

## Scholars' open debate paper on the World Health Organization ICD-11 Gaming Disorder proposal

ESPEN AARSETH<sup>1</sup>, ANTHONY M. BEAN<sup>2</sup>, HUUB BOONEN<sup>3</sup>, MICHELLE COLDER CARRAS<sup>4\*</sup>, MARK COULSON<sup>5</sup>,  
DIMITRI DAS<sup>6</sup>, JORY DELEUZE<sup>7</sup>, ELZA DUNKELS<sup>8</sup>, JOHAN EDMAN<sup>9</sup>, CHRISTOPHER J. FERGUSON<sup>10\*</sup>,  
MARIA C. HAAGSMA<sup>11</sup>, KARIN HELMERSSON BERGMARK<sup>12</sup>, ZAHEER HUSSAIN<sup>13</sup>, JEROEN JANSZ<sup>14</sup>,  
DANIEL KARDEFELT-WINTHER<sup>15\*</sup>, LAWRENCE KUTNER<sup>16</sup>, PATRICK MARKEY<sup>17</sup>, RUNE KRISTIAN LUNDEDAL NIELSEN<sup>1</sup>,  
NICOLE PRAUSE<sup>18</sup>, ANDREW PRZYBYLSKI<sup>19\*</sup>, THORSTEN QUANDT<sup>20</sup>, ADRIANO SCHIMMENTI<sup>21</sup>, VLADAN STARCEVIC<sup>22</sup>,  
GABRIELLE STUTMAN<sup>23</sup>, JAN VAN LOOY<sup>24</sup> and ANTONIUS J. VAN ROOIJ<sup>24\*</sup>

<sup>1</sup>Center for Computer Games Research, IT University of Copenhagen, Copenhagen, Denmark

<sup>2</sup>Department of Psychology, Framingham State University, Framingham, MA, USA

<sup>3</sup>UC-Leuven-Limburg, CAD Limburg, Hasselt, Belgium

<sup>4</sup>Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

<sup>5</sup>Department of Psychology, Middlesex University, Hendon, London, UK

<sup>6</sup>CAD Limburg, Hasselt, Belgium

<sup>7</sup>Psychology Department, Université Catholique de Louvain (UCL), Louvain-la-Neuve, Belgium

<sup>8</sup>Department of Applied Educational Science, Umeå University, Umeå, Sweden

<sup>9</sup>Centre for Social Research on Alcohol and Drugs (SoRAD) & Department of Sociology, Stockholm University, Stockholm, Sweden

<sup>10</sup>Department of Psychology, Stetson University, DeLand, FL, USA

<sup>11</sup>GGZ Momentum, Veldhoven, The Netherlands

<sup>12</sup>Department of Sociology, Stockholm University, Sweden

<sup>13</sup>Department of Life Sciences, University of Derby, UK

<sup>14</sup>Department of Media & Communication, ERMeCC, Erasmus University Rotterdam, Rotterdam, The Netherlands

<sup>15</sup>Department of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden

<sup>16</sup>Independent Researcher, USA

<sup>17</sup>Department of Psychology, Villanova University, Villanova, PA, USA

<sup>18</sup>Liberos, Los Angeles, USA

<sup>19</sup>Oxford Internet Institute, University of Oxford, Oxford, UK

<sup>20</sup>Department of Communication, University of Münster, Münster, Germany

<sup>21</sup>Psychological Sciences and Technology, UKE, Kore University of Enna, Enna, Italy

<sup>22</sup>Discipline of Psychiatry, The University of Sydney, Sydney, Australia

<sup>23</sup>Clinical Psychologist/Neuropsychologist, USA

<sup>24</sup>Department of Communication Sciences, imec-MICT-Ghent University, Ghent, Belgium

(Received: November 15, 2016; revised manuscript received: November 30, 2016; accepted: December 12, 2016)

Concerns about problematic gaming behaviors deserve our full attention. However, we claim that it is far from clear that these problems can or should be attributed to a new disorder. The empirical basis for a Gaming Disorder proposal, such as in the new ICD-11, suffers from fundamental issues. Our main concerns are the low quality of the research base, the fact that the current operationalization leans too heavily on substance use and gambling criteria, and the lack of consensus on symptomatology and assessment of problematic gaming. The act of formalizing this disorder, even as a proposal, has negative medical, scientific, public-health, societal, and human rights fallout that should be considered. Of particular concern are moral panics around the harm of video gaming. They might result in premature application of diagnosis in the medical community and the treatment of abundant false-positive cases, especially for children and adolescents. Second, research will be locked into a confirmatory approach, rather than an exploration of the boundaries of normal versus pathological. Third, the healthy majority of gamers will be affected negatively. We expect that the premature inclusion of Gaming Disorder as a diagnosis in ICD-11 will cause significant stigma to the millions of children who play video games as a part of a normal, healthy life. At this point, suggesting formal

