

Gaming Disorder: A Contemporary Ampliative Account

Abiola **BAMIJOKO-
OKUNGBAYE**¹,
Mudasir FIRDOSI²,
Dimitrios KOUKOULARIS³

¹Dr., PhD, Division of Mental Health,
Sofia University, Bulgaria,
bamijoko@yahoo.com

²Dr., MBBS, MD, PGDip, MRCPsych,
Consultant Psychiatrist, South West Lon-
don and St. George's Mental Health Trust
and Honorary Senior Lecturer, St
George's, University of London, United
Kingdom, mudasirfirdosi@gmail.com

³Dr., D. Ed, PhD, Educational Research-
er, Sofia University, Bulgaria,
dpk78@hotmail.com

Abstract: *Diagnosing gaming disorder requires that mental health practitioners weigh in patient's values in an appropriate symmetry with an evidence-based approach to deal with patient's issues. Nevertheless, to date, the science of gaming disorder tends to overemphasize psychopharmacological and therapeutic intervention, while the importance of values is ignored to the periphery. We argue in this paper, for gaming disorder formalization to be rigid, the science of gaming disorder needs further research and its scientific basis be established with an improved data of the players at the local level.*

Keywords: *gaming disorder; World Health Organization; diagnosis; mental disorders; classification; mental health.*

How to cite: Bamijoko-Okungbaye, A., Firdosi, M., Koukoularis, D. (2020). Gaming Disorder: A Contemporary Ampliative Account. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 11(1), 01-13.
<https://doi.org/10.18662/brain/11.1/11>

Methodological Remarks

Analytical method approach is taken in this paper to address the formalization of gaming disorder; the systematic analysis is due to the theoretical scope of this paper. In this analysis, we draw our data juxtaposing the data of proponents of formalization of gaming disorder with those that called for caution. Inferences derived from the findings are used to suggest a path forward.

Introduction

After the demise of closed mental health research, the future of research tends to oscillate in the direction of evidence-based and open research. We shall not here attempt to criticize that position, but rather attempt to outline a comprehensive account. If the future of research is in the direction of open research, it is within this context; we address the controversies surrounding gaming disorder as a disease.

Vladmir Poznyyak, member of WHO's office of mental health and substance abuse, convincingly argues for the need to add gaming disorder to the list of ICD list of disorders. As a representative of WHO, he explains that this disorder can reach the threshold to warrant a psychopharmacological intervention (Susan Scutti, CNN, 2018). What exactly is gaming disorder? According to WHO, gaming disorder is presented to have the features of impaired control over gaming. For the patients suffering from this disorder as WHO's office put it, the gaming activity supersedes other social activities of the individual. Supporters of this inclusion have welcomed the attempt to formalize gaming disorder as a disease. In the ICD list, for example, Mueller and Woelfling (2017) begin their support for the inclusion of gaming disorder by emphasizing that normality can quickly become abnormality. They claim that certain behaviors that are meant to make our life enjoyable can easily make life unbearable. The duo explicate that supporting the inclusion of gaming disorder in the ICD list as a disease is of great benefit to the practitioner and the patient, as they put it: "One prerequisite for being in the position of receiving therapeutic help is having a clear diagnosis a therapist can rely on – and here we are finally, leaving the scientific ivory tower behind and understanding that clinical reality demands having an ICD diagnosis of IGD. Thus, to conclude, instead of being afraid of "moral panic," we have to be aware of the opportunities for treatment an ICD diagnosis can offer" (p.120).

The authors recognize that there are moral concerns in pushing gaming disorder as a disorder (Müller & Wölfling, 2017). We believe that push-

