Policy on Unreliable Game Addiction Diagnoses Puts the Cart Before the Horse

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Abstract

Internationally, several policies have been designed to prevent pathological or "problematic" gaming issues in youth, commonly referred to simply as 'game addiction'. Particularly following the release of the World Health Organization's (WHO) "gaming disorder" diagnoses, policy makers may be inclined to enact further policies on this matter. With new data reflecting lack of success for South Korea's shutdown policy, the efficacy of current policy efforts remain in doubt. Given continued controversies regarding whether pathological gaming (PG) or gaming disorder (GD) is best conceptualized as a unique disorder rather than symptomatic of other, underlying disorders, little data has emerged to encourage policy interventions. By contrast, policy interventions at this juncture may risk doing considerable harm and wag the dog in the sense of reifying a pathological gaming disorder that remains problematic and under contentious debate in the field. We advise caution, ethnographic and qualitative research approaches, open science, etiological comprehension, and more time to fully understand whether pathological gaming is the best target for policy interventions and informing clinicians.

In 2018 the World Health Organization (WHO) announced the release of their "gaming disorder" diagnosis, marking the first time that video gaming could be labeled as an addiction and a clinical disorder. Gaming disorder was defined by the WHO as gaming to an extent that it interferes with other life activities. The WHO did not provide further specific symptoms or clinical information, aside from classifying it as an addictive behavior, leaving much interpretation in the hands of clinicians. As clinicians rely heavily on clearly defined criteria, this may be considered an unorthodox approach not just to psychological research, but clinical research and utility which impacts millions of people everyday who seek out psychological services. By contrast, the American Psychiatric Association has proposed a category for further study, "internet gaming disorder" (IGD) which provides specific symptoms which are very similar to substance abuse and gambling disorder symptoms[1]. Research into this area has been convoluted at best suggesting the proposed criteria may not be measuring any meaningful construct which should be of concern to policy makers. However, as research on gaming overuse has been conducted for years prior without consistent results, the lack of solid conclusions should not be surprising. Even with the controversies surrounding problematic video gaming, clinics have been developed across the world to treat pathological gaming (PG) and gaming disorder (GD), even before the WHO's official diagnosis. While some countries had already enacted policies designed to curb gaming overuse, potentially using poorly informed methods ultimately causing more harm than good, it appears probable that more countries may follow suit with policy efforts to curb gaming overuse. But are such policies effective, and is gaming overuse a conceptually valid target for such policies? This article focuses on evidence

[1] For a discussion of the problematic origin of internet gaming disorder symptoms see (Nielsen 2018a, 2018b)

regarding the efficacy of public policies targeting gaming overuse and provides suggestions for future policies.

A Brief Overview of Gaming Overuse Research.

Scholarship on gaming overuse began as early as 1983 when perhaps the first article on the topic referred to "junk-time junkies" (Soper & Miller, 1983). In the intervening 36 years a subject search on PsychINFO for ["pathological gaming" OR "video game addiction"] returned 101 articles. So this is definitely a topic of great interest. Several excellent reviews of this topic have been written from varying perspectives (e.g. Hellman et al., 2013; Pontes, 2018). A full summary of this nearly 4-decades old research field is beyond the scope of this paper. Thus our review here is summative.

Much of the research has focused on the parameters of pathological gaming. These include issues such as it's conceptual utility, means of diagnosis, biological or neurological markers (if any), distinguishing pathological from engaged gaming (e.g. Charlton & Danforth, 2007), cooccurrence with other mental disorders, as well as cultural reactions to new technology including technophobia and moral panic (Bowman, 2016). Despite several decades of research, opinions among scholars on these issues remain significantly divided. This is not to say that one view is correct and the other wrong, merely to note that a wide ranging literature has not always provided either consensus or clarity on these fundamental issues.

Perhaps the one issue most scholars might agree upon is that some individuals play games instead of engaging in other life responsibilities. Yet, whether the games themselves are responsible for this, or whether gaming is a fun activity some people do to distract themselves from other mental health issues remains less clear. Nonetheless, several efforts

have moved forward with implementing policies designed to target pathological gaming in hopes of reducing such behaviors. We now turn to a discussion of these policies.

Currently Existing Policies Regarding Gaming Overuse

Kiraly and colleagues (2018) present an important review of current policies targeted at the controversial pathological gaming (PG) concept. Policy approaches include those directed at limiting access to potentially overused technology, and those which are directed at providing warnings of some sort to users themselves. We briefly review each of these in turn.

