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RESEARCH ARTICLE

REVISED Harassment of game makers: Prevalence and impact [version 2; peer review: 1 approved]

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Abstract

Background: Online harassment is a relatively commonplace occurrence in the video gaming industry and player communities. A lack of diversity has unquestionably contributed to the high levels of such incidences.

Methods: In this paper, we take an exploratory approach, via a cross-sectional observational study, to evaluate the harassment of game industry professionals on social media. In this new sphere of growing concern, there is evidence of significant harm for game makers and their radius of impact. We will discuss the prevalence rates, nature of harassment, and the ways in which a lack of diversity has contributed to this phenomenon.

Results: In total, 282 video game industry professionals completed the survey in its entirety. More than half of all participants reported experiencing harassment on social media (59.6%) and nearly all reported witnessing harassment happening to other members of the videogames industry via social media (92.2%). This harassment can have a significant impact on well-being, including increased anxiety (62.1%), feelings of isolation (37.6%) and increased depression (36.2%). Almost one quarter (23.8%) reported symptoms related to post-traumatic stress disorder. One out of 10 participants reported suicidal thoughts because of online harassment. A significant number of respondents (37.3%) reported that had to take steps to reduce their physical safety due to online harassment. Over half of all respondents saying they were targets of hate because of some aspect of their identity.

Conclusions: The results indicate high rates of online harassment, both direct and indirect, among members of the gaming industry at all levels. Responses also pointed to substantial mental health and behavioral impacts of both experiencing and witnessing online harassment. Without large-scale action, this problem will continue to reinforce the lack of diversity inside game studios, pushing out marginalized employees due to a hostile work environment.

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Any reports and responses or comments on the article can be found at the end of the article.

This article is included in the Diversity, Inclusion and Equity in Game Development and Design collection.

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Author roles: Kowert R: Conceptualization, Data Curation, Formal Analysis, Writing – Original Draft Preparation, Writing – Review & Editing; **Crevoshay E**: Conceptualization, Writing – Original Draft Preparation, Writing – Review & Editing

> **REVISED** **Amendments from Version 1**
>
> We have systematically addressed the concerns from reviewer #1 and added more context around the discussions and findings as well as elaborated on the references used in the background of the article.
>
> **Any further responses from the reviewers can be found at the end of the article**

Introduction

Online harassment is a relatively commonplace occurrence in digital game and game adjacent spaces (Anti-Defamation League, 2022; Kowert & Cook, 2022). A 2022 report from the Anti-Defamation League (ADL) indicated that 83% of adults and 60% of teenagers experienced harassment in online multiplayer games in the last six months. Of these, 71% of adult online multiplayer gamers experienced severe abuse, including physical threats, stalking, and sustained harassment. This high rate of incidence is supported by other frequency reports (Bryter, 2020; Kowert & Cook, 2022), which have found the more extreme forms of hate and harassment to be more the exception than the norm. For example, Kowert and Cook (2022) reported that nearly half of all game players have directly experienced sexual harassment (45%) and violent threats (46.8%) in game, and more than half have experienced hate speech (64%). These experiences can have significant mental health impacts on the victim, including short-term distress to long-term post-traumatic stress symptomatology (ADL, 2021). This experience tends to be magnified for victims of marginalized genders and ethnic backgrounds (Bryter, 2020; Fagan, 2021). The sheer prevalence of hate and harassment in gaming communities suggests a level of normalization of these behaviors. This normalization is also sometimes referred to as "toxic gamer culture," which is a phrase that has entered our common vernacular to reference to the set of culturally justified behaviors within gaming communities that are harmful to others within and outside of gaming spaces.

In the last few years, there has been a growing trend for hate and harassment in gaming cultures to expand beyond other players towards game makers. The aim of this study is to quantify these trends and explore the prevalence rates, nature of harassment, and the ways in which a lack of diversity has contributed to this phenomenon. As no known research has previously examined these outcomes among video game industry professionals, this work is exploratory.

Background
Harassment of game makers
In the last few years, there have been several high-profile cases of the harassment of game makers. In this context, "game maker" refers to a professional in the video games industry that works in any aspect of video game production at any level.

While the harassment of game makers (especially female ones) has been a very real issue for many years, in 2019 we started to see discussions of these behaviors within the broader public spotlight when former *Guild Wars 2* narrative designer Jessica Price's was fired from ArenaNet after engaging in a Twitter exchange with a player. Because the Twitter exchange itself was relatively innocuous, her firing surprised and angered many. As Price noted:

> "[ArenaNet CEO Mike O'Brien] spent some time insisting that developers must be friends with the company's customers, and that it was unacceptable to say that we aren't, even when we're not on the clock." (Campbell, 2018).