ing gaming disorder in the realm of abnormality without rigorous scientific basis can lead to stigmatization of subjects playing games. Others have made similar claims that moving in the direction of formalizing gaming disorder without substantial empirical evidence is problematic to the society at large (Van Rooij et al., 2018). The matter on the table for discussion is where the line of demarcation lies, when what is designed to be enjoyable becomes unbearable. For instance, contemporary theories of education suggest employing games in classes to enhance the cognitive capability of learners. Kardefelt-Winther et.al (2017) attempt to disentangle this entanglement pertaining the line of demarcation by proposing that the best way to conceptualize behavioral addiction is to codify it in a functional sense, that is, as a functional impairment in clinical settings under the guidance of health professionals, rather than applying surveys in a healthy population. Besides, they include *persistence over time* to be part of the indicator to consider when addressing gaming disorder (Kardefelt-Winther et al., 2017). Do these factors mentioned by Kardefelt-Winther et al. resolved the classification of gaming disorder as a disease? Two things that quickly come to mind is- firstly, how do we balance diagnosis with freedom to play games? Secondly, who get to determine the criteria for the disease? One can easily say from the questions above that a comprehensive diagnosis will involve the participatory patients within a clinical setting, that is, a subjective account from patient's perspective given that a brain account is not available yet to determine gaming disorder from practitioner's perspective. A highly participatory method is likely to turn out to be beneficial to patients during treatment. Now, the challenge we currently face is the objectification of gaming disorder as a disease is predicated most times from practitioners' perspective. We do not claim that patient's expression should be taken literally, this should be integrated within a balanced norm of the existing environmental cues and for those practitioners in diverse settings, understanding the cultural dimension of patient's environment is key to a successful treatment.

Conceptual Challenges facing the formalization of gaming disorder as a disorder

At matter here is not just the trade-off between an objective functionalist account that Mueller and Woelfling propagate to be central to the diagnosis of gaming disorder and qualitative investigation of the problem of gaming disorder, but also the extent to which the science of gaming disorder allows practitioners to capture the indicators of these disorders during the practitioner-patient relationship (Müller & Wölfling, 2017). It is writ large

that the practitioner would struggle empirically, identifying the subjects who claimed that they do not have the disorder, despite a family member might have felt the need for psychopharmacological or therapeutic intervention. An example where this tension can arise is the case where a British player of the game Pokemon (played on mobile devices, outdoor game), claimed that the digital game has helped in his attempt to lose weight. According to this player, he walked 141 miles in 20 days prompting his weight to drop. As he explains, he could fit into trousers he had not worn in six years. It is plausible in the case mentioned above that a family member might be concerned about this player playing Pokemon that this activity has superseded all his social activities (Sophie Eastaugh, for CNN, 2016). Should this then be considered as a disorder? Does gaming disorder as being described have the data that cover the way to measure the persistence of the activity, before it exacerbates to a disorder? Do we have enough data to verify the "I experiential" account during the practitioner-patient interaction? In this paper, we refer to "I experiential" as the self that interacts with her *Umwelt* to form the foundation of his/her understanding through sensorimotoric and embodied engagements. These questions suggest that it would be cardinal that formalization of gaming disorder would require it to be expanded, so therefore operationalizing gaming disorder would require additional findings and these additional findings will require the integration of subjective accounts of gaming participants.

Even, in the case of severe mental disorders, delusion as a mental disorder, the evidence that false belief stems from the brain is still vague and continuous research is likely in this area as Fuchs nicely points out, that delusion usually comes to reality within intersubjective experiences. The patient usually struggles to align his or her thoughts with others, a situation that can lead to double bookkeeping, that is, instead of integrating the thought of others, patients tend to juxtapose his/her thoughts against others. If this is captured during the intersubjective experience, seeking falsifiable account in the brain might be elusive to the practitioner. In the severe case of schizophrenia, which delusion is a feature, Thomas Fuchs, (2015) claims: "No matter what their neurobiological presuppositions and neurocognitive components are – no doubt that these are of crucial importance – delusions are not just products of individual brains. Their basis is not a faulty representation of the world, but a failure of enacting a shared world through interaction with others" (p.179).

At least, it is essential to demand that the understanding of gaming disorder be normatively and implicitly understood before the formalization of the disorder, especially, the call to improve the science of gaming disorder.

der. Fuchs, Sass and Byrom would welcome such call, as they have called for more studies on the subjective account of the individuals suffering from mental disorders (Fuchs, 2015; Sass and Byrom, 2015). We suggest that contemporary ampliative understanding of gaming disorder would help clear the conceptual clouds over the formalization of gaming disorder as a disease.

Contemporary ampliative Understanding of Gaming Disorder

Van Rooij et al. (2018) ardently argue for the need to have robust scientific standard before the formalization of gaming disorder as a mental disorder. We are wholly sympathetic to such call, even when we acknowledge that the formalization has already taken place, yet we want to direct the reader's focus to an additional aspect of the debate, a dimension that is often precluded or push to the periphery during the conversation, the contemporary ampliative understanding of gaming disorder, which can be explicated analytically and phenomenologically. This, we believe, will drive the conversation forward and assist our colleagues at WHO when deciding about how to solidify gaming disorder's empirical basis in order to enhance understanding.