Policies Geared Toward Limiting Access. One way to reduce individuals' risk of developing overuse of technology is to limit their access to that technology. Perhaps the most well-known example of a policy based on this premise is South Korea's "shutdown" policy which attempts to limit minors' access to the internet between the hours of midnight and 6am by requiring age verification for online use. This policy was implemented due to the perception that internet overuse had become prevalent among Korean youth and was impacting their health and grades. Thus, by carving out a particular "no use" time zone, the shutdown law is intended to free youth for adequate sleep and preparation for school and limit other mental health problems of overuse. The law was initiated in 2011, and has survived constitutional challenge in Korea but remains controversial.

Regarding, the effectiveness of the shutdown law, evidence has generally not suggested the shutdown law is effective in improving youth mental health. Early work suggested that the law had little actual impact on youth internet use (Sung, 2014). More recently, the efficacy of the South Korean "shutdown" policy has been empirically evaluated (Lee, Kim & Hong, in press). This evaluation found that the policy increased youths' nightly sleep totals by approximately 1.5 minutes and reduced the probability of developing gaming addiction by 0.7%,

but only among female users. The authors concluded that the potential human rights costs of the policy and inappropriate regulation of speech were far greater than the modest gains in adolescent health.

A more recent preregistered study (Przybylski, 2018) found that digital screen time had a small and non-practical effect (1.9% of the observed variability) on pediatric sleep. Przybylski additionally concluded that other contextual factors such as family life, school endeavors, and relationships were more culpable for a decline in sleep than screen time was. This finding further questions whether there is evidence for any form of regulation or shut down policy of the use of technology for children or adolescents.

Other countries have also attempted shutdown laws of various sorts. Thailand enacted a shutdown law in the early 2000s, although later repealed it. Vietnam and China have also implemented or considered shutdown laws. In June 2018 French politicians voted to ban the use of mobile phones in primary and middle schools from September 2018. The reported aim of the legislation banning phones in schools is designed to improve students' concentration and preventing cyberbullying and the watching of pornography. Criticisms of the ban have focused on the practicalities of teachers implementing and policing such a ban for all pupils.

Fatigue Systems/Warning Messages.

Fatigue systems are systems that disincentivized ongoing game play. These could take several forms, such as allotting fewer experience points, achievements, etc., to game play that occurs after a set time limit, or providing warnings to players once they've exceeded a certain time playing. At present, regulations regarding such systems appear limited to China (Kiraly et al., 2018) although they could be voluntarily included in platforms by designers themselves.

Fatigue systems have received some critiques regarding potential privacy issues, and stopping points for game play that may cut-off play half-way through meaningful experiences. Empirical analyses of fatigue systems are few, although one analysis by Davies and Blake (2016) suggested that a system of soft warnings and gradually reduced incentives cause fewer disruptions that automatic shutdowns. However, incentives such as experience points only relate to a small part of gamer motivations and fatigue systems may have fewer impacts on intrinsic motivations such as those noted by Self-Determination Theory (Przybylski, Rigby & Ryan, 2010). In other words, if player motivations to play are intrinsic, manipulating extrinsic influences may produce few results.

Ratings for Addictiveness.

One other possibility would be to include potential ratings for a gamer's addictiveness as part of ratings systems such as the Entertainment Software Ratings Board (ESRB) or Pan European Game Information (PEGI) systems. Likely, such ratings may be for specific mechanisms such as loot boxes (Drummond & Sauer, 2018) or other mechanisms that may resemble gambling rather than "addictiveness" per se which is a subjective qualifier. Particularly if voluntarily implemented by industry and focused on specific mechanisms such as loot boxes, such an approach has potential appeal of being specific, free of value laden "addiction" language, and avoids limits on government regulation in some countries such as the US (van Rooij et al., 2010). There is a movement in some countries **toward regulatory enforcement of ratings**, with Belgium being a notable leader **given its declaration of loot boxes being akin to gambling and therefor illegal**. However, this invites the question of whether other "hidden

prize" mechanisms such as those in popular trading cards, or even LEGO toys should be similarly considered akin to gambling[2].

