Gaming Disorder – a "lousy" and "meaningless" label

RUNE KRISTIAN LUNDEDAL NIELSEN

A NEW DISORDER, A NEW PANDEMIC

On January 1 2022, at the stroke of midnight, millions of people across the globe officially began suffering from a new mental disorder: Gaming Disorder. For the first time in history, the World Health Organization (WHO) introduced two 'behavioral addictions' (i.e., addictions that do not involve a psychoactive substance) into its international classification system: The International Classification of Diseases and Related Health Problems (ICD). The 11th and most recent edition of the manual took effect on January 1.[1] It is unclear what effect this new diagnosis will have on the societal and individual level. For some, it may be a welcomed change to finally have officially recognized terminology to describe their experiences, for others it may feel like an unwanted stigmatization. One reason it may feel stigmatizing is that the WHO is only introducing two behaviors under the new heading of "Disorders due to addictive behaviors:" gaming and gambling. The new ICD does not recognize other "popular addictions" such as work addiction, shopping addiction, internet addiction, etc.[2]

1 https://www.who.int/standards/classifications/classification-of-diseases.

2 World Health Organization: *ICD-11 Beta Draft-Mortality and Morbidity Statistics*.

THE CURRENT STATE OF SCHOLARSHIP

Scholars sharply disagree over whether 'gaming disorder,' more commonly referred to as 'game addiction,' exists or not. Most evidence comes from prevalence studies (questionnaire studies that seek to determine how large a proportion of a given sample meet the criteria for the disorder).[3] Proponents argue that these provide evidence for similarities between gaming and substance addictions. Detractors argue that prevalence studies do not measure a discrete clinical phenomenon, but in the best case capture a symptom of something else (e.g., problems at school, home, or work, or other underlying psychological issues, such as anxiety, depression, ADHD, etc.). In the worst-case scenario, the new disorder singles out and pathologizes one type of behavior in a sea of problematic behaviors.

THERE IS NO END TO THE CONFUSION IN SIGHT

The inclusion of Gaming Disorder into official diagnostic manuals could be a signal that the new diagnosis rests on a solid empirical and theoretical base. However, this paper aims to show that the WHO expert panel invited to present and discuss scientific evidence on the new disorder fully recognized the significant limitations of the evidence. According to research presented by the experts, it is still unclear how the disorder manifests itself, what separates it from other disorders, if it is a disorder itself or merely a symptom of other disorders, and how widespread the problem is (or is not). The experts convened by the WHO to discuss the evidence base for the new disorder ahead of its inclusion into the ICD-11 thus outlined some of the most severe critiques imaginable for a new disorder. Proponents and detractors of the new disorder appear to agree that the scientific basis for this new disorder is severely lacking.

The basic disagreement is between two camps: The first camp sees the new disorder as real (even if the science that supports it is flawed) and believes that a common language for the disorder will move the science forward and help researchers to achieve consensus. The second camp sees the science as flawed and believes that the disorder does not exist. Furthermore, the second camp sees gaming disorder as a symptom of underlying causes. This paper aims to show that no

3 World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report*, Main Meeting Hall, Foundation for Promotion of Cancer Research, National Cancer Research Centre, Tokyo (2014).

amount of critique of the research on the addictive properties of digital games is likely to make a difference as the disorder was formalized despite significant flaws in the evidence. In other words, there is a consensus in the research community that it is not clear what "Gaming Disorder" is and whether it exists. The question that divides researchers is whether or not to use the label "Gaming Disorder" despite its scientific shortcomings.

WHAT IS IN A WORD?

All humans, across time and cultures, have categorized their environment. In fact, it is difficult to imagine any complex organism surviving without some sort of rudimentary categorization of its environment into good and bad; edible and non-edible; safe and unsafe, etc. Modern attempts at developing classification systems or taxonomies and common nomenclature have their roots in the 18th century when the likes of Carl Linnaeus, often referred to as "the father of modern taxonomy," set out to create a comprehensive and scientific classification system of all living organisms.[4] However, it is François Boissier de Sauvages de Lacroix, a friend of Carl Linnaeus, who is credited as the original taxonomist of diseases and pathology based on his comprehensive treatise NOSOLOGIA METHODICA.[5] The statistical study of diseases and causes of death began a century earlier with the work of John Graunt on the LONDON BILLS OF MORTALITY who attempted to collect and analyze data on, for example, child mortality rates.[6]

When the ICD-11 officially went into effect on January 1st, 2022, it had been 26 six years since the launch of its predecessor ICD-10 and some 400 years since the first efforts to collect and statistically analyze data on death and disease. Since its inception, disease classification has been recognized as imperfect but useful. In the words of William Farr:[7]

4 Calisher, Charles H.: "Taxonomy: What's in a Name? Doesn't a Rose by Any Other Name Smell as Sweet?", in: *Croatian Medical Journal* 48 (2007), pp. 268-270.