Examining gaming disorder, we notice a description that encompasses our normative approaches, which entail our values in bodily connection with our shared experiences and during specific application can be heuristic. Understanding gaming disorder's connection to a holistic level, where the data of the "I experiential" is integrated into the treatment approach, simultaneously recognizing the measurable dimension of the mental processes. The contemporary ampliative understanding seeks to explain that likely, the central norms of a gaming disorder are within the domain of our normative understanding and neuropsychological domain. The normative questions raised by gaming disorder is not a position that we believe that the quantitative dimension will not be able to answer. We contend the obstacles right now to fully understand the status of gaming disorder is an epistemic stage that additional research into the "I experiential" would be able to account for missing puzzle. We claim there can be consilience in establishing the formalization of gaming disorder through the application of contemporary ampliative understanding, an approach, informed by the quantitative aspects in consonance with the data of the "I experiential" mediating the two in a cognitive-affective regulation. For gaming disorder as a disease to be anchored empirically, we suggest that the data of the "I experiential" data be systematically integrated into the robust science of gaming disorder. We believe at this current stage, the science of gaming disorder is not solid enough

to warrant its inclusion as a disease. We have seen authors in recent years that have raised questions about the validity of empirical foundations of psychological science. This should come as no surprise, given the complexity of the brain-mind system. As Schimmack Ulrich (2012) observes that psychologists rush into judgment believing that raising the number of replications within an article enhances the validity of psychological science. This has proven not to be the case due to the derived understanding gained from the conceptual understanding of the self.

Correspondingly, Ledgerwood & Sherman (2012) claim that implicit credence to the problem of data processing to further increase the number of positive replication studies to ensure scientific credibility is based on false assumption because the assumption that multiple replications represent a litmus test for strong evidence of a hypothesis can be illusory. Coupled with psychiatric epidemiology challenges, the meta-analysis of scientific-data is value-laden, and when the values are not balanced appropriately, we see a shift in the outcome and process of the empirical data. Besides, the success conspicuous in genomics is more in the field of disease-modifying drugs in general medicine. The clinical psychopharmacologic attempts to extrapolate data from animal models is still ongoing but moving slowly. The roadblock slowing the process down, as Nutt et al. (2006) put it, is the absence of suitable animal models result and extrapolating data has not been easy because translating findings in animals to efficacy in humans has proven to be complicated. They see future development likely in the field of disease-modifying drugs in general medicine than in the area of neuropsychiatric diseases. They say if similar animal models could be put in place for other cognitively impairing neuropsychiatric conditions, there would be progress in the field. Given all these challenges to collate data objectively outside of patient's experience, it would be appropriate to seek answers from different approaches, hence our call to seek "I experiential data".

We understand that playing games excessively can lead to inchoate feelings, but a contemporary ampliative understanding of gaming disorder would require a robust scientific backbone for its formalization to be rigid, failure to adhere to this standard can lead to abuse of the rights of subjects who play games to cope with other challenges in their life. During the formalization of a disorder, it is crucial to allow the interpenetration of the qualitative dimensions of mental states and their measurable domain. We notice in the case of gaming disorder; its measurable dimension is not yet on firm footing, as discussed in this paper. The contribution of the group around King et al. (2013) validate this concern we have about the methodology researchers employ to capture the clinical perspective of gaming disorder.

der, as they point out that diverse psychometric properties of assessment require additional improvement.

Others have made similar claims, based on a range of research studies that underscore how unstructured power determines the *modus operandi* in psychopharmacology (Bamijoko-Okungbaye Abiola, 2019). For example, Chris Chambers (2019) calls the issues we are currently facing in methodology as the seven sins of psychology, subscribing to our assertions that open science, an emerging philosophy that aspires to make research more transparent as possible would be the best route to correct the problems of methodology. Contrary to the popular paradigm, then, neither quintessence nor verity are the aspirations of quantitative aspects of cognitive-affective systems. As researchers or doctors, we must recognize this and acknowledge that our tools can be imperfect. For this reason, contemporary ampliative understanding of gaming disorder would require that the science of gaming disorder reaches the level of rigorous theory building, theory testing, and replicated, these are the basis of proper scientific research. It would be topsy-turvy to create a diagnosis that would affect the populace based on weak scientific grounds, so therefore in therapeutic settings, our approach, that is, calling for an alternative that will include the data of the players and well balanced within the empirical data is an avenue to pursue.

Arguments for the Integration of the "I experiential" cognitive-affective system instead of Juxtaposition of data in gaming disorder.