---

\* Corresponding authors: Andrew K. Przybylski, PhD; Oxford Internet Institute, University of Oxford, Oxford, UK; Phone: +44 1865 287230; E-mail: [andy.przybylski@oii.ox.ac.uk](mailto:andy.przybylski@oii.ox.ac.uk); Antonius J. Van Rooij, PhD; Department of Communication Sciences, imec-MICT-Ghent University, Korte Meer 7-9-11, 9000 Ghent, Belgium; Phone: +32 484 27 63 46; E-mail: [tony.vanrooij@ugent.be](mailto:tony.vanrooij@ugent.be); Christopher J. Ferguson, PhD; Department of Psychology, Stetson University, 421 N. Woodland Blvd., DeLand, FL, USA; Phone: +1 386 822 7288; E-mail: [cjfergus@stetson.edu](mailto:cjfergus@stetson.edu); Daniel Kardefelt-Winther, PhD; Department of Clinical Neuroscience, Karolinska Institutet, Tomtebodavägen 18A, 17176 Stockholm, Sweden; Phone: +44 79 46567850; E-mail: [daniel.kardefelt.winther@ki.se](mailto:daniel.kardefelt.winther@ki.se); Michelle Colder Carras, PhD; Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA; Phone: +1 410 955 3910; E-mail: [mcarras@jhu.edu](mailto:mcarras@jhu.edu)

---

This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium for non-commercial purposes, provided the original author and source are credited.

diagnoses and categories is premature: the ICD-11 proposal for Gaming Disorder should be removed to avoid a waste of public health resources as well as to avoid causing harm to healthy video gamers around the world.

**Keywords:** gaming disorder, ICD-11, DSM-5, diagnosis, moral panic, negative implications

---

This debate paper is a copy of a letter that the authors sent to the WHO Topic advisory group on Mental Health under the subject header “Gaming Disorder in ICD-11: Letter of concern” on November 9, 2016. It reflects the *personal* opinion of the authors involved. The content of this debate paper does not necessarily reflect the official opinion of their respective institutions.

## REGARDING THE GAMING DISORDER PROPOSAL

We are a group of scholars interested in the role of new media in society, with a special interest in technologies such as video games, the Internet, and social media. Some of us have worked in particular on the problematic aspects of technology use; our group includes scholars who work on the epidemiology of healthy and unhealthy use of new media, the assessment and treatment of problematic use, as well as potential protective factors. We also work more broadly in related areas such as children’s rights in a digital age, on advancing global access to online opportunities and fostering digital citizenship, as well a range of other positive aspects related to the use of new media that are important in the lives of children and adults today. Other signatories work in a variety of disciplines within the social and natural sciences, with a common interest in research on addiction and mental health. We are independent scholars, unaffiliated with any media industry and receiving no funding from them. Many of us have published research that debates the role of video gaming in mental health and the necessity of a new diagnosis/disorder related to problematic video gaming, and four of us wrote our doctoral dissertations specifically on the subject of problematic gaming. Thus, we were keenly interested to hear about the WHO ICD-11 proposal for a new category named “Gaming Disorder” (WHO, 2016a, 2016b, 2016c).

Concerns about problematic gaming behaviors deserve our full attention. Some gamers do experience serious problems as a consequence of the time spent playing video games. However, *we claim that it is far from clear that these problems can or should be attributed to a new disorder*, and the empirical basis for such a proposal suffers from several fundamental issues. Thus, we believe that, at this point, suggesting formal diagnoses and categories is premature and the proposal should be *removed* to avoid a waste of resources in research, health, and the public domain. Removing the proposal would also prevent significant violations of children’s rights to play and participate in digital environments, preserving their right to freedom of expression.