5 World Health Organization: *History of the Development of the ICD*, n.d., p. 10.

6 World Health Organization; *History of the Development of the ICD*.

7 Farr, William: "First annual report", in: *Registrar General of England and Wales*, London 1839, p. 99. In: World Health Organization, *History of the Development of the ICD,* p. 1.

"The advantages of a uniform statistical nomenclature, however imperfect, are so obvious, that it is surprising no attention has been paid to its enforcement in Bills of Mortality. Each disease has, in many instances, been denoted by three or four terms, and each term has been applied to as many different diseases: vague, inconvenient names have been employed, or complications have been registered instead of primary diseases. The nomenclature is of as much importance in this department of inquiry as weights and measures in the physical sciences, and should be settled without delay."

Here, Farr argues that we should not wait for science to gain a perfect understanding of the world before we begin to use statistical methods to study the imperfect conceptions of the world. It may be that our current nomenclature does not perfectly match the world as it exists beyond our senses, but the advantages of having a common language far outweigh the disadvantages.

The tricky questions then and today are thus: 1) when do we have enough evidence that a given disorder exists and 2) what do we do with boundary cases? Most proponents of diagnostic manuals would probably agree that to fully classify mental disorders we need to know how patients experience them, what causes them, what symptoms they produce, what the short- and long-term effects are, and how they progress both when treated and left untreated. Disagreement arises when the question turns to how low the bar for the minimum amount of knowledge and evidence can be set.

The United States does not use the WHO's ICD. Instead, they rely on The American Psychiatric Association (APA) who publishes the DIAGNOSTIC AND STATISTICAL MANUAL (DSM), which is currently in its fifth edition (published in 2013). The APA has chosen to not include game addiction in the manual because of insufficient evidence of its existence.[8] Instead, they have opted to add "Internet Gaming Disorder" as a disorder for further study-a sort of beta version of a diagnosis for researchers to use in their work. The WHO and the APA, presumably with access to the same research and evidence, have come to different conclusions. This leads to the peculiar situation that any American wanting to be diagnosed with a gaming disorder must travel abroad to get it.

8 American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, 5th Edition, DSM-5, Washington, D.C: American Psychiatric Publishing, 2013.

THE WHO AND THE BLACK BOX

In 2014, the WHO held a three-day meeting about the "Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices," a report from the meeting was published in 2015,[9] and in 2016 the WHO officially proposed 'Gaming Disorder' as a new disorder.[10] The meeting featured 16 experts, under the coordination of Dr. Vladimir Poznyak, who discussed the evidence for what came to be Gaming Disorder, which was included in the ICD-11 in "Disorders Due to Addictive Behaviours." According to the meeting report, it was decided that "a more comprehensive evidence base on behavioral addictions associated with excessive use of the Internet, computers, smartphones and similar electronic devices [will be gathered] by end of 2016."[11]

The process behind the inclusion of Gaming Disorder as an official diagnosis has been black boxed. It has been impossible (for me and researchers in my professional network) to gain insight into the process of selecting the experts, the decision-making process, and the evidence that was considered aside from the meeting report.[12] It is curious how the group of experts came to the decision to single out gaming as the only addictive behavior to add to the manual. According to evidence presented in the meeting report "the most popular and frequently described behavioral addictions" (pp. 136-142) are:

- Pathological gambling
- Internet addiction; with three subtypes: "excessive gaming, sexual preoccupations (cybersex), and e-mail/text messaging"
- Shopping addiction
- Food addiction

9 World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report*, Tokyo 2014.

10 Aarseth, Espen et al.: "Scholars' Open Debate Paper on the World Health Organization ICD-11 Gaming Disorder Proposal", in: *Journal of Behavioral Addictions* (2016), pp. 1-4.