Mueller and Woelfling (2017) claim that the clinical perspective is cardinal to the formalization of gaming disorder. We think that claim is a fair assessment; however, when claiming that the science of gaming disorder is up to par with rigorous research, such assertion has a modicum of evidence. We call for the integration of the "I experiential" data with the clinical data, as of current standard, the science of gaming disorder will require additional multidisciplinary research before its evidence can reach a holistic level that will benefit patients who might seek intervention for their struggle. We support patients who consented to intervention to address their struggles with video games. We notice that this ongoing debate about the status of gaming disorder has been ongoing in the realm of the juxtaposition of facts.

Consequently, this has led to dubious treatment centers and governmental intervention in certain countries, such as South Korea . We contend such direction can lead to abuse and overdiagnosis in mental health, synthesizing the data of the "I experiential" in confluence with clinical dimension would represent a comprehensive body-brain-mind system in a

contextual calculus. Formalization of disorders is not a novel approach in medicine; it is fundamental to mental health approaches. In most cases, this is done analytically, not by intuition, but we intuit that formalization of disorders displays in itself a different facet, a multifactorial formalization. Sometimes, researchers and mental health practitioners use mathematical quantities or factor in overlapping quotients during treatment plans. Notably, in gaming disorder, the data of the "I experiential" would certainly add value to the rigorous formalization of the disorder, we have not noticed a slam-dunk argument against the integration of the "I experiential" data into the formalization of gaming disorder. What we demand is that the science behind the formalization be within the standard of the scientific aspirations, that is, pre-established findings of the "I experiential" data associated with the robust data of the objective analysis. For example, Van Rooij et al. (2018) put it lucidly: "The answer is, of course, that prior to enshrining gaming disorder as a diagnosis, its clinical utility must be demonstrated in high-quality, transparent research with patients" (p.5).

Focusing solely on the mental causation dimension of gaming disorder might hide the structural and normative dimension of the "I experiential", which should be part of the holistic consideration during treatment of gaming disorder given that absolute validity can be outside of our quantitative research. The clinical objectivity guidance used to determine the scientific explication of gaming disorder tends to be too mechanistic, resulting in gaming disorder, developed as a causal disorder state considering the multi-layered links within the structural construct of the "I experiential". Research shows that people of a certain age tend to have more than one functional malady. We suggest that the triangulation of data will further assist in the formalization of gaming disorder if the threshold of it being a disorder is reached, and this should start with fine-tuned and fine-grained analysis of the "I experiential" data concomitantly with that clinical data. Bruno Schvin-ski's research (Pontes et al., 2019) is a move in the right direction, that is, determining the factors that contribute to gaming disorder as a disease. Contemporary disease formalization should be premised on rigorous scientific findings within the framework of contemporary ampliative understanding of mental conditions, but in gaming disorder, the evidential data is difficult to track down.

What is needed to improve the current *status quo* is the integration of subjective accounts of players suffering from gaming disorder, into the perimetric objective accounts of patient's sensomotoric *Umwelt* experiences. As we show in this paper that people sometimes participate in gaming to cope with other mental conditions, we must be cautious not to pathologize each

reaction to a stressor as a disease. Getting stressed from activities does not necessarily indicate a mental disease. The challenge with gaming disorder as a disease is how do we go about treatment of gaming disorder psychopharmacologically when its scientific basis is not yet fully grasped? Again, the stakeholders must invest in further research involving academics from various disciplines, as part of open research, the healthcare ecosystem should be widened to include active gamers in decision-making. This helps the domain of clinical effectiveness and cost-effectiveness.

The other area we are concerned about is the direct link of gaming to violence with blurred scientific evidence. We indicated in this paper that certain people play games to deal with life's challenges. Moreover, mental health research shows that most people with mental disorders pose no threat to anyone but themselves. We do acknowledge that severe mental illness can be a risk factor, usually, in confluence with other factors, that is, a multifactorial link. Even then, it is essential in the case that the court wants to accept the neuroscientific evidence as proof to determine whether the patient involved meets the criterion of *mens rea*, the court must possess an understanding of conceptual-analytic methodology required for the evaluation of scientific evidence (Bamijoko-Okungbaye, 2019). Finding balance when determining moral culpability is essential to this particular decision-making. We share the assertion that certain people do play game excessively due to akrasia, but do we have robust scientific elucidation on akrasia of gaming disorder? This prompted Wagenmakers et al. (2012) to propose recommendations to increase the veracity of empirical findings. As they put it: "This fairy-tale factor increases the probability that a presented finding is fictional and hence non-replicable. We propose a radical remedy — preregistration — to ensure scientific integrity and inoculate the research process against the inalienable biases of human reasoning" (p.633).