Discussions about the harassment of game makers reemerged in 2021 after the release of *Boyfriend Dungeon* by Montreal studio Kitfox Games and subsequent harassment campaign of one of the game's voice actors, Alexander Gross, who voiced the game's main villain, Eric. Players developed a universal disdain for this character due to his use of emotional manipulation towards the character-controlled protagonist. This, combined with an insufficiently specific content warning, led to players being taken aback by Eric's overtly manipulative behavior. A small but significant number turned to harassment of Gross in response (Gach, 2021).

Multiple other cases of online harassment of game developers also came to light in the last few years. Several developers and voice actors of *The Last of Us 2*, received harassment and death threats following its release; largely centered around discontent about the main character being depicted as a strong woman with a muscular physique (Hernandez, 2019). Ron Gilbert, the creator of *Return to Monkey Island*, was relentlessly abused online by fans who did not like the art style that was shown in previews of his new release in the series (Troughton, 2022). In an in-depth interview (Mazanko, 2022), Joe Hobbs, lead prop artist at Ubisoft, and Chris Goodswen, an artist at Ubisoft, disclosed that they have received death threats in the past over the release of new titles. Estelle Tigani, the Cinematic Producer on *God of War Ragnarok,* was subject to online sexual harassment after an announcement of a production delay (Mansoor, 2022).

Why these incidents happen is a multifaceted question. We know from previous work from online harassment that there are many interpersonal and environmental reasons someone may be motivated to harass another person online – including lower levels of empathy, the online disinhibition effect, a lack of formal punishment, *etc.* (Cook, 2019; Cook *et al.*, 2018, 2019; March, 2019). However, there are additional variables to be considered specifically within the context of the harassment of game makers, such as the lack of clear boundaries between professional and personal social media accounts belonging to game makers, toxic gaming cultures within the gaming industry, and a lack of diversity within gaming content and cultures. There has also been research exploring a potential cycle of exclusion in gaming cultures (Fron *et al.*, 2007; Kowert *et al.*, 2017) and the role of masculinity in studio culture may specifically play in creating a culture of harassment (Johnson, 2013; 2014).

As noted in the previously mentioned quote from Price, there are often blurred lines between player and creator; making it difficult to negotiate social boundaries. One aspect of this is a lack of formal delineation between the professional and personal social media accounts of game makers. This is, at least partially, because many studios do not have formal social media policies and, if they do, the policies are often unclear about the boundaries between one's personal and professional online presence. Today, whilst there remain many different guides available online about the best way for game makers to engage with game players online, very few (if any) discuss the role of personal and professional boundaries. Organizational climate can also contribute to the harassment of game makers. Some scholars argue that game companies themselves are fundamentally toxic within their organizational structure (Bourdreau, 2022) and the games they create reinforce toxicity through in-game narratives and mechanics (Bergstrom, 2020; Tompkins & Martins, 2021). Some have argued that this is a result of a cycle that starts in early childhood. Referred to as the "Cycle model of exclusion in gaming content and cultures" (Kowert *et al.*, 2017), it is agued that early socialization of games as a male activity leads to the exclusion of non-men in the industry, which creates a male dominated industry and gendered game content and a normalization of gendered views of the world, including sexist attitudes and beliefs within gaming communities and the industry itself. This cycle is self-perpetuating. The outcome of this cycle, "toxic cultures", are particularly concerning as "toxic cultures" in game studios are often overlooked or denied. As discussed by Price in an interview, "Game companies are generally unwilling to be honest with themselves about how they're complicit in creating and sustaining that [toxic] environment" (Farokhmanesh, 2018).

The "cycle model of exclusion" discussed above would also provide some context for understanding the lack of diversity in game content and game industry professionals. A lack of diversity among game industry professionals has unquestionably contributed to high levels of hate and harassment in gaming spaces and towards game makers specifically (Anti-Defamation League, 2022; Kowert & Cook, 2022). The global video game industry is overwhelmingly white and male (Game Developers Association, 2022; International Game Developers Association, 2021), with the self-reported number of women and people of ethnically and racially marginalized identities being significantly lower than that of the general US population (International Game Developers Association, 2021). Similar trends are found in the UK, with the most recent industry report (UKIE, 2022) confirming that most game makers are male (67%), white (66%) and heterosexual (76%).