11 World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report*, p. 22.

12 I have reached out to several key participants in the 2014 meeting via email and have only heard back from one person, who informed me that: "there is currently no other publicly available documents related to this issue." (emphasis in original).

It remains a mystery, at least to researchers skeptical of the new disorder, why the experts ended up only including one of the subtypes of internet addiction in the manual. The evidence considered by the expert group outlines excellent critiques of Internet addiction (and presumably by extension all its subtypes). The following briefly outlines critiques presented in the meeting report:[13]

1. Definition: It is hard to define what the problem is, is it a problem of impulse control or is it a substance-like addiction?
2. The nature of the problem: the expert group believes that there are prob ably two kinds of Internet related problems – One where there is a primary problem with a compulsive focus on and pattern of behavior centered on the Internet, and one where pre-existing psychiatric problems are closely related to and are exacerbated by the Internet use. These problems might be: "personality disorders, anxiety disorder, depression, bipolar disorders, substance dependence, compulsive control disorder, pathological gambling, eating disorders, etc."
3. The extent of the problem: Most evidence comes from problematic research designs that cannot establish causal links between specific behavior and their cause. Furthermore, the "most obvious confounds are not controlled for in most surveys, such as pre-existing mental disorders."
4. Natural course and treatment outcomes: There are very few studies on how Internet addiction develops and progresses with and without treatment. Moreover, these studies are marred by serious design flaws and limitations.
5. The position in the classification system of mental disorders: The relationship or difference between "addiction" and various compulsive or impulsive orders is a source of confusion.
6. The final concern relates to medicalizing pleasure-seeking or impulsive behavior: Adding Internet addiction as a disorder runs the risk of medicalizing behaviors that are part and parcel of being human. Potentially this could create millions of new "patients" who would be given a "sick role" by fiat, which might lead to an excuse for impulsive irresponsibility.

13 World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report*, pp. 139-140.

In short, it is unclear what gaming disorder is, what it looks like, what the extent of the problem is, where to place it in the manual, how to differentiate it from other disorders, if it is a disorder itself or a symptom of underlying problems, and whether there might be negative effects associated with introducing it into official diagnostic manuals.

It might seem puzzling that the WHO chose to introduce this new disorder, when their own expert panel presents such harsh critique of its existence. Obviously, it would be a rare thing if 16 individuals were in complete agreement about such a complex issue, so this critique may reflect internal division. It may also reflect the fact that the WHO, on the one hand, is supposed to represent the pinnacle of scientific knowledge, but, on the other hand, is also a political organization that needs to retain its member states if it wants to retain power and influence (politics and science both play a role here as WHO officials have expressed being under "enormous pressure" to include "Gaming Disorder" in the ICD).[14] It may also simply be the case that the experts put more emphasis on uniform nomenclature (or a common language) for statistical reporting than on this nomenclature accurately reflecting the world as it exists beyond our senses and social constructions. Balancing out the need for a common language and the need for an accurate representation of the world is an immensely difficult task. Some, however, are less concerned with this balancing act as they see diagnostic categories as conducive to reflection on the part of clinicians. It is unclear how widespread this view is, but it is present in the evidence presented at the WHO meeting:

"Thus, the DSM-V, like all DSM's before it, will be, almost by definition, incomplete or deficient. It will be a descriptive tool, taxonomy, guidebook, featuring the authors' best guess as to what might constitute a treatable condition. The danger does not lie in the diagnostic label, but in how we use it. In fact, one might even argue that a lousy label – or a label that is so nonspecific that it applies to a broad swath of the population, including some in the 'normal' part of the spectrum (wherever that maybe) – may actually be beneficial, because it will be so meaningless that it will require the clinician to think more deeply about what that label is trying to convey."[15]

A counter argument might be that introducing "lousy" and "meaningless" new mental disorders that pathologize otherwise "normal" behavior will not encourage

14 Bean, Anthony M. et al.: "Video Game Addiction: The Push To Pathologize Video Games," in: *Professional Psychology: Research and Practice* 48 (2017), p. 378.