In spite of the fact that addiction might be appropriate to address the issue of overplaying games, this might be deemed too generic and runs the risk of being weaponized to reach inimical goals. Due to these challenges surrounding gaming disorder as a disease, we posit that WHO supports local programmes that support mental health understanding and fund those prevention programmes at the local level.

What is next for Gaming disorder as a disease?

Clinical perspective has produced substantial development which has allowed formalization of mental disorders, regrettably the mechanistic nature of this methodology has pushed for objective evidence in psychopharmacol-

ogy and mental health which is claimed to be neutral, pushing the "I experiential" data to the periphery. Because of this, we have seen an increased abuse in medicine based on iterated errors that could have been avoided by additional training. The current classification of gaming disorder is representative of a larger problem, that is, rushing to formalization without adequate empirical and "I experiential" data. Walking our readers throughout this paper, we have echoed the importance of having a robust data of the quantitative and the "I experiential" data, which should be integrated into a robust technical methodology, this approach we believe is the way forward. The systematic culmination of this data above is within the framework of contemporary ampliative understanding of gaming disorder.

Higuchi et al. (2017) state that the formalization will open doors for additional research given the insufficiency of the current empirical data. It is plausible that we see extensive research due to the formalization of a disorder. Is it not reversed empirically to formalize a disorder without robust data? Petry and O' Brien (2013) predict these improvements in DSM-5, when gaming disorder is categorized to be a disorder that requires further study, as shown in this paper, the comprehensive data of the "I experiential" and clinical data are yet to be achieved. Critics of our work have said the quick formalization will reduce moral panic, as history teaches us to take a cursory glance at the scientific data of mental disorders with a pinch of salt. Formalization based on weak scientific grounds and "I experiential" data exacerbates moral panic.

Conclusions

Our contribution in this paper is not to prevent gaming disorder formalization as a disease; instead, to distinctly argue that formalization should be predicated on rigorous empirical data integratively with the data of the "I experiential" to form the clinical foundation. On gaming disorder, we have seen a rush to formalization without sufficient data. It is this normative structure of the "I experiential" and less rigorous science of gaming disorder that does not fit easily to the listing in ICD. Hence, the contemporary ampliative account presented in this paper. We must allow the possibility of getting out of a loop that projects to push the data of the "I experiential" to the periphery. Why do we think formalizing a disorder that is based on weak scientific ground and data of the "I experiential" is the way out of the predicament that formalization of gaming disorder finds itself?

We acknowledge that the objective data that is captured during research is vital to the codification of gaming disorder, however, the evidence

of the data of the "I experiential" is equally as important in the formalization, so therefore we suggest to our colleagues in WHO, World Health Organization, to support the opening of research ecosystem that opens itself to gamers, gaming industry executives, doctors, therapists and others, especially the data of the research should reflect all gamers regardless of age. We welcome the seminal qualitative work of Snodgrass et al. (2018) paper, this is a great move in the right direction. ICD listing is an international listing, and it is our opinion that the social and contextual dimension should be factored in during research and decision-making process, as the saying goes, cosmopolitan thought is an aggregate of local events. We do not deny the mechanistic approach as part of the foundation to improve the formalization of gaming disorder. However, what we deny is that we should prevent from the outset the data of the "I experiential" during formalization. We remain optimistic that WHO will support initiatives that will support a rigid classification of gaming disorder as a disease integrating the data of the players symmetrically with robust scientific data of gaming disorder.