Our main concerns are the following:

1. *The quality of the research base is low.* The field is fraught with multiple controversies and confusions and there is, in fact, no consensus position among

scholars. This is indicated by a recent publication on “Internet Gaming Disorder” in the journal *Addiction* (Griffiths et al., 2016), coauthored by 28 scholars in the field. Therefore, it is premature to include Gaming Disorder as a formal diagnosis in another classification system. Primary concerns have been noted in a number of academic publications (see references). Moreover, the size of the problem is unclear: mischievous and extreme patterns of participant responding have been shown to inflate prevalence estimates (Przybylski, 2016) and the proprietary nature of most data do not allow for systematic synthesis of the existing evidence. Furthermore, nearly all of the research in this area is purely tentative or speculative in nature as clinical studies are scarce and suffer from low sample sizes: reported patient numbers do not always correspond to clinical reality, where patients can be hard to find (Van Rooij, Schoenmakers, & van de Mheen, 2017).

2. *The current operationalization of the construct leans too heavily on substance use and gambling criteria.* Comparisons of gaming behavior with substance use disorders are interesting, but should not be the interpretive framework applied in the exploratory phase of understanding a problem behavior. Significant differences between behavioral and substance driven problematic behavior exist, among which are the problematic understanding of withdrawal effects or tolerance to use (Griffiths et al., 2016; Van Rooij & Prause, 2014). Applying symptoms reminiscent of substance use disorders to gaming behaviors too often pathologizes thoughts, feelings and behavior that may be normal and unproblematic in people who regularly play video games. These over pathologized symptoms may include those related to thinking a lot about games, using them to improve mood or lying to parents or significant others about the amount of time spent gaming. These criteria may therefore have low specificity, and applying criteria with low specificity may lead to many gamers being misclassified as having problems when, in fact, they experience little to no functional impairment or harm as a consequence of their gaming. Moreover, current criteria have not been properly evaluated for construct, content, or face validity, chiefly because of lack of clinical data. In addition, emerging evidence suggests that current criteria do not predict problematic outcomes from gaming particularly well because they are not aligned with the gaming context and culture.
3. *There is no consensus on the symptomatology and assessment of problematic gaming.* Claims regarding symptoms or predictors of problematic gaming are often based on flawed interpretations of survey data, flawed application of statistical analysis, and an

over-reliance on psychometric evaluations where patient interviews are necessary to distinguish clinically significant signs and symptoms from normative behavior. This is especially relevant since a few studies involving actual patients reveal high comorbidity between gaming behavior and other disorders; in other words, it has not been convincingly demonstrated that problematic gaming is not better viewed as a coping mechanism associated with underlying problems of a different nature (Kardefelt-Winther, 2014). Misclassifying such problems as Gaming Disorder could lead to worse treatment outcomes for patients.

The act of formalizing this disorder, even as a proposal, has negative medical, scientific, public-health, societal, and rights-based fallout that should also be considered.

1. *Moral panics around the harm of video gaming might result in premature application of a clinical diagnosis and the treatment of abundant false-positive cases, especially among children and adolescents.* The presence of a current moral panic regarding video games may cause the medical community to take ill-considered steps, despite ambiguous research evidence, that do more harm than good to the global community of video gamers through the pathologizing of normal behavior. The video gaming community is estimated to comprise up to 80% of the population in developed countries and is rapidly growing in developing countries. Furthermore, the proposed categories are likely to be met with significant skepticism and controversy by both the scholarly community and the general public, doing harm to the reputation of the WHO and the medical community more generally. This would dramatically reduce the utility of such a diagnosis, in particular as it is not grounded in a proper evidence base. There is no substantial difference between gaming and most other forms of entertainment, and pathologizing one form of entertainment opens the door to diagnoses involving sport, dancing, eating, sex, work, exercise, gardening, etc, potentially leading to a saturation of behavioral disorders.
2. *Research will be locked into a confirmatory approach rather than an exploration of the boundaries of normal versus pathological.* What we have learned from the DSM-5 proposal for Internet Gaming Disorder is that many researchers will see this as formal validation of a new disorder, and stop conducting necessary validity research or developing a proper theoretical foundation for behavioral addictions. This type of research will thus provide us with more screening instruments (confirmatory thinking), instead of stimulating the fundamental validation and theoretical work (exploratory thinking) that is needed to understand the phenomenology of problematic gaming. We fear that resources may be wasted in pursuing a confirmatory path that inappropriately relies on theories of substance use disorder, which have been seemingly – but not actually – validated by the ICD-11 and DSM-5 proposals.