Game content itself is another element for consideration, as it can reinforce heterogeneity though the reinforcement of stereotypes (Burgess *et al.*, 2008). For example, the systematic lack of female characters (Lynch *et al.*, 2016; Williams *et al.*, 2009) and/or noticeably and disproportionately sexualized female characters (Dill & Thill, 2007). The nature of this content has been under scrutiny for many years, perhaps most notably by Anita Sarkeesian with her *Tropes vs women in video games* YouTube series (Sarkeesian, 2013). The popularity of this video series itself sparked a round of hate and harassment towards Anita and was a precursor to the 2014 Gamergate movement. Gamergate was arguably the first famous example of how public backlash by a small subset of people can directly impact the mental health of industry employees (Mortensen, 2018). It resulted in a psychologically damaging public attack on predominantly female members of the game industry by a subset of predominantly male fans and developers. This movement, which started in 2014 and remains problematic today, quickly devolved from baseless accusations to character assassinations, misogyny, hate speech, and death threats (Campbell, 2014), the repercussions of which were severe. Personal information, including home addresses of the targets and their families, social security numbers, and even nude photos were posted online, forcing people from their jobs and their homes (Robertson, 2014). It is worth noting that while game content has become notably more diverse in the last decade, gaps remain and award-winning and best-selling titles continue to underrepresent characters with marginalized gender, ethnic, and racial identities (Lopez *et al.*, 2019).

While it is possible to draw the connections between a lack of diversity in the industry to game content and then to online harassment, little remains known about the extent to which game creators and other online creators are experiencing this kind of abuse online, and how it impacts their lives, beyond anecdotal evidence (Francis, 2022; Grayson, 2019). Understanding the prevalence and impact of hate and harassment among industry professionals is the first step towards understanding how to address the problem.

Current research

Hate and harassment within gaming communities has received a large amount of attention, both publicly and within scholarly communities. However, less attention has been given to the rising incidences of the harassment of game creators even though there seem to be disproportionately high rates of hate and harassment in professional gaming spaces, both within studios and directed at gaming professionals online. To better understand the prevalence and nature of the harassment of game makers, we conducted a cross-sectional study of game makers *via* an online survey.

Methods

Setting

The survey was advertised online across social media platforms (*Twitter* and *Facebook*) and email lists targeted at game professionals (e.g., gamesnetwork). The survey was also directly emailed to the authors' points of contact at several game studios, from small independent studios to large AAA studios. Data was collected throughout the month of October 2021.

Procedure

The only requirement for participation in this study to be a professional within the games industry at any level. After providing informed consent, participants were asked a series of questions about their direct and indirect (*i.e.*, witnessed) experiences with online harassment *via* social media. All participants completed the questions in the same order. The survey consisted of six sections: workplace role and culture, direct experiences of harassment, witnessed experiences of harassment, general experience and impact of harassment, general thoughts about harassment *via* social media, and demographic questionnaire. Demographic questions were presented at the end of the survey for all participants to reduce any potential priming effects for gender or ethnicity.

Measures

Participants were asked to complete the Game Developers Social Media Experience Survey (Kowert & Crevoshay, 2021). This measure includes a series of questions about harassment *via* social media. First, they were asked about the kinds of actions they had experienced, the perceived motivations behind them, any changes in behavior due to the harassment, and their mental health impact. They were then asked the same series of questions in relation to their indirect (*i.e.*, witnessed) experiences. Participants were also asked their general thoughts on actions that could mitigate these behaviors in the future. The full questionnaire can be found in the extended data.

Results

Our survey results, presented below, are openly available in full on the open science framework repository (Kowert & Crevoshay, 2021).

Participants

In total, 304 participants responded to the online call for participation and completed the survey. 7.2% (22 participants) were excluded from the final analysis as they indicated that they did not work in the games industry. Of the 282 participants who fully completed the survey, 46.1% worked for an AAA developer, 42.6% for an Indie developer and 11.3% did not work directly within a game studio. Most participants worked in core creation or development roles within their studio. 17% of participants held management positions and 11% were administrative or ancillary roles. The rest of the participants were primarily game publishers (3.5%), journalists or critics (1.8%) educators (1.1%) who work with the gaming industry, game artists (0.7%), or producers of game related events (0.7%). Most participants were White (72.3%), male (54.8%), aged 26-45 (78.7%), and resided in the United States (50.7%).