References

- Academics create the first psychological test for gaming disorder (2019). [Internet source]. Retrieved from <https://www.eurogamer.net/articles/2019-06-01-academics-create-the-first-psychological-test-for-gaming-disorder>
- Bamijoko-Okungbaye, A. (2019). *Philosophical dimensions of psychopharmacology*. [Ph.D. Dissertation]. Retrieved from https://www.academia.edu/39177726/Abiola_Bamijoko-Okungbaye._Philosophical_Dimensions_of_Psychopharmacology
- Chambers, C. (2019). The seven deadly sins of psychology. *Monograph*. <https://doi.org/10.1515/9780691192031>
- Fuchs, T. (2015). The intersubjectivity of delusions. *World Psychiatry, 14*(2), 178-179. <https://doi.org/10.1002/wps.20209>
- Gaming disorder. (2018). [Online Q&A]. Retrieved from <https://www.who.int/features/qa/gaming-disorder/en/>
- Higuchi, S., Nakayama, H., Mihara, S., Maezono, M., Kitayuguchi, T., & Hashimoto, T. (2017). Inclusion of gaming disorder criteria in ICD-11: A clinical perspective in favor. *Journal of Behavioral Addictions, 6*(3), 293-295. <https://doi.org/10.1556/2006.6.2017.049>
- Kardefelt-Winther, D., Heeren, A., Schimmenti, A., Van Rooij, A., Maurage, P., Carras, M., & Billieux, J. (2017). How can we conceptualize behavioral addiction without pathologizing common behaviors? *Addiction, 112*(10), 1709-1715. <https://doi.org/10.1111/add.13763>

- King, D. L., Haagsma, M. C., Delfabbro, P. H., Gradisar, M., & Griffiths, M. D. (2013). Toward a consensus definition of pathological video-gaming: A systematic review of psychometric assessment tools. *Clinical Psychology Review, 33*(3), 331-342. <https://doi.org/10.1016/j.cpr.2013.01.002>
- Ledgerwood, A., & Sherman, J. W. (2012). Short, sweet, and problematic? The rise of the short report in psychological science. *Perspectives on Psychological Science, 7*(1), 60-66. <https://doi.org/10.1177/1745691611427304>
- Müller, K. W., & Wölfling, K. (2017). Both sides of the story: Addiction is not a pastime activity. *Journal of Behavioral Addictions, 6*(2), 118-120. <https://doi.org/10.1556/2006.6.2017.038>
- Nutt, D. J., Robbins, T. W., Stimson, G. V., Ince, M., & Jackson, A. (2006). *Drugs and the future: Brain science, addiction and society*. Amsterdam, Netherlands: Elsevier.
- Petry, N. M., & O'Brien, C. P. (2013). Internet gaming disorder and the DSM-5. *Addiction, 108*(7), 1186-1187. <https://doi.org/10.1111/add.12162>
- Pontes, H. M., Schivinski, B., Sindermann, C., Li, M., Becker, B., Zhou, M., & Montag, C. (2019). Measurement and conceptualization of gaming disorder according to the World Health Organization framework: The development of the gaming disorder test. *International Journal of Mental Health and Addiction. https://doi.org/10.1007/s11469-019-00088-z*
- Sass, L., & Byrom, G. (2015). Phenomenological and neurocognitive perspectives on delusions: A critical overview. *World Psychiatry, 14*(2), 164-173. <https://doi.org/10.1002/wps.20205>
- Schimmack, U. (2012). The ironic effect of significant results on the credibility of multiple-study articles. *Psychological Methods, 17*(4), 551-566. <https://doi.org/10.1037/a0029487>
- Snodgrass, J. G., Bagwell, A., Patry, J. M., Dengah, H. F., Smarr-Foster, C., Van Oostenburg, M., & Lacy, M. G. (2018). The partial truths of compensatory and poor-get-poorer internet use theories: More highly involved videogame players experience greater psychosocial benefits. *Computers in Human Behavior, 78*, 10-25. <https://doi.org/10.1016/j.chb.2017.09.020>
- Sophie Eastaugh, for CNN. (2016). Pokemon Go player claims he shed pounds. [Internet source]. Retrieved from <https://edition.cnn.com/2016/07/29/health/pokemon-go-sam-clark-lost-weight/index.html>
- Susan Scutti, CNN. (2018, June 18). WHO says 'gaming disorder' is a mental health condition. [Internet source]. Retrieved from <https://edition.cnn.com/2018/06/18/health/video-game-disorder-who/index.html>
- Van Rooij, A. J., Ferguson, C. J., Colder Carras, M., Kardefelt-Winther, D., Shi, J., Aarseth, E., & Przybylski, A. K. (2018). A weak scientific basis for gaming

- disorder: Let us err on the side of caution. *Journal of Behavioral Addictions*, 7(1), 1-9. <https://doi.org/10.1556/2006.7.2018.19>
- Wagenmakers, E., Wetzels, R., Borsboom, D., Van der Maas, H. L., & Kievit, R. A. (2012). An agenda for purely confirmatory research. *Perspectives on Psychological Science*, 7(6), 632-638. <https://doi.org/10.1177/1745691612463078>