15 World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report*, p. 135.

clinicians to reflect more deeply but will instead be a convenient diagnostic trashcan where clinicians can in good faith place people that are not doing well and who also happen to play digital games. In this scenario, the introduction of "lousy" and "meaningless" labels will cause more harm than good as they obscure the root causes of suffering. Classifying "Gaming Disorder" as a "disorder due to addictive behavior" might give clinicians the impression that digital games and gambling are activities that are unique in their ability to cause clinically significant behavioral addiction. If digital games and gambling games are not uniquely addictive, why would the WHO expert panel leave out the Internet, smart phones, sex, exercise, and all the other behaviors that are effectively treated as addiction, and are referred to as "popular addictions" in the presented evidence? Using the words "due to" clearly expresses a causal link from the game to disorder unsupported in the literature.

In the case of Gaming Disorder, the WHO is committing exactly the disservice to science that William Farr tried to eliminate some 200 years ago, namely that they are registering complications instead of primary diseases. This would be the equivalent of recording a complaint, such as a high fever, as a disorder without regard for the underlying cause.

The ICD-10 does not use the term "addiction" when describing disorders related to psychoactive substances (such as alcohol and other drugs) preferring instead the more neutral term "Dependence syndrome." In the ICD-10, "Disorders Due to Psychoactive Substance Use" are grouped with the "organic mental disorders," that is, disorders that are a direct result of damage to brain tissue.[16] This was done precisely because "Dependence syndrome" in the ICD-10 are believed to be caused by substances; and just like with disorders caused by physical damage to the brain, we know what the cause of the disorder is. We see here two fundamentally divergent views on what a taxonomy should be: is it a) a classification system that does not necessarily reflect the world and how it works, or b) are taxonomies in fact also testable theories about the world? The latter view is championed by such luminaries as Stephen Gould, who says that taxonomies are not trivial, but rather mini theories:

"Taxonomy (the science of classification) is often undervalued as a glorified form of filing – with each species in its prescribed place in an album; but taxonomy is a fundamental and dynamic science, dedicated to exploring the causes of relationships and similarities among

16 World Health Organization: *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines,* 1992, p. 44.

organisms. Classifications are theories about the basis of natural order, not dull catalogues compiled only to avoid chaos." [17]

It would appear that the WHO is choosing to err on the side of wanting to have a common language rather than on the side of knowing that the common language accurately corresponds to the world beyond our senses.

The core description of gaming disorder in ICD-11 is the same as for gambling disorder. They revolve around three loosely defined features:

"1. impaired control over gaming (e.g., onset, frequency, intensity, duration, termination, context);
2. increasing priority given to gaming to the extent that gaming takes precedence over other life interests and daily activities; and
3. continuation or escalation of gaming despite the occurrence of negative consequences."[18]

Time will tell if the inclusion in the ICD-11 and this description of the core features will lead policy makers, researchers, clinicians, parents, educators, etc. to reflect on the legitimacy of the label or if they will trust that it is based on solid science.

THE GREAT PANDEMIC OF 2022

With the introduction of behavioral addictions into the ICD-11 we are going to see a range of new pandemics in 2022 (though probably mostly in the literature). According to the evidence presented by the WHO expert group, epidemiological studies find that 34% of Chinese college students suffer from social network site addiction.[19] Even though the experts also note that such epidemiological research is limited and often based on unreliable data (just like with video games), many more people will qualify for a new disorder in 2022. It is unclear how the behavioral addiction pandemic will interact with the COVID-19 pandemic. The WHO expert group warns of the risks associated with technological addictions in ways not so subtly reminiscent of the concern about needle sharing by drug addicts:

17 Gould, Stephen Jay: *Wonderful Life: The Burgess Shale and the Nature of History,* New York, NY: W. W. Norton & Company 1990, here p. 98.

18 World Health Organization: *ICD-11 Beta Draft-Mortality and Morbidity Statistics*.

19 World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report*, p. 9.

"Insufficient hygiene precautions and sharing of mobile devices such as smartphones may enable the spread of pathogens and infectious diseases."[20]

Whether this is an actual concern or more of a rhetorical move to make game addiction look like drug addiction is unclear.[21] It is clear, however, that it is increasingly rare to go through life without qualifying for a mental disorder. A conservative estimate, from a large-scale study in New Zealand, determined that 83% of the population at one point in time had fulfilled the criteria for a mental disorder before reaching midlife.[22] With the addition of disorders due to behavioral addiction, it would appear that we are rapidly approaching a point where it makes more sense to ask *what* mental disorder someone is suffering from than *if* they are suffering from one.

EXPERT CONSENSUS OR CONFIRMATION BIAS?

