



AKADÉMIAI KIADÓ

Journal of Behavioral Addictions

11 (2022) 2, 186–190

Debate: Behavioral addictions in the ICD-11

DOI:  
10.1556/2006.2022.00033  
© 2022 The Author(s)

COMMENTARY



# Nosology of behavioral addictions: Intersections with philosophy of psychiatry

## Commentary to the debate: “Behavioral addictions in the ICD-11”

DAN J. STEIN<sup>1\*</sup>  and CHRISTINE LOCHNER<sup>2</sup> 

<sup>1</sup> SA MRC Unit on Risk & Resilience in Mental Disorders, Dept of Psychiatry & Neuroscience Institute, University of Cape Town, South Africa

<sup>2</sup> SA MRC Unit on Risk & Resilience in Mental Disorders, Dept of Psychiatry, Stellenbosch University, South Africa

Received: September 12, 2021 • Revised manuscript received: April 17, 2022 • Accepted: April 20, 2022

### ABSTRACT

Writing in this journal, Brand and colleagues have proposed criteria for other specified disorders due to addictive behaviors. Their proposal intersects with key debates in philosophy of psychiatry, including how best to define mental disorders, to validate them, and to optimize their meta-structure. Review of these debates in the context of behavioral addictions suggests several conclusions. First, these debates involve “essentially contested” constructs that require ongoing consideration and judgment. Second, the complexity of psychopathology suggests multiple legitimate approaches to delineating traits and explicating mechanisms. Third, in optimizing meta-structure, non-psychobiological considerations are crucial - the overlapping public mental health approach to addictive disorders is paramount.

### KEYWORDS

behavioral addiction, ICD-11, DSM-5, philosophy of psychiatry, diagnostic validity, meta-structure

In their important contribution to work on behavioral addictions in this journal, Brand and colleagues propose three criteria for considering whether problematic behaviors should be classified as other specified disorders due to addictive behaviors in the 11th edition of the International Classification of Diseases (ICD-11) (Brand et al., 2022). Each of these criteria will be outlined below, and it is notable that their proposal intersects with key conceptual debates in the literature. First, the question of how best to define mental disorders? Second, the question of how best to validate a particular mental disorder? Third, the question of the best meta-structure for a classification of mental disorders? Here we comment briefly on key aspects of these debates that have particular relevance to behavioral addictions.

## HOW BEST TO DEFINE MENTAL DISORDERS?

The questions of “what is a disease?” and “what is a mental disorder?” lie at the heart of philosophy of medicine and philosophy of psychiatry (Stein, 2008b). Closely related questions are how best to threshold a particular condition to separate pathology from normality, and how to avoid the medicalization of “problems of living”. During the revision of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), Stein and colleagues built on the definition of mental disorder in the fourth edition (DSM-IV), putting forwards a proposal that was subsequently employed by a number of DSM-5 Working Groups (Stein et al., 2010).

The first criterion proposed by Brand and colleagues is that “Empirical evidence from multiple scientific studies, including ones involving treatment-seeking individuals, demonstrates that the specific potential addictive behavior is clinically relevant and individuals

\*Corresponding author.  
E-mail: dan.stein@uct.ac.za

 AKJournals

experience negative consequences and functional impairments in daily life due to the problematic and potentially addictive behavior.” In their discussion of this criterion and their accompanying figure, Brand and colleagues put particular emphasis on “functional impairment”, noting that this is important to distinguish frequent but non-pathological behavioral engagement from disorder. This criterion aligns closely with the clinical criterion included for most DSM-5 and many ICD-11 disorders and with the emphasis of Stein and colleagues on “clinical distress and functional impairment” (Stein et al., 2010).

At the same time, the clinical criterion is in some ways deeply dissatisfying. Defining that which is medically disordered as what is “clinically relevant” (i.e., medical) and “functionally impairing” (i.e., disordered) seems tautologous. This perhaps contributes to the “credibility gap” of mental health nosologies with the public (Patel, 2014). Nevertheless, that we cannot simply carve nature at her joints (Campbell et al., 2011), does not mean that “anything goes” (Feyerabend, 1975). Instead, drawing a line between disorder and normality requires employing “essentially contested” constructs (Gallie, 1955), working with graded or fuzzy categories (Geert, Lara, & Rico, 2017; Lakoff & Johnson, 1999; Stein, 2013), and appreciating that our goals are not so much immediate resolution as ongoing rigorous debate and practical judgment (Stein, Palk, & Kendler, 2021).