3. *The healthy majority of gamers will be affected by stigma and perhaps even changes in policy.* We expect that inclusion of gaming disorder in ICD-11 will cause significant stigma to the millions of children and adolescents who play video games as part of a normal, healthy life. Raising concerns around the dangers of video gaming is known to add tension to the parent–child relationship, which exacerbates conflict in the family and can perpetuate violence against children. Furthermore, a diagnosis may be used to control and restrict children, which has already happened in parts of the world where children are forced into “gaming-addiction camps” with military regimens designed to “treat” them for their gaming problems, without any evidence of the efficacy of such treatment and followed by reports of physical and psychological abuse. These consequences would constitute violations to several rights of children according to the UN Convention on the Rights of the Child, which WHO as a UN agency is obliged to uphold. Finally, a disorder might detract attention from improving media literacy, parental education, and other factors that would actually contribute to the resolution of some of the issues with problematic gaming.

In brief, including this diagnosis in ICD-11 will cause significantly more harm than good. Given the immaturity of the existing evidence base, it will negatively impact the lives of millions of healthy video gamers while being unlikely to provide valid identification of true problem cases. Therefore, as stated previously, we suggest to remove the proposed category for Gaming Disorder.

---

*Funding sources:* Michelle Colder Carras’ contribution to this research was supported by the National Institute of Mental Health Training Grant 5T32MH014592-39.

*Authors’ contribution:* AKP, AJvR, CJF, DK-W, and MCC were directly involved in writing this debate paper. The remaining authors intellectually support the content of this debate paper.

*Conflict of interest:* The authors declare no conflict of interest.

---

## REFERENCES

- Griffiths, M. D., Van Rooij, A. J., Kardefelt-Winther, D., Starcevic, V., Király, O., Pallesen, S., Müller, K., Dreier, M., Carras, M., Prause, N., King, D. L., Aboujaoude, E., Kuss, D. J., Pontes, H. M., Lopez-Fernandez, O., Nagygyörgy, K., Achab, S., Billieux, J., Quandt, T., Carbonell, X., Ferguson, C. J., Hoff, R. A., Derevensky, J., Haagsma, M. C., Delfabbro, P., Coulson, M., Hussain, Z., & Demetrovics, Z. (2016). Working towards an international consensus on criteria for assessing Internet Gaming Disorder: A critical commentary on Petry

- et al. (2014). *Addiction*, *111*(1), 167–175. doi:[10.1111/add.13057](https://doi.org/10.1111/add.13057)
- Kardefelt-Winther, D. (2014). A conceptual and methodological critique of Internet addiction research: Towards a model of compensatory Internet use. *Computers in Human Behavior*, *31*, 351–354. doi: [10.1016/j.chb.2013.10.059](https://doi.org/10.1016/j.chb.2013.10.059)
- Przybylski, A. K. (2016). Mischievous responding in Internet Gaming Disorder research. *Peer Journal*, *4*, e2401. doi:[10.7717/peerj.2401](https://doi.org/10.7717/peerj.2401)
- Van Rooij, A. J., & Prause, N. (2014). A critical review of “Internet addiction” criteria with suggestions for the future. *Journal of Behavioral Addictions*, *3*(4), 203–213. doi:[10.1556/JBA.3.2014.4.1](https://doi.org/10.1556/JBA.3.2014.4.1)
- Van Rooij, A. J., Schoenmakers, T. M., & van de Mheen, D. (2017). Clinical validation of the C-VAT 2.0 assessment tool for gaming disorder: A sensitivity analysis of the proposed DSM-5 criteria and the clinical characteristics of young patients with ‘video game addiction’. *Addictive Behaviors*, *64*, 269–274. doi:[10.1016/j.addbeh.2015.10.018](https://doi.org/10.1016/j.addbeh.2015.10.018)
- WHO. (2016a). *Gaming disorder*. Retrieved from <http://id.who.int/icd/entity/1448597234>. Accessed by November 14, 2016. (Archived by WebCite at <http://www.webcitation.org/6m0iJOU1Q>)
- WHO. (2016b). *Gaming disorder, predominantly offline. ICD-11 Beta Draft (Foundation)*. Retrieved from <http://id.who.int/icd/entity/718071594>. Accessed by November 14, 2016. (Archived by WebCite at <http://www.webcitation.org/6m0ibJWrS>)
- WHO. (2016c). *Gaming disorder, predominantly online*. Retrieved from <http://id.who.int/icd/entity/338347362>. Accessed by November 14, 2016. (Archived by WebCite at <http://www.webcitation.org/6m0iT11bv>)