Prevalence of harassment

More than half of all participants reported experiencing harassment on social media (59.6%) and nearly all participants reported witnessing harassment happening to other members of the videogames industry *via* social media (92.2%). Most of the reported harassment had been directly experienced (82.1%) and witnessed (94.2%) on *Twitter*. However, as seen in Table 1, a significant amount of harassment was reported being experienced and witnessed across platforms. Several respondents specified "Other" platforms in their responses, including *Tumblr*, *Snapchat*, and personal email.

Nature of harassment

Participants were asked to identify which of a series of behaviors they had experienced and witnessed from a list of eight behaviors: trolling/griefing (deliberate attempts to upset or provoke someone), offensive name-calling, threats of physical violence (conveying threats of physical or mental injury), stalking (online monitoring and/or information gathering used to threaten or harass), sexual harassment, discrimination by a stranger due to age, gender, ethnicity, ability or sexual orientation, doxxing (having personally identifying information made public), swatting (having a stranger make

Table 1. Percentage of experienced and witnessed harassment of game industry professionals across social media platforms.

Platform	Directly experienced	Witnessed
Twitter	82.1	94.2
Online forums	51.8	62.7
Facebook	25	36.2
Instagram	17.3	20.4
Discord	6.5	2.3
Twitch	3	2.3
YouTube	2.4	2.3

Table 2. Prevalence of types of harassment experienced and witnessed by game industry professionals on social media by percentage.

Type of harassment	Directly experienced	Witnessed
Trolling/griefing	86.3	93.1
Offensive name calling	79.2	91.5
Threats of physical violence	48.2	76.9
Identity-based discrimination	42.9	81.2
Stalking (off- or online)	38.7	56.9
Sustained harassment	39.9	63.1
Doxxing	25.6	53.5
Swatting	3	21.9

a false report to emergency services to target someone), and sustained harassment (harassment that occurs over multiple instances or a longer period of time).

More than half of all participants reported experiencing harassment on social media (59.6%) and nearly all participants reported witnessing harassment happening to other members of the videogames industry *via* social media (92.2%). The type of harassment directly experienced and witnessed by members of the gaming industry ranged from offensive name-calling to sustained harassment, to one incidence of an entire website being created mimicking an alternate history to one's life. Several participants reported "Other" forms of harassment as well, including threats to one's job, impersonation attempts through the creation of fake social media profiles, hacked social media accounts, and violent physical assault. The rates of the most common forms of harassment, both directly experienced and witnessed, is presented in Table 2.

Trolling/griefing (broadly defined as deliberate attempts to provoke someone) were the most common form of harassment reported, followed by offensive name calling. Identity based harassment was experienced by 42.9% of participants.

Nearly one in two participants reported experiencing threats of physical violence, with three out of four participants having witnessed threats of physical violence directed at another member of the industry. Stalking was also experienced (38.7%) and witnessed (56.9%) by a large percentage of participants. Sustained harassment, defined as harassment that occurs over multiple instances or over time, was experienced (39.9%) and witnessed (63.1%) by almost half of everyone surveyed. Doxxing, which refers to one's personal information being shared online and is considered one of the most severe forms of online harassment, was experienced by a quarter of all participants (25.6%) and witnessed by more than half (53.5%). Swatting, which is when a stranger makes a prank call to emergency services to have them dispatched to you and was the most severe form of online harassment on the list of selections, had been witnessed by more than one in five individuals (21.9%).

Motivation of harassment
When asked what they thought the motivating factors behind the harassment were, a variety of responses were selected. The most popular included: being a public figure in the games community (47.9%); identity-based harassment (46.1%);

Table 3. Perceived motivating factors for harassment of game industry professionals through social media by percentage.

Motivating factor	Directly experienced	Witnessed
Being a public figure in games	47.9	73.0
Identity based harassment	46.1	77.2
Games industry generally (not studio specific)	43.1	55.2
General reputation of a specific studio	35.9	59.5
A recent game release	37.1	64.5

the norms of the games industry generally independent of the game studio one works for (38.3%); displeasure towards a recent game release (37.1%) and the general reputation of working for a particular studio (35.9%). A similar proportion of responses were found when asked about what they believed motivated their witnessed experiences of harassment. These findings are presented in Table 3.

Response to harassment

As a direct target, participants reported varying degrees of response to online harassment. Blocking and reporting (85.1%) and ignoring the comment or behavior (83.3%) were the most common responses. Many also reported that they confronted or challenged the harasser (33.3%) and shared information about the experience with others (26.2%). Almost one-third (29.2%) of participants noted that they contacted their workplace for information on how to respond and/or to seek support. 43.3% of all participants reported that they have attempted to hide an aspect of their identity (e.g., age, gender, ethnicity, ability) because of being targeted by hate.