## HOW BEST TO VALIDATE MENTAL DISORDERS?

The question of how best to validate a particular psychiatric construct has long been asked by nosologists. Closely related questions are how best to separate one mental disorder from another, and how best to avoid reification of any particular diagnostic criteria set. Kraepelin pioneered the use of a range of validators in his work on psychiatric classification (Heckers & Kendler, 2020), and Robins and Guze formally grouped such validators (Robins & Guze, 1970). The third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III) and subsequent editions employed various validators of diagnostic constructs, and these were carefully considered by DSM-5 Working Groups and the DSM-5 Scientific Review Committee (Solomon & Kendler, 2021).

The second criterion proposed by Brand and colleagues is that “Current theories and theoretical models belonging to the field of research on addictive behaviors describe and explain most appropriately the candidate phenomenon of a potential addictive behavior” (Brand et al., 2022). Their third criterion parallels the second - “Data based on self-reports, clinical interviews, surveys, behavioral experiments, and, if available, biological investigations (neural, physiological, genetic) suggest that psychological (and neurobiological) mechanisms involved in other addictive behaviors are also valid for the candidate phenomenon.”

These criteria align in part with the emphasis of Stein and colleagues’ proposal on the importance of diagnostic validators (e.g., prognostic significance, psychobiological disruption, response to treatment) and clinical utility (e.g., contributes to better conceptualization of diagnoses, or to better assessment and treatment), and seem eminently sensible. Again, however, there are several issues requiring consideration.

A first question is whether theoretical and empirical matters are as easy to differentiate as criteria two and three would seem to imply. Philosophy in general and philosophy of science in particular have long been concerned with the relations of subjective representations to the objective world, and key work indicates that empirical observations are “theory-bound” (Hansen, 1958). Modern cognitive-affective science with its notion of embodied cognition seems to confirm this point: our conceptual structures are crucially molded by our interactions with the world (Lakoff & Johnson, 1999). A focus on issues of diagnostic validators and clinical utility does not require a strict separation of theory and observation, and this may be advantageous.

A second question is how to determine whether or not any particular condition is characterized by an underlying psychobiological dysfunction. Research on mental disorders has been notoriously unsuccessful in yielding sensitive and specific biomarkers that can accurately differentiate pathology from normality (Venkatasubramanian & Keshavan, 2016). Instead the field must rely on markers of dysfunction such as severity and duration of symptoms (First & Wakefield, 2013). In the case of substance use disorders there is often clear objective evidence that consumption of substances leads to brain damage, but in the case of behavioral addictions the evidence of any underlying dysfunction, whether pre-existing or as a sequela, is much more subtle.

A third question is how best to aggregate the evidence from a range of validators. This is particularly important when different validators lead to conflicting conclusions. It is notable that for compulsive sexual behavior disorder (CSBD), some argue that there are sufficient validators to indicate that pornography use disorder is a behavioral addiction (Brand et al., 2022), while others hold that there is insufficient evidence to conceptualize CSBD as an addiction (Sassover & Weinstein, 2022). While optimal aggregation of validators is relevant to a range of mental disorders (Solomon & Kendler, 2021), for some there may be even greater likelihood of “underdetermination”, with insufficient evidence to support definitively any one particular approach.

## HOW TO OPTIMIZE THE META-STRUCTURE FOR MENTAL DISORDERS?

During work on DSM-5 and ICD-11 a great deal of attention was paid to the “meta-structure” of these classification systems; the questions of how best to shape the overall approach to dividing up different mental disorders, including the questions of how many different chapters or



sections there should be, and which disorders belong in these (Stein, 2008a). An early proposal for DSM-5 and ICD-11 suggested employing only a handful of clusters of psychopathology (Andrews et al., 2009). As the work proceeded, however, given that the artificial limitation of ICD-11 to 10 chapters was no longer necessary, there were arguments to expand the number of chapters well beyond that number (Stein, Craske, Friedman, & Phillips, 2011).

A related question involves how best to include issues of causality in the nosology. Work on validators partly addresses issues of psychobiological explanation, but critics of DSM-5 and ICD-11 may argue that until our classification systems are more comprehensively based on psychobiological causal knowledge, they are suboptimal. Indeed, the influential National Institute of Mental Health (NIMH) Research Domain Criteria (RDoC) framework tries to go beyond the earlier Research Diagnostic Criteria that shaped the DSM (Kendler, Muñoz, & Murphy, 2010) by focusing on traits that can be studied at both bench and the bedside, dissecting out their underlying psychobiology (Cuthbert & Insel, 2013).

