silent brain tumor or a staghorn kidney that never causes trouble during life and is only found postmortem)[50].

IV

At present, psychiatric disorders are characterized descriptively, as the standard within the scientific community for communication and, to a certain extent, for diagnosis, is the DSM, now at its fifth edition. I have revised the main reasons for introducing descriptivism in DSM-III, name-

[49] William C. Follette and Arthur C. Houts, *Models of scientific progress and the role of theory in taxonomy development: A case study of the DSM*, "Journal of Consulting and Clinical Psychology", LXIV, 6, 1996, pp. 1120- 1132.

[50] P. Meehl, *Bootstraps taxometrics: Solving the classification problem in psychopathology*, cit., p. 266.

ly the aim of achieving reliability of diagnosis and improving communication in a situation of theoretical disagreement, which has continued up to now, with different contenders. Descriptivism is also motivated by the Ignorance argument, which starts with acknowledgment of the relative failure of finding genetic, epigenetic, and neuropathologic biomarkers for most mental disorders up to now. Descriptivism has also the advantage of capturing the phenomenology of mental disorders, which appears to be essential for the diagnosis (but not exhaustive of the nature of the disease). My point has been to show that if we rely on the distinction between conceptions – procedures of identification – and concepts – reference-fixing representations – we may understand a limited but valid role for descriptive characterizations, and reply to common objections addressed by those who advocate a theoretically informed approach.

A defense of descriptivism within DSM makes room for the idea that different classification systems may serve different purpose within the same scientific domain. As Kenneth Kendler writes,

> [n]osologies have to serve at least two masters (not counting the administrative and insurance apparatus of health care) – researchers and clinicians. These needs are sometimes in conflict. Researchers want detailed, highly accurate diagnoses and typically ask more than fewer questions. Clinicians are always in a hurry and so for them the shorter and simpler the diagnostic criteria the better[51].

Should researchers build and rely on a different nosology, as that envisaged in the RdoC project, or should a more thorough empirical work on the existing provisional categories provide a way of complementing existing criteria outside the diagnostic manual, is a question to be left open in the present contribution[52].

[51] Kenneth S. Kendler, *Introduction*, in K. S. Kendler and J. Parnas (eds.), *Philosophical Issues in Psychiatry II: Nosology*, cit., p. XIII.

[52] The very first version of this paper was presented in Bologna, Department of Philosophy and Communication, at a workshop on *Aspects of scientific explanation* organized by Francesco Bianchini on October 21st, 2015. I thank the organizers and audience for comments. I also thank Vera Tripodi and Maria Cristina Amoretti for discussions on these themes in a *Philosophy of Medicine* workshop held in Turin, Philosophy Department, on January 22nd, 2016.