One problem associated with classifying video games according to 'addictiveness' is that research to date has not been able to identify a **clear** addictive component in video games. One cannot make the digital equivalent to the non-alcoholic beer. A recent study indicates that 'addiction' in video game addiction derives from the games' abilities to fulfill our needs for autonomy, relatedness and competence (Weinstein, Przybylski, & Murayama, 2017). Since it is difficult to imagine a game that does not allow for these experiences it is difficult to imagine a game that is not "addictive" if one argues that fun and engaging elements are, in and of themselves, inherently addictive. **It is possible that some mechanisms such as loot boxes may ultimately be more clearly linked to addictiveness, or increased risk of harm, but further research is required.**

Taxation.

Whether video games could be taxed due to their perceived harms is likely to vary according to the jurisdiction and specific national laws. For instance, in the United States selective taxation of "naughty" speech or art is considered unconstitutional as reaffirmed by the Brown v EMA (2011) decision. Such approaches would ostensibly aim to reducing incentives to purchase games by increasing price. Analogies to cigarettes and other controlled substances are obvious, although it is less clear that making public health analogies between games and controlled substances are warranted given significant differences in magnitudes of effect and quality of existing data (Block & Crain, 2007).

[2] For a classification of loot box mechanics that allow for a distinction between those that are equivalent to collectible cards, or Kinder surprises, from those that are more equivalent to scratch-off tickets see e.g. Nielsen and Grabarczyk (2018)

At present, limited empirical evidence exists to suggest that policy efforts geared toward reducing game time are effective in increasing youth well-being. This raises the possibility that such policies may be misdirected, failing in large part due to misspecifying the problem. In particularly, although the WHO's gaming disorder represents the first time a hobby has been classified as a mental illness due to its potential overuse, this move by the WHO has been met by expressions of skepticism and concern from numerous scholars and scholarly groups. For example, a large group of scholars wrote an open letter to the WHO, expressing concern that "gaming disorder" was not based in sound science and could do more harm than good (Aarseth et al., 2018) Similarly, the American Psychological Association and Psychological Society of Ireland's respective divisions and special interest groups for technology, media and art related issues cosponsored a statement opposing the WHO's decision (Society for Media Psychology and Technology and Special Interest Group for Media, Art and Cyberpsychology, 2018). Below we briefly highlight some of the concerns with the pathologizing of gaming.

Does "Pathological Gaming" Exist as an Independent Disorder?

Is PG the Right Target for Policy? For policy targeted toward PG to succeed; PG must uniquely explain some variance in mental or physical health. Whether this is true remains an open question. We are more inclined to believe, as some other scholars and researchers do (e.g. Przybylski et al., 2017; Quandt, 2017), that PG is best conceptualized as symptomatic of other underlying disorders rather than a unique disorder in its own right. Our perspective is based both on data to suggest that underlying mental disorders precede PG symptoms (e.g. Ferguson & Ceranoglu, 2014), but also that PG symptoms tend to be poor predictors of other mental and physical health problems (Przybylski et al., 2017) and lack stability as a construct (e.g. Rothmund, Klimmt & Gollwitzer, in press; Sharkow, Festl & Quandt., 2014). Furthermore, our

clinical experience of working therapeutically with video gamers is consistent with raising concerns about underlying mental health disorders (e.g. anxiety and depression) and the need to cautiously differentiate between highly engaged/immersed individuals and potential PG (Bean, 2018; Nielsen, 2017). Many individuals likely use video gaming as a coping mechanism for other underlying mental health conditions (Kardefelt-Winther, 2017). We express the concern that taking games away abruptly without contextual factors in mind, the act likely does more harm than good and could cause further stigmatization now related to gaming in a clinical field already having difficulties with mental health stigmatization being a barrier to treatment.

The advent of the PG diagnosis in any form has been controversial with ongoing uncertainty about which or what symptoms indicate the disorder, how prevalent it is, and indeed whether it is an independent diagnosis at all. We find these ongoing concerns to be critical, for policy based upon a clinical 'house of cards' may be expected to be of limited value. If policies target the wrong issue, they are doomed to failure. For example, if it is true that PG is merely symptomatic of underlying mental health problems, then targeting those symptoms will merely result in symptom shift rather than true improvement in quality of life. Another risk is that pathologizing gaming behavior as an illness could inadvertently **increase the stigma associated with gaming** behavior and demotivate individuals to seek help **out of concern that non-gaming therapists or psychiatrists may not understand their hobby or gaming culture. Stigma is well associated with reduced help-seeking behavior for other mental health conditions (Klik, Williams & Reynolds, 2019)**. Conceptualizing PG as an addiction also risks locating the problem inherently within the individual (or more likely "naughty" technology) as opposed to understanding the systemic difficulties that often co-occur such as the need for parental psychoeducation with regard to appropriate boundaries in the home. The binary view of young

people as “digital natives” and parents as “digital immigrants” does little to assist in bridging the gap between the technology knowledge base of young people and their parents. This perspective is especially important given research that suggests that ‘video game addiction’ is a symptom of conflict within the family rather than psychopathology (Brus, 2013).