Brand and colleagues are focused on one aspect of the meta-structure debate: the notion that both substance use disorders and behavioral addictions should be grouped together. In justifying their criteria they focus on the conceptualizations and observations that emerge from work such as that on incentive sensitization, the impaired response inhibition and salience attribution model, and reward deficiency syndrome (Brand et al., 2022). Again, this formulation has a number of strengths, not the least being its close tie-in with RDoC approaches. Still, there are again some issues for further consideration.

First, in health classifications, not all constructs are characterized by a specific etiology. The construct of “cardiac failure”, for example, has diagnostic validity and clinical utility, but it may be caused by a range of different mechanisms, and so it may respond to a range of different interventions (Nesse & Stein, 2012). Similarly, while the rubric of substance use and behavioral addictions may have diagnostic validity and clinical utility, this does not necessarily mean that causal mechanisms underlying these conditions are homogenous and uniform. Rather, they may be better conceptualized as syndromic endpoints, along the lines of cardiac failure, that reflect a heterogenous set of causal mechanisms. Indeed, important work in philosophy of science suggests there are many legitimate ways of dividing reality (conceptual pluralism), and there are multiple legitimate explanations of that reality (explanatory pluralism) (Stein, 2021).

Second, the notion that common mental disorders, such as substance use disorders, have single causes seems increasingly unlikely. It is important for clinicians to rule out specific causes, such as the syphilis spirochete, that may underlie mental symptoms, and it is therefore useful for our nosology to remind us that such symptoms may be caused by substances, medications, or general medical conditions (Jordaan & Stein, 2000). But genetics research has clearly demonstrated that common mental disorders, including

substance use disorders, involve multiple genes of small effect size, interacting with multiple environmental factors (Sullivan, Agrawal, Bulik, & et al., 2018). Furthermore, these mechanisms are pleiotropic, contributing to a range of different disorders, so that there may not be a unique set of mechanisms that specifically delineates the addictions. In their discussion of CSBD in this journal, Gola and colleagues wisely emphasize that the data indicate involvement of different and heterogenous mechanisms (Gola et al., 2022). It is noteworthy that gaming and gambling disorder are listed not only in the ICD-11 section on disorders due to substance use and addictive behaviors, but also in impulse control disorders, consistent with a pluralistic approach. Indeed, explicit acknowledgement that there are different equally valid ways of approaching classification, with dual and even triple listing of some conditions in ICD-11 (Stein et al., 2016) represents an important and innovative advance.

Third, even if chemical and behavioral addictions involve overlapping psychobiological mechanisms, this is not necessarily the sole or best reason to lump these conditions. While there is some evidence that processes such as incentive sensitization contribute to both substance use disorders and behavioral addictions, the involvement of particular substances will impact neural circuits and component molecules, and related cognitive-affective processing, in quite specific ways. Furthermore, one of the strongest reasons for lumping chemical and behavioral addictions in the nosology is that similar public health interventions, addressing a range of other difference makers, may help reduce harm from alcohol use, gambling, and gaming (Stein et al., 2018). Much further development of appropriate public health policies to mitigate substance-related and addictive disorders is needed, and ongoing conflict with the relevant industries can be anticipated (Stein, 2015). The literature on public health interventions for compulsive sexual behavioral disorder is notably sparse, although “absence of evidence is not evidence of absence” (Altman & Bland, 1995), and there are aspects of compulsive sexual behavior disorder that perhaps deserve rigorous public health research (Döring, Mohseni, & Walter, 2020).

## CONCLUSION

In summary, Brand and colleagues have made a useful contribution to the discussion on behavioral addictions in ICD-11 by proposing criteria for inclusion of problematic behaviors as other specified disorders due to addictive behaviors. Their proposal intersects with a number of long-standing debates in philosophy of psychiatry, including on how best to define mental disorders, how best to validate a particular mental disorder, and the optimal meta-structure for mental disorders, as well as with related questions about thresholding, reification, and causality of mental disorders.

A number of points emerge from a brief review of these debates. First, the debates involve “essentially contested” notions (e.g. those of pathology and normality), where we should aim not for immediate resolution, but rather for



ongoing rigorous consideration and practical judgment. Several authors, including Brand et al. (2022), and Stein et al. (2010), emphasize that mental disorders are characterized by underlying dysfunction and consequent distress and impairment. However, for any particular entity that is proposed as a behavioral addiction, we can expect and should encourage debate as to the presence and nature of any underlying dysfunction.