As a witness to online harassment, participants most often blocked or reported the person (84%), followed by ignoring the comment (49.4%). As was found when being the direct target, just about one-third of participants reported that they directly confronted or challenged the offender (30.4%) and shared information about the experience with others (34.6%). Only 17.5% of participants reported that they sought information from their workplace about how to respond and/or seek support when witnessing online harassment of others in the gaming industry.

Impact of harassment

Participants reported that being a direct target and/or directly witnessing online harassment has had a significant impact on their mental health and offline behavior. In terms of mental health, most participants reported feeling uncomfortable or upset (77.7%). Most participants reported increased anxiety (62.1%) and being less social (51.1%). Around a third of participants reported feeling more isolated or alone (37.6%) and increased depression (36.2%). Almost one quarter (23.8%) reported symptoms related to post-traumatic stress disorder. One out of 10 participants reported suicidal thoughts because of online harassment.

In terms of offline behavior, many participants reported it had negatively impacted their work performance (41.1%), they had sought professional psychological help (27.3%), and had personal relationships disrupted (22%). Just about a third reported they had to take steps to reduce risk to their physical safety (37.2%). One out of 10 participants had contacted the police because of online harassment. These results are summarized in Table 4.

Policy and support considerations

Around half of all participants reported that their studio had a policy about online harassment already in place (47.5%); however, most did not have support structures in place around online harassment specifically (58.5%).

Most respondents believe that gaming companies should have stronger policies in place around hate and harassment (87.2%). Most respondents believe that the games industry contributes to the ease with which people engage in online hate and harassment (62.4%) and should be doing more to support employees being targeted by online hate and harassment (92.2%). The way that social media works is also believed to contribute to the ease with which people engage in online hate and harassment (96.5%) and respondents think social media companies should be doing more to support people being targeted online (93.7%). Most respondents (80.1%) believe laws need to be created to enact consequences around online harassment. These numbers are significantly higher than those reported by the ADL from a survey of the overall game playing population in 2021, who found only 68% of respondents believe games companies should be doing more to support people being targeted by online hate, with 59% endorsing the need to create new laws being developed to address hate and harassment online.

Table 4. Impact of online harassment among game industry professionals by percentage.

Impact of harassment	%
Mental health impact	
Felt uncomfortable	77.8
Been less social	51.4
Felt isolated/alone	38
Increased depression	36.6
Behavioral impact	
Taken steps to reduce risk to physical safety	37.3
Occupational performance negatively impacted	41.5
Contacted police	10.2

Discussion

The harassment of game makers through social media is a growing concern. This study looked at the prevalence and nature of online harassment among game makers to better understand the scope of this problem. Results indicated high rates of online harassment, both direct and indirect, among members of the gaming industry at all levels. Responses also pointed to substantial mental health and behavioral impacts of both experiencing and witnessing online harassment. Notably, the harassment of game makers seems directly tied to a lack of diversity within the industry, as evidenced by the ubiquity of identity-based harassment.

The impact of hate and harassment of game makers appears to be more severe than found among a general game playing population. As reported by the ADL in 2019, less than one-third of their respondents reported feeling uncomfortable or upset (31%), felt isolated or alone (14%), took steps to reduce risk to physical safety (12%). depressive or suicidal thoughts (11%), or had their occupational performance negatively impacted (13%). Comparable outcomes between game makers and the general game playing population (as reported by the ADL) are presented in Table 5. This may be, at least partially, due to the high rates of the more severe forms of harassment, doxxing and swatting, being reported by game makers.

The prevalence of the more severe forms of harassment are noteworthy when compared to the frequency at which these behaviors occur within the general gaming community, specifically doxxing and swatting. As reported by Kowert and Cook (2022), of the general game playing population, 11.1% had experienced doxxing directly, and 24.1% had witnessed it happen to someone else. In this analysis, we found 25.6% of game makers report a direct experience and 53.5% reporting directly witnessing, respectively. For swatting, similar numbers of direct experience are found among the general game playing population (3%) and members of the gaming industry (3%), however far more industry members have witnessed swatting (21.9%) than among the general population (1.5%). We postulate that one of the causes of these higher rates among industry members is because awareness of this phenomenon is higher among this population.

Table 5. Impact of online harassment on game players (ADL, 2019*) and game makers by percentage.