Is There Consensus? Although the inclusion of IGD in the DSM-5 **(in a preliminary section for categories requiring further research)** and the WHO’s announcement regarding “gaming disorder” have sparked considerable debate, it’s worth exploring further these scholarly disagreements (Aarseth et al., 2017; Bean, Nielsen & Ferguson, 2017). Indeed, one issue which continues to be problematic, is whether scholars and clinicians agree that pathological gaming is a primary disorder or a misdiagnosed and misunderstood pastime.

One prior study of clinicians (Ferguson, 2015) found that a majority of clinicians (61.5%) agreed that pathological gaming was a problem for society. This number, interestingly, was greater than for those who believe violent games cause youth violence (39.5%) although it’s worth noting that nearly 30% of clinicians were more skeptical of the concept of pathological gaming. Further, a follow up of behavioral scientists (Ferguson & Colwell, 2017), found that only 29.8% of scholars agreed that pathological gaming is a serious problem. Indeed, the difference in agreement between scholars and clinicians is statistically significant $t(282) = 5.63$, $p < .001$, $r = .318$. **For this article we obtained both of these prior datasets (Ferguson, 2016 and Ferguson & Colwell, 2017) to examine attitudes toward pathological gaming with a few simple analyses.** Combining the samples and using age, gender, video game experience and negative attitudes toward youth themselves we find that concerns about pathological gaming are

predicted by video game experience (β = -.155, p = .007) and negative attitudes toward youth (β = .436, p < .001).

Results from the analysis of datasets described above suggest that concerns about pathological gaming are not **always** objective in nature, even among clinicians or scholars. Clinicians are more inclined to worry about pathological gaming whereas scholars are more skeptical. Further, individuals with less gaming experience and more hostile views of youth express greater concern about pathological gaming. It is possible that clinicians may be overly quick to "see" pathological gaming in patients, reflecting issues with prior controversial diagnoses such as multiple personality disorder (Lilienfeld & Lynn, 2003) and repressed memory syndrome (Lindsay & Briere, 1997). Given these findings, we are less sanguine than Király et al. (2017) that experts in the field (particularly clinicians) are likely to bridge generational divides, critically consume or understand conflicting research, or refrain from misdiagnosing clients. This concern is exacerbated by the fact that clinicians have been offering treatment to all manner of behavioral addictions from sex, sports, work, exercise to shopping for years despite the fact that these are not officially recognized **(e.g. Addictions.com, 2019; Begin Again Institute, 2019)**. Prior to 2013 behavioral addictions were not recognized by either the DSM or the ICD. **Yet** problematic use of non-digital games, the internet, smartphones, shopping, sex, etc. consistently are exempt from diagnostic classification. The inclusion of digital games and not these other behaviors sends the message that digital games are uniquely harmful, for which there is little evidence.

Distancing PG from Substance Abuse and Gambling

Some experts in the field such as Kiraly and colleagues (2018) express the view that PG has "shared similarities" with substance abuse disorders and refer to substance abuse disorders

several other times in their manuscript. Though we understand the good intentions of the authors, we express concern that referencing or comparing to substance abuse (and even pathological gambling) has likely caused more damage than good to the conceptualization of PG. This can result in policies designed for PG that are imported from what works for substance abuse that will be unlikely to work for PG, even were PG to be understood as an independent disorder.

The assumption that PG could be diagnosed similarly to substance abuse has undoubtedly caused many problems for the Internet Gaming Disorder (IGD) diagnosis in the DSM-5 (American Psychiatric Association, 2013). It has been noted that many of the diagnostic criteria for IGD have been criticized for pathologizing normal behavior (e.g. Quandt, 2017), in large part because behaviors that are problematic for use of addictive substances (such as using them to improve mood, thinking about them during the day, giving up other activities for them, etc.) are normal when referencing hobby-like behaviors including gaming, model building, sports, or even reading (Kardefelt-Winther, 2015; Kuss, Griffiths & Pontes, 2017.) Problematic diagnostic criteria cause problems down the line regarding prevalence estimates and the ability of the diagnosis to predict negative outcomes (Przybylski et al, 2017). Furthermore, many researchers have expressed considerable concern about whether utilizing the past criteria of substance abuse creates a top down approach to the diagnostic criteria rather than a bottom up approach further creating confirmatory bias within current research projects (Aarseth et al., 2017; Bean, Nielsen & Ferguson, 2017; Przybylski, Weinstein, & Murayama, 2017).