After the WHO decided to acknowledge gaming disorder as a psychiatric disorder, a group of researchers set out to "integrate the views of different groups of experts" in order to reach "expert consensus" on the diagnostic criteria.[23] To this end, 29 international experts with clinical and/or research experience in gaming disorder completed three iterative rounds of a Delphi survey. Five experts declined to participate and 11 of the 29 experts were also members of the WHO advisory group on gaming disorder. The authors prioritized experts with both clinical and research experience and intentionally left out researchers from certain fields (e.g., game studies) and disciplines (e.g., anthropology). However, the authors also considered experts with experience in only one setting when they reported more than five years of clinical experience or having published more than 20 papers on gaming disorder.

While it is commendable to try to integrate different opinions, I suspect that the selection method effectively had the result of excluding specific opinions. The

20 World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report,* p. 14.

21 For a discussion of the discursive production of the gamer as an addict see: Cover, Rob: "Gaming (Ad)Diction: Discourse, Identity, Time and Play in the Production of the Gamer Addiction Myth", in: *Game Studies* 6 (2006).

22 Schaefer, Jonathan D. et al.: "Enduring Mental Health: Prevalence and Prediction.", in: *Journal of Abnormal Psychology* 126 (2017), pp. 212-224.

23 Castro-Calvo, Jesús et al.: "Expert Appraisal of Criteria for Assessing Gaming Disorder: An International Delphi Study", in: *Addiction* (2021), pp. 2463-2475.

selection criteria effectively barred anyone whose clinical or research experience tells them that 'gaming disorder' is not a mental disease or disorder, but instead is a coping strategy or a symptom.

CONCLUSIONS

For reasons that remain unclear to outsiders, the WHO has decided to add Gaming Disorder to the ICD-11 list of disorders "due to substance use or addictive behaviours."[24] The decision was completely black boxed to the broader research community who remain unaware of the experts behind this decision, the decision-making process, and on what scientific basis the decision was made. This paper has outlined some of the arguments against the inclusion of the disorder into official diagnostic and taxonomic manuals that was laid out by an expert group under the WHO ahead of the decision. These arguments include:

- We don't know what gaming disorder is,
- We don't know what it looks like,
- We don't know the extent of the problem,
- We don't know where to place it in the manual,
- We don't know how to differentiate it from other disorders,
- We don't know if it is a disorder in itself or if it is a symptom of underlying problems, and
- There might be negative effects associated with introducing it into official diagnostic manuals.

As outsiders, we can only speculate as to why the WHO has chosen to include Gaming Disorder in the ICD-11 in spite of the issues listed above. Some possible reasons behind the decision discussed in this paper are:

1. Balancing two important qualities of diagnostic manuals. Diagnostic manuals need to a) reflect the world beyond our senses and social constructions and b) provide a common language to ensure the ability of researchers, clinicians, and other stakeholders to communicate. It appears that the WHO has chosen to err on the side of ensuring a common language at the cost of accuracy.

24 World Health Organization: *ICD-11 Beta Draft-Mortality and Morbidity Statistics*.

2. It may also be that political pressure from member countries has played a role.
3. It may also be the sincere belief that "lousy" and "meaningless" categories encourage clinicians to reflect more deeply about what a given diagnosis reflects.
4. It may also be that this decision is simply the first step towards a future where everything is potentially addictive – a future with an extremely narrow window of normalcy where most people most of the time fulfill the requirements for at least one disorder.

Scholars are still debating whether game addiction exists. This debate is not likely to be resolved any time soon. However, when it comes to diagnostic manuals a decision will have to be made: either Gaming Disorder is retired as a diagnosis again at some point, or diagnostic manuals will have to define addictive behavioral disorder related to everything from gardening to Argentine tango.[25] Perhaps the most straight forward solution would be to create a general disorder regarding behavioral addiction that does not single out just two behaviors and one form of media. The current situation, where only digital (as opposed to analogue or physical) games and gambling games (whether off-line or online) are considered to cause addiction, is not tenable.