Type of Harassment	Game players	Game makers
Mental health impact		
Felt uncomfortable	31	77.8
Been less social	16	51.4
Felt isolated/alone	14	38
Increased depression	11	36.6
Behavioral impact		
Taken steps to reduce risk to physical safety	12	37.3
Occupational performance negatively impacted	13	41.5
Contacted police	9	10.2

*Information is drawn from ADL (2019) but percentages are attributed to a 2020 data collection.

Notably, threats of physical violence are similar between industry members (48.2%) and the general game playing population (46.8%), suggesting that these behaviors may be more endemic to gaming cultures rather than something specific to members of the gaming industry.

While the results of this work are noteworthy, there are limitations to consider. First, the sample was recruited primarily *via* social media. It is possible that this led to an oversampling of those most active on social media and, as such, these findings may be over-representative of the proportion of game industry professionals who have experienced or witnessed harassment through these platforms. Future work should aim to recruit samples through studios directly to obtain a more representative sample. Secondly, most participants within the sample worked in core creation or development roles within the studio. However, we know harassment towards industry professionals can happen to those in any role and at any level. Future work should aim to sample more professionals in different areas of the gaming industry to better evaluate the frequency and impact of these behaviors across job functions. Lastly, this work was developed to be exploratory, with the aim of providing a broad overview of what harassment *via* social media looks like for game industry professionals. Future work should build upon these findings to evaluate any potential points of intersectionality between harassment experiences, mental health impact, role within the industry, and demographic factors.

Conclusions

Harassment of game industry professionals is a large problem with most people in the game industry having directly experienced some form being directed at them specifically. This harassment can be (and often is) magnified if the person is a marginalized voice, with over half of all respondents saying they were targets of hate because of some aspect of their identity. The harassment has a negative impact on industry members' feelings of comfort, isolation, wellbeing, and job performance. Many game makers also recognize the need for more policy change to better address this growing issue. Games leadership need to create stronger policies around hate and harassment of their employees, delineate clearer social boundaries between game maker and game player, and provide greater mental health support should their employees become targets of online harassment. Without large-scale action to address the norms of interaction between developers and fans, this problem will continue to drive people out of the industry and reinforce the lack of diversity inside game studios, pushing out marginalized employees due to a hostile work environment.

However, we are hopeful that these first steps are being taken as, in 2022, Bungie, a major game studio based in Washington State, filed a lawsuit against a *Destiny 2* player and streamer who had harassed and threatened staff members (Good, 2022). Many game studios have also started to speak publicly about zero tolerance for the harassment of their employees, including, most recently, Respawn. Respawn saw a marked increase in harassment after dealing with a crashing issue in their game *Apex Legends*, as well as an AMA (Ask Me Anything chat on Reddit) about the game (Respawn (@Respawn), 2022). It will take more than Twitter statements for these norms to change, but the public pushback from game studios is a relatively recent development, a marked shift from the perspective of ArenaNet CEO Mike O'Brien in 2018 that developers "must be friends" with players. The authors hope that this shift marks the beginning of an era of more comprehensive response and proactive support of people who make games by their employers.

There is also a growing number of researchers in this space actively seeking strategies for victims of online harassment to better mitigate the negative mental health impacts and avenues for support (Cote, 2016; Tang *et al.*, 2019). Drawing from this research and work from other disciplines, such as the online harassment of female journalists (Ferrier & Garud-Paktar, 2018), we can begin to develop effective reporting strategies, support structures for the victims, and tools to dismantle the systems for harassment.

However, while change can, and should include, greater institutional support, this isn't the starting point for sustainable change. In efforts across the industry, we are starting to see game studios make the connection between the people in the room, making decisions about game content, mechanics, and marketing and the resulting harassment. With this shift to more diversity, and with the newfound sense of responsibility that game makers have towards their employees, we can begin to see the seeds of a sustainable and substantive change in both the expectations and incidence of harassment of people who makes games and of other players. We firmly believe a more diverse group of people making games that work well for a more diverse player base is the first step towards a more inclusive and less hateful environment.

Consent

To retain data integrity and anonymity, the survey data was collected and retained on private servers hosted by Take This. Participant responses were anonymized and no identifying information was collected.