This is not to say no similarities exist (after all, a fly and a tree are both forms of life), but that similarities are often exaggerated to make alarmist claims such as that gaming can be compared to substances such as heroin or methamphetamines. Such arguments may rest on

claims that have a kernel of truth. **Specifically,** dopamine or particular brain regions are involved in both behaviors, albeit the mechanisms of action differ (Vousooghi et al., 2015). **Yet, these narratives leave** out many nuances that would render such a comparison to appear less meaningful (such as that dopamine release and those brain regions are involved in a myriad of non-pathological behaviors; e.g. holding a newborn, greeting friends, attending a vacation, etc.). Comments made regarding similarities between gaming and substance use, though certainly made in good faith, are easy to be taken out of context by news reporters (Griffiths, 2014), and will likely cause similar misunderstanding among policy makers, clinicians, and the general public.

In this sense the potential use of "warning labels" may be problematic. Király et al. (2018) argue that warning messages in digital games such as "*Remember to take all things in moderation (even World of Warcraft!)*" (n.p.) are analogous to the health warnings that appear on tobacco and alcohol packages. We find this line of argumentation to be unconvincing and an example of when the addiction metaphor is taken too far. We find such 'warning messages' are more analogous to the non-existent warning messages that appear on TV-shows, in fitness centers, in shopping malls, on social media, on smartphones, or in the word processors of scholars who spend far too much time on academic writing. Claiming that the well-established and inevitable negative effects of sustained tobacco and alcohol use are similar to the potential negative effects of gaming is hyperbolic unless policy makers are willing to extend the same warnings regarding gardening, dancing, running, exercising, and every other hobby which are too numerous to count - one could also say that writing academic articles can be addictive using the same language as these claims (i.e. Allegre et al., 2006; Bamber et al., 2003; Berczik et al. 2012; Maraz et al., 2015) further raising concern about the clarity of the current diagnostic

criteria of PG. Allen Frances, Chair of the DSM-IV Task Force warned in 2013 in a criticism of the development of DSM-5 that "mislabeling everyday problems as mental illness has shocking implications for individuals and society: stigmatizing a healthy person as mentally ill leads to unnecessary, harmful medications, the narrowing of horizons, misallocation of medical resources". It is arguable that the WHO inclusion of PG in ICD-11 is a recent example of what Allen has called "Out of control Psychiatric Diagnosis".

Thus, whether discussing diagnosis or policy, we believe it as fruitful if not more so to discuss the important *differences* between PG and substance abuse and even gambling as similarities. Few scholars, for instance, caution that we must distinguish *engaged* from *addicted* heroin users. Comments about dopamine of fMRI studies must be taken with considerable salt, and associations between brain regions and excessive gaming are nuanced (Kuhn et al., 2011). The involvement of dopamine appears to differ in non-trivial ways between gaming and substance abuse (e.g. Vousooghi et al., 2015). Similarly, we urge caution in assuming that gaming works similarly to gambling. Gaming is, of course, a fairly heterogeneous experiencing and commenting that all games work similarly is fraught, however one speaks of them. It's true some games deliberately include cynical gambling-like elements (e.g. loot boxes, which are worthy of criticism). But many do not, and we are less certain that reducing games to variable-reinforcement (particularly given many games are continuously reinforcing) operant structures is meaningful given that motivations for gameplay often focus on less salient, more motivational issues (Przybylski, Rigby & Ryan, 2010). Further, we argue that it would be more productive to build data-based policies around the unique concerns of PG rather than assuming approaches for substance abuse can be transported to PG (as occurred with the symptomatology of IGD).

Policy and Censorship

Although we don't doubt that many policies directed toward PG will be well-intentioned, we do express concern that PG can, at times, be used as a fig-leaf or cover for policies that are authoritarian and censorious in nature. This may be less of an issue in countries where free-speech protections are considerable such as in the United States where taxing or regulating access to games would likely be unconstitutional (forms of speech cannot be taxed or limited like cigarettes). But other governments may be more inherently interested in regulating the flow of information and a public health crisis, whether it truly exists or not, can provide an excuse for the control of speech (see e.g. Golub & Lingley, 2008). Thus, an analysis of policy should not assume all policies are equally well motivated.