Second, the complexity of psychopathology means that there are multiple legitimate approaches to delineating traits and explicating mechanisms. Behavioral addictions may involve a heterogeneous set of phenotypes as well as causal mechanisms, and the causal mechanisms involved in behavioral addictions may not be specific to these conditions. While Brand and colleagues' focus on whether theories of and mechanisms underlying addictive behaviors are applicable to proposed behavioral addictions is entirely sensible, we can expect and should encourage debate on the precise nature of addictive traits and mechanisms.

Third, in optimizing the meta-structure for mental disorders, considerations other than psychobiological mechanisms may be crucial. In particular, the value of an overlapping public mental health approach to substance use and related addictive conditions is paramount for harm reduction. Where lessons from work on public mental health approaches to substance use disorder and to gambling disorder, are relevant to other proposed behavioral addictions, this may be a particularly important justification for their inclusion under this rubric.

---

*Funding sources:* DJS and CL are funded by the SAMRC.

*Authors' contribution:* DJS wrote a first draft, both authors edited and finalized the manuscript.

*Conflict of interest:* DJS has received research grants and/or consultancy honoraria from Discovery Vitality, Johnson & Johnson, Kanna, L'Oreal, Lundbeck, Orion, Sanofi, Servier, Takeda and Vistagen.

## REFERENCES

- Altman, D. G., & Bland, J. M. (1995). Statistics notes: Absence of evidence is not evidence of absence. *BMJ*, 311(7003), 485–485. <https://doi.org/10.1136/bmj.311.7003.485>.
- Andrews, G., Goldberg, D. P., Krueger, R. F., Carpenter, W. T., Hyman, S. E., Sachdev, P., & Pine, D. S. (2009). Exploring the feasibility of a meta-structure for DSM-V and ICD-11: Could it improve utility and validity?: Paper 1 of 7 of the thematic section: 'A proposal for a meta-structure for DSM-V and ICD-11.' *Psychological Medicine*, 39(12), 1993–2000. <https://doi.org/10.1017/S0033291709990250>.
- Brand, M., Rumpf, H.-J., Demetrovics, Z., Müller, A., Stark, R., King, D. L., ... Potenza, M. N. (2022). Which conditions should be considered as disorders in the International Classification of Diseases (ICD-11) designation of “other specified disorders due to addictive behaviors”? *Journal of Behavioral Addictions*, 11(2), 150–159. <https://doi.org/10.1556/2006.2020.00035>.
- Campbell, J. K., O'Rourke, M., & Slater, M. H. (Eds.), (2011). *Carving nature at its joints: Natural kinds in metaphysics and science*. MIT Press.
- Cuthbert, B. N., & Insel, T. R. (2013). Toward the future of psychiatric diagnosis: The seven pillars of RDoC. *BMC Medicine*, 11, 126.
- Döring, N., Mohseni, M. R., & Walter, R. (2020). Design, use, and effects of sex dolls and sex robots: Scoping review. *Journal of Medical Internet Research*, 22(7), e18551. <https://doi.org/10.2196/18551>.
- Feyerabend, P. (1975). *Against method: Outline of an anarchistic theory of knowledge*. New Left Books.
- First, M. B., & Wakefield, J. C. (2013). Diagnostic criteria as dysfunction indicators: Bridging the chasm between the definition of mental disorder and diagnostic criteria for specific disorders. *Canadian Journal of Psychiatry*, 58, 663–669.
- Gallie, W. (1955). Essentially contested concepts. *Proceedings of the Aristotelian Society*, 56, 167–198.
- Geert, K., Lara, K., & Rico, H. (2017). *Vagueness in psychiatry*. Oxford University Press.
- Gola, M., Lewczuk, K., Potenza, M. N., Kingston, D. A., Grubbs, J. B., Stark, R., & Reid, R. C. (2022). What should be included in the criteria for compulsive sexual behavior disorder? *Journal of Behavioral Addictions*, 11(2), 160–165. <https://doi.org/10.1556/2006.2020.00090>.
- Hansen, N. (1958). *Patterns of discovery: An inquiry into the conceptual foundations of science*. Cambridge University Press.
- Heckers, S., & Kendler, K. S. (2020). The evolution of Kraepelin's nosological principles. *World Psychiatry*, 19(3), 381–388. <https://doi.org/10.1002/wps.20774>.
- Jordaan, G., & Stein, D. J. (2000). Mental disorders due to a general medical condition. *Psychosomatics*, 41(4), 370. <https://doi.org/10.1176/appi.psy.41.4.370>.
- Kendler, K. S., Muñoz, R. A., & Murphy, G. (2010). The development of the feighner criteria: A historical perspective. *American Journal of Psychiatry*, 167(2), 134–142. <https://doi.org/10.1176/appi.ajp.2009.09081155>.
- Lakoff, & Johnson. (1999). *Philosophy in the flesh: The embodied mind and its challenge to western thought*. Basic Books.
- Nesse, R. M., & Stein, D. J. (2012). Towards a genuinely medical model for psychiatric nosology. *BMC Medicine*, 10(5).
- Patel, V. (2014). *Rethinking mental health care: Bridging the credibility gap*, *Intervention*, 12, 15–20.
- Robins, E., & Guze, S. B. (1970). Establishment of diagnostic validity in psychiatric illness: Its application to schizophrenia. *American Journal of Psychiatry*, 126(7), 983–987. <https://doi.org/10.1176/ajp.126.7.983>.
- Sassover, E., & Weinstein, A. (2022). Should compulsive sexual behavior (CSB) be considered as a behavioral addiction? A debate paper presenting the opposing view. *Journal of Behavioral Addictions*, 11(2), 166–179. <https://doi.org/10.1556/2006.2020.00055>.
- Solomon, M., & Kendler, K. S. (2021). The problem of aggregating validators for psychiatric disorders. *Journal of Nervous &*