Data availability

OSF: 'Game Developers Social Media Experience Survey'. DOI: https://osf.io/5bd4g/ (Kowert & Crevoshay, 2021)

Underlying data

The project contains the following underlying data:

- Data collection 2021, Game Developers Social Media Experience Survey (internet recruitment).csv (raw data)

Extended data

This project contains the following extended data:

- Game Developers Social Media Experience Survey, (Game Developers Social Media Experience Survey.pdf)

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Open Peer Review

Current Peer Review Status: ✓

Version 2

Reviewer Report 21 March 2023

https://doi.org/10.5256/f1000research.143119.r161074

✓ **Amanda Cote** [iD]

School of Journalism and Communication, University of Oregon, Eugene, Oregon, USA

In response to my original feedback, the authors have made many small changes to update how this piece refers to/draws on additional existing work. I appreciate their thoughtfulness and how they have adjusted the article while still remaining concise and attentive to the word limits.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Games, gender, identity, audience studies, media industry studies

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

Reviewer Report 04 January 2023

https://doi.org/10.5256/f1000research.139461.r158166

? **Amanda Cote** [iD]

[1] School of Journalism and Communication, University of Oregon, Eugene, Oregon, USA
[2] School of Journalism and Communication, University of Oregon, Eugene, Oregon, USA

This study employs an online survey of 282 gamesworkers to assess their direct and witnessed

experiences with harassment. It breaks down the types and prevalence of harassment they have experienced or witnessed, the perceived motivations of harassers, and the impacts harassment has had on themselves and others in terms of mental and physical health. Overall, this study is clearly conducted and written, with good attention to limitations. It also addresses a newer and significant aspect of harassment and toxicity in gaming communities and cultures. There is little to no academic work currently addressing the harassment of game makers, although a lot of anecdotal evidence shows that it occurs frequently and significantly.

There are only a few small things I would like to see the researchers consider moving forward.

First, the literature review could benefit from slightly clearer organization and attention to the broader history of harassment directed at gamesworkers. The piece opens with recent examples of harassment (pg. 1-2), stating, "*The harassment of game makers first made its way into the spotlight when former Guild Wars 2 narrative designer Jessica Price's was fired from ArenaNet after engaging in a Twitter exchange with a player.*" This event, however, did not occur until 2018; the harassment of game makers, especially female ones, and public recognition of these issues predate this event by several years, at minimum - e.g., Jennifer Hepler's harassment at Bioware in 2012-2013, GamerGate, etc. Some of these events come up later in the article, but it would be useful to note and trace some of this broader trajectory (and the role of identity) from the start. Harassment in the games industry is not a new issue! This only makes it *more* in need of studies like this. Similarly, it's worth briefly noting the intellectual development of concepts such as the cycle of exclusion in gaming. These also date back until at least the early 2000s (e.g., Fron *et al.* (2007)[1]), and that labor should be recognized. Other work on the industry, such as Robin Johnson's studies of masculinity in studio culture, would also be useful here (see suggested citations at end[2,3]).

Second, the content analysis section (pg. 4, lack of representation in games) could benefit from some more updated stats, such as those by Lynch *et al.* (2016).[4]

Finally, the analysis and discussion could benefit from more connections back to existing work on industry, as well as on players' experience with harassment and their means for coping with this. The ADL data is useful, but there are also many critical analyses of these issues that fit the survey data well and could be tied in. The results of this study are important and meaningful; be sure to situate them within the field effectively to demonstrate this to the fullest extent.

Suggested Citations:
- Fron, J., Fullerton, T., Morie, J. F., & Pearce, C. (2007). 'The Hegemony of Play'. *Situated Play, Proceedings of DiGRA 2007 Conference*[1]

- Johnson, R. S. (2013). 'Toward Greater Production Diversity: Examining Social Boundaries at a Video Game Studio'. *Games and Culture*[2]

- Johnson, R. (2014). 'Hiding in Plain Sight: Reproducing Masculine Culture at a Video Game Studio'. *Communication, Culture & Critique*[3]

- Lynch, T., Tompkins, J. E., van Driel, I. I., & Fritz, N. (2016). 'Sexy, Strong, and Secondary: A Content Analysis of Female Characters in Video Games across 31 Years'. *Journal of Communication*[4]

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3. Johnson R: Hiding in Plain Sight: Reproducing Masculine Culture at a Video Game Studio. *Communication, Culture & Critique*. 2014; **7** (4): 578-594 Publisher Full Text

4. Lynch T, Tompkins J, van Driel I, Fritz N: Sexy, Strong, and Secondary: A Content Analysis of Female Characters in Video Games across 31 Years. *Journal of Communication*. 2016; **66** (4): 564-584 Publisher Full Text

Is the work clearly and accurately presented and does it cite the current literature?

Partly

Is the study design appropriate and is the work technically sound?

Yes

Are sufficient details of methods and analysis provided to allow replication by others?