Likewise, policy efforts can be the tail that wags the dog of science itself. The WHO acknowledged being under pressure, particularly from Asian governments to provide a PG related diagnosis (Bean, Nielsen & Ferguson, 2017). But an atmosphere of moral panic with attendant news media attention, grant funding, professional prestige, etc., can also create an atmosphere that does not encourage a rigorous testing of the PG concept. Distancing of science from policy may be essential to improve the objectivity of science. This may include suggestions such as distancing scholars from conflict-of-interest funding including clinical treatment centers, media "watchdog" advocacy groups, and perhaps even governments actively pursuing policies related to games. Using open science, particularly the preregistration of study hypotheses prior to data collection may also help limit potential problematic influences on the scientific process.

Points That May Guide Further Policy

Time spent gaming does not indicate pathology

Current evidence suggests that time spent engaged with digital games is a poor measure of pathological behavior. Many engaged players can play fairly seriously without showing interference with other life responsibilities (Charlton & Danforth, 2007; Przybylski, Weinstein, Ryan, & Rigby, 2009). Approaches that focus too heavily on time are likely to over identify non-addicted players and may subsequently miss players with legitimate interference issues. This point is made especially salient given the rise of esports as a viable profession for players, coaches, managers, commentators, etc. and the dedication that pursuing an esports career demands (Nielsen & Karhulahti, 2017).

The cure is not in controlling the game

Any treatment focused separately on removing the "addictive potential" of games is likely to have negligible effects. This of course is because PG may not be the root cause of problems but rather a symptom of or coping strategy to deal with underlying problems. Previous research on computer or programming addiction found that the behavior was in fact not an addiction, but a well-adapted coping strategy (Shotton, 1989, 1991). We believe more qualitative research is needed in order to determine if most cases of PG are not also forms of psychological coping. It seems to us that concerns about addiction are always tied to qualities associated with the most recent and popular games, both of which are qualities that are difficult to remove from games. As an example, few would argue as Griffiths and Hunt (1998) did twenty years ago, that chasing one's high score is a symptom of addiction. If all it took to prevent problem gaming was to remove high score tables, that would indeed be a happy situation.

Might well-intentioned interventions cause harm?

There is a real danger that it might cause more harm than benefit if we start labeling new technology enabled behaviors as pathologies and inadvertently overpathologize non-pathological

behaviors. Potential harms from ill-considered policies may include regulation and censorship of speech, stigmatizing games such that educational settings become afraid of complaints, promoting poorly-verified treatments, focusing in treatment on symptoms rather than causes of problems, promoting moral panics about new technology and fomenting discord between moral panicking parents and their children.

The Need for Preregistered Open Science

At present, most research in this field has not been preregistered and does not exist under conditions of open science (see Carras & Karedefeldt-Winter, 2018; Przybylski et al.. 2017 for exceptions). This raises a significant possibility of Type I error, researcher expectancy effects, and other sources of non-trivial bias in this field. Given the replication crisis that has spread across other areas of social science, including other video game related fields (e.g. Tear & Nielsen, 2013) this issue bears serious consideration. We highly recommend that, in the future, scholars adopt preregistration and open science in order to critically evaluate, rather than merely confirm, theories related to PG.

Concluding Thoughts

With the advent of "gaming disorder" in the WHO's ICD-11, there is a distinct likelihood that policy makers will increasingly target gaming for policies geared toward limiting use. Our concerns mainly fall into two categories. First, the PG related policies may cynically be used by some governments as part of larger, authoritarian efforts to control speech. Related to this, moral panics and policy over PG may have undue influence on PG research itself. And second, that the PG concept itself remains mired in significant controversies and without greater clarity, perhaps promoted by open science principles in this field, policy efforts are unlikely to see much success. Or, simply, policy directed at PG may unwittingly distract from better policies directed at mental

health more broadly and at the cost of free speech rights and the potential of harm to minors. We urge all policy makers to takes these important and cautious points into consideration if a policy is to be introduced and to focus on quality research studies which are not based in confirmatory biases. By using these key points, it will put forth better research, a greater breadth of understanding video gamer culture, and help to delineate actual appropriate diagnostic criteria.

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