- Mental Disease*, 209(1), 9–12. <https://doi.org/10.1097/NMD.0000000000001256>.
- Stein, D. J. (2008a). Is disorder X in category or spectrum Y? General considerations and application to the relationship between obsessive-compulsive disorder and anxiety disorders. *Depression and Anxiety*, 25, 330–335.
- Stein, D. J. (2008b). *Philosophy of psychopharmacology: Smart pills, happy pills and pepp pills*. Cambridge University Press.
- Stein, D. J. (2013). What is a mental disorder? A perspective from cognitive-affective science. *The Canadian Journal of Psychiatry*, 58(12), 656–662. <https://doi.org/10.1177/070674371305801202>.
- Stein, D. J. (2015). Academic-industry partnerships in alcohol and gambling: A continuum of benefits and harms. *The Israel Journal of Psychiatry and Related Sciences*, 52(2), 81–84.
- Stein, D. J. (2021). *Problems of living: Perspectives from philosophy, psychiatry, and cognitive-affective science* (1st ed.). Academic Press is an imprint of Elsevier.
- Stein, D. J., Billieux, J., Bowden-Jones, H., Grant, J. E., Fineberg, N., Higuchi, S., ... Poznyak, V. (2018). Balancing validity, utility, and public health considerations in disorders due to addictive behaviors. *World Psychiatry*, 17, 363–364.
- Stein, D. J., Craske, M. G., Friedman, M. J., & Phillips, K. A. (2011). Meta-structure issues for the DSM-5: How do anxiety disorders, obsessive-compulsive and related disorders, post-traumatic disorders, and dissociative disorders fit together? *Current Psychiatry Reports*, 13(4), 248–250. <https://doi.org/10.1007/s11920-011-0207-1>.
- Stein, D. J., Kogan, C. S., Atmaca, M., Fineberg, N. A., Fontenelle, L. F., Grant, J. E., ... Reed, G. M. (2016). The classification of obsessive-compulsive and related disorders in the ICD-11. *Journal of Affective Disorders*, 190, 663–674. <https://doi.org/10.1016/j.jad.2015.10.061>.
- Stein, D. J., Palk, A. C., & Kendler, K. S. (2021). What is a mental disorder? An exemplar-focused approach. *Psychological Medicine*, 51(6), 894–901. <https://doi.org/10.1017/S0033291721001185>.
- Stein, D. J., Phillips, K. A., Bolton, D., Fulford, K. W. M., Sadler, J. Z., & Kendler, K. S. (2010). What is a mental/psychiatric disorder? From DSM-IV to DSM-V. *Psychological Medicine*, 40(11), 1759–1765. <https://doi.org/10.1017/S003329170992261>.
- Sullivan, P. F., Agrawal, A., Bulik, C. M., et al. (2018). Psychiatric genomics: An update and an agenda. *American Journal of Psychiatry*, 175, 15–27.
- Venkatasubramanian, G., & Keshavan, M. S. (2016). Biomarkers in psychiatry—a critique. *Annals of Neurosciences*, 23(1), 3–5. <https://doi.org/10.1159/000443549>.