BIBLIOGRAPHY

Aarseth, Espen/Bean, Anthony M./Boonen, Huub/Carras, Michelle Colder/Coulson, Mark/Das, Dimitri/Deleuze, Jory/Dunkels,Elza/Edman, Johan/Ferguson, Christopher J./Haagsma, Maria C./Bergmark, Karin Helmersson/Hussain, Zaheer/Jansz, Jeroen/Kardefelt-Winther, Daniel/Kutner, Lawrence/Markey, Patrick/Nielsen, Rune Kristian Lundedal/Prause, Nicole/Przybylski, Andrew/Quandt, Thorsten/Schimmenti, Adriano/Starcevic, Vladan/Stutman, Gabrielle/Van Looy, Jan/Van Rooij, Antonius J.*:* "Scholars' Open Debate Paper on the World Health Organization ICD-11 Gaming Disorder Proposal", in: *Journal of Behavioral Addictions* (2016), pp. 1-4.

25 Argentine tango addiction has been researched using similar methodology as has been used with video game addiction. Cf. Targhetta, Remi/Nalpas, Bertrand/Perney, Pascal: "Argentine Tango: Another Behavioral Addiction?", in *Journal of Behavioral Addictions* 2 (2013), pp, 179-86.

American Psychiatric Association: *Diagnostic and Statistical Manual of Mental Disorders*, 5th Edition, DSM-5, Washington, D.C: American Psychiatric Publishing, 2013.

Bean, Anthony M./Nielsen, Rune Kristian Lundedal/Van Rooij, Antonius J./Ferguson, Christopher J.: "Video Game Addiction: The Push To Pathologize Video Games," in: *Professional Psychology: Research and Practice* 48 (2017), pp. 378.

Calisher, Charles H.: "Taxonomy: What's in a Name? Doesn't a Rose by Any Other Name Smell as Sweet?", in: *Croatian Medical Journal* 48 (2007), pp. 268-270.

Castro-Calvo, Jesús/King, Daniel L./Stein, Dan J./Brand, Matthias/Carmi, Lior/Chamberlain, Samuel R./Demetrovics, Zsolt/Fineberg, Naomi A./Rumpf, Hans-Jürgen/Yücel, Murat/Achab, Sophia/Ambekar, Atul/Bahar, Norharlina/Blaszczynski, Alexander/Bowden.Jones, Henrietta/Carbonell, Xavier/Chan, Elda Mei Lo/Ko, Chih-Hung/de Timary, Phlippe/Dufour, Magali/Grall-Bronnec, Marie/Lee, Hae Kook/Higuchi, Susumu/Jimenez-Murcia, Susana/Király, Orsolya/Kuss, Daria J./Long, Jiang/Müller, Astrid/Pallanti, Stefano/Potenza, Marc N./ Rahimi-Movaghar, Afarin/ Saunders, John B./Schimmenti, Adriano/Lee, Seung-Yup/Siste, Kristiana/Spritzer, Daniel T./Starcevic, Vladan/Weinstein, Aviv M./Wölfling Klaus/Billieux, Joël: "Expert Appraisal of Criteria for Assessing Gaming Disorder: An International Delphi Study", in: *Addiction* (2021), pp. 2463-2475.

Cover, Rob: "Gaming (Ad)Diction: Discourse, Identity, Time and Play in the Production of the Gamer Addiction Myth", in: *Game Studies* 6 (2006).

Farr, William: "First annual report", in: Registrar General of England and Wales, London 1839.

Gould, Stephen Jay: *Wonderful Life: The Burgess Shale and the Nature of History,* New York, NY: W. W. Norton & Company 1990.

Schaefer, Jonathan D./Caspi, Avshalom/Belsky, Daniel W./ Harrington, Honalee/Houts, Renate/Horwood, L. John/Hussong, Andrea/Ramrakha, Sandhya/Poulton, Richie/Moffitt, Terrie E.: "Enduring Mental Health: Prevalence and Prediction.", in: *Journal of Abnormal Psychology* 126 (2017), pp. 212-224.

Targhetta, Remi/Nalpas, Bertrand/Perney, Pascal: "Argentine Tango: Another Behavioral Addiction?", in *Journal of Behavioral Addictions* 2 (2013), pp. 179-186.

World Health Organization: *History of the Development of the ICD*, n.d., p. 10

World Health Organization: *ICD-11 Beta Draft-Mortality and Morbidity Statistics*.

World Health Organization: *Public Health Implications of Excessive Use of the Internet, Computers, Smartphones and Similar Electronic Devices: Meeting Report*, Main Meeting Hall, Foundation for Promotion of Cancer Research, National Cancer Research Centre, Tokyo (2014).

World Health Organization: *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines,* 1992.