Yes

If applicable, is the statistical analysis and its interpretation appropriate?

Yes

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Games, gender, identity, audience studies, media industry studies

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 10 Jan 2023

Rachel Kowert

Reviewer's comment: First, the literature review could benefit from slightly clearer organization and attention to the broader history of harassment directed at gamesworkers. The piece opens with recent examples of harassment (pg. 1-2), stating, "The harassment of game makers first made its way into the spotlight when former Guild Wars 2 narrative designer Jessica Price's was fired from ArenaNet after engaging in a Twitter exchange with a

player." This event, however, did not occur until 2018; the harassment of game makers, especially female ones, and public recognition of these issues predate this event by several years, at minimum - e.g., Jennifer Hepler's harassment at Bioware in 2012-2013, GamerGate, etc. Some of these events come up later in the article, but it would be useful to note and trace some of this broader trajectory (and the role of identity) from the start. Harassment in the games industry is not a new issue!

Author's response: The reviewer is correct in that this is not a new issue. Highlighting the event with Jessica Price was meant more to illustrate this is when the discussion of the harassment of game makers moved out of more niche communities and whisper networks and towards a more broad acknowledgement of its existence within this industry specifically. The wording has been changed slightly in the introduction to reflect this. Specifically, the following text has been added:

While the harassment of game makers (especially female ones) has been a very real issue for many years, in 2018 we started to see discussions of these behaviors within a broader public spotlight when former Guild Wars 2 narrative designer Jessica Price was fired from ArenaNet after engaging in a Twitter exchange with a player.

Reviewer's comment: Similarly, it's worth briefly noting the intellectual development of concepts such as the cycle of exclusion in gaming. These also date back until at least the early 2000s (e.g., Fron *et al.* (2007)1), and that labor should be recognized. Other work on the industry, such as Robin Johnson's studies of masculinity in studio culture, would also be useful here (see suggested citations at end2,3).

Author's response: The aim of this paper is not to explore why these events happen but rather shed light on their frequency and mental health impact. That said, the text has been amended to recognize that there has been work in this space examining the potential underpinning motivations/causes for this behavior. Specifically, the following text has been added:

There has also been research exploring a potential cycle of exclusion in gaming cultures (Fron et al., 2007; Kowert et al, 2017) and the role masculinity in studio culture may specifically play in creating a culture of harassment (Johnson, 2013; 2014).

The cycle of exclusion in gaming culture is also more formally described later in the paper. Specifically with the following passage:

Some have argued that this is a result of a cycle that starts in early childhood. Referred to as the "Cycle Model of Exclusion in Gaming Content and Cultures," (Kowert et al., 2017), it is believed that early socialization of games as a male activity leads to the exclusion of non-men in the industry, which creates a male dominated industry and gendered game content and a normalization of gendered views of the world including sexist attitudes and beliefs within gaming communities and the industry itself. This cycle is self-perpetuating.

Reviewer's comment: Second, the content analysis section (pg. 4, lack of representation in games) could benefit from some more updated stats, such as those by Lynch *et al.* (2016).4

Author's response: Thank you for this suggestion! Lynch *et al.* (2016) has been added as a reference in that section.

Reviewer's comment: the analysis and discussion could benefit from more connections back to existing work on industry, as well as on players' experience with harassment and their means for coping with this. The ADL data is useful, but there are also many critical analyses of these issues that fit the survey data well and could be tied in. The results of this study are important and meaningful; be sure to situate them within the field effectively to demonstrate this to the fullest extent.

Author's response: We agree that situating this work within the context of the ongoing work within this field is important. We lean heavily on the ADL work here as it is publicly available data looking at a broad range of experiences and impact. While it can be useful to draw on work looking at player harassment, the harassment of game makers is something that needs to be examined through a more nuanced lens because of the additional contextual factors that are specific to this experience among game developers (studio culture, lack of personal/professional boundaries, personal and professional consequences to action and inaction).

That said, additional text has been added to better contextualize this work and lend more insight into potential solutions and strategies. Specifically, the following text has been added:

There is also a growing number of researchers in this space actively seeking strategies for victims of online harassment to better mitigate the negative mental health impacts and avenues for support (Cote, 2016; Tang et al., 2019). Drawing from this research and work from other disciplines, such as the online harassment of female journalists (Ferrier & Garud-Paktar, 2019), we can begin to develop effective reporting strategies, support structures for the victims, and tools to dismantle the systems for harassment.

Competing Interests: No competing interests were disclosed.

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