

DETERMINANTS OF HARASSMENT IN ONLINE MULTIPLAYER GAMES
(RESEARCH PAPER)

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ABSTRACT

Objective. Online multiplayer games allow for large numbers of participants to play simultaneously online. Unfortunately, this has given rise to harassment and abuse. The current study used the criminological framework of Routine Activity Theory to identify possible circumstantial and individual risk factors that predict both general and sexual harassment victimization in this online context.

Method. An online survey (N = 886) was conducted. Measures included harassment exposure, guardianship, and target suitability. These determinants were assessed as predictors of general and sexual harassment victimization using structural equation modelling.

Results. Both sexual harassment victimization ($R^2 = .71$) and general harassment victimization ($R^2 = .65$) were strongly associated with the determinants. The (revealing) gender of the gamer is associated with the type of harassment received: women are more likely to encounter sexual harassment, while male avatars are more likely to be harassed in the general sense. Playing in Player-versus-Player game modes is associated with higher general harassment victimization. Harassing other gamers provokes retaliations, and thus, general and sexual victimization. Similarly, witnessing peer harassment is associated with both general and sexual harassment as it is an indication frequenting toxic environments.

Conclusions. Our models explained a sizable percentage of the variation in harassment, indicating that Routine Activity Theory can be applied to understand online harassment in gaming. Specifically, it was found that different types of in-game exposure predict different types of victimization and that (revealing) gender (of gamer or avatar) is associated with changes in harassment.

Keywords:

Routine Activity Theory, harassment, cyber bullying, online multiplayer games

INTRODUCTION

Online abuse is a widespread phenomenon that takes place in all corners of the Internet, including video game culture. Due to developments in technology and improvements in connectivity, there is an entire online social framework where gaming enthusiasts can easily interact with one another. Online multiplayer games, for instance, allow large numbers of participants to play simultaneously online. While online platforms can contribute to a further expansion of the gaming experience and enable constructive debate with likeminded people, it can also give voice to destructive individuals set on humiliating, even terrorizing, certain populations and, in the long run, stand in the way of social progress (Barak, 2005; Joinson, 2003). Using the Routine Activity Theory as theoretical framework and survey as method, this study aims to identify the circumstances under which online sexual and general harassment victimization in gaming can take place and identify possible risk factors associated with victimization.

Online harassment in the gaming community

The video game market is expanding at a fast pace, and so is its audience. Women are playing more video games than ever (Jayanth, 2014). A recent ESA report even found that “women age 18 or older represent a significantly greater portion of the game-playing population (31%) than boys age 18 or younger (17%)” (Entertainment Software Association, 2016, p. 3). The gaming industry has, however, not yet fully closed the gender gap: most games cater to a male audience (Jayanth, 2014). Even though the female audience is growing, female representation in the video game industry is often lacking or stereotypical (Dill & Thill, 2007). In 2014, a trending topic that dealt with this issue, #GamerGate, became a magnet for sexist comments, online harassment, and even death threats aimed at gamers and game developers of all genders who addressed the problematic representation of female video gamers and characters (Douglas, 2016).

Whilst, due to #GamerGate, harassment and sexism in gaming quickly became a popular media topic (Hern, 2014; Lewis, 2015; Stuart, 2015), the empirical scientific base on the subject of online (sexual) harassment within games is still underdeveloped. Harassment affects targeted players strongly, and is associated with depressive symptoms, delinquent behavior and substance abuse (Mitchell, Ybarra, & Finkelhor, 2007). As the social aspect of online multiplayer games was declared the biggest motivation for playing and the immaturity of other players the least favorite feature of online gaming (Griffiths, Davies, & Chappell, 2004), it comes as no surprise that in-game harassment can ruin the online gaming experience.

In fact, general and sexual harassment have been found to be predictors of females players' withdrawal from online games (Fox & Tang, 2016b). Online multiplayer games in particular are associated with harassment cases. For example, 64% of females experienced sexism in World of Warcraft (Brehm, 2013). Sexual harassment is also associated with coping behavior such as changing gender online, a phenomenon known as genderswapping, as a way to prevent unsolicited male attention (Fox & Tang, 2016b). A study amongst American internet users found that almost half of men (49%) and a substantial minority of women (40%) believe that the online gaming community is more welcoming to men than women (Duggan et al., 2014).

Routine Activity Theory

General harassment in gaming involves hostile behaviors, such as insulting the skills or intelligence of others, interfering with their progress, swearing, or threatening them (Fox & Tang, 2014, 2016b). *Sexual harassment* is a more specific form of harassment that can be further subdivided in three types: gender harassment, unwanted sexual attention, and sexual coercion (Gelfand, Fitzgerald, & Drasgow, 1995). *Gender harassment* refers to hurtfully targeting individuals based on their gender with undesired comments and remarks. *Unwanted*

sexual attention involves clear communications of sexual desires like proposing or implying sexual activities. With *sexual coercion*, a person is subjected to physical or psychological pressure to cooperate in a sexual act (Barak, 2005; Biber, Doverspike, Baznik, Cober, & Ritter, 2002; Gelfand et al., 1995). Unless specified as *general* or *sexual* harassment, '*online harassment*' or '*harassment victimization*' in this study refers to both forms, while sexual harassment covers all three discussed subtypes.

While there is no doubt of the intrusive and even destructive nature of online harassment (Barak, 2005; Bossler, Holt, & May, 2012; Mitchell et al., 2007), there is still much uncertainty as to whether it should and can be classified as a crime. According to Furnell, "Computer-assisted crimes are cases in which the computer is used in a supporting capacity, but the underlying crime or offence either predates the emergence of computers or could be committed without them" (Furnell, 2003, p.22). Harassment is present in both the online and offline world. The main difference is that online harassment is delivered via an electronic medium. As regular (offline) harassment is prosecuted as a criminal offence in most countries, Furnell's logic supports the idea that online harassment might be considered a computer-assisted crime in some cases (Furnell, 2003; van Wilsem, 2013).

Situating online harassment in a criminological context, the framework of the *Routine Activity Theory* might be applied to help understand and identify possible circumstances under which it can take place (Cohen & Felson, 1979; Holt & Bossler, 2009). Routine Activity Theory focuses specifically on circumstances in which certain criminal acts occur instead of solely concentrating on perpetrators' characteristics (Bunch, Clay-Warner, & Lei, 2015). The theory poses that victimization is most likely to take place in high-risk situations where individuals are (a) in close proximity of offenders, (b) lack capable guardianship, and (c) appear to be attractive targets, (Cohen & Felson, 1979; Holt & Bossler, 2009). Routine Activity Theory has been applied in the study of risk factors that predict computer-assisted

crime before, including general harassment (Bossler et al., 2012; Holt & Bossler, 2009; van Wilsem, 2013). In the current study, the theory is applied to both sexual and general harassment victimization in the gaming context.

Antecedents of online harassment in gaming

(a) Exposure to a motivated offender

In order for victimization to occur, Routine Activity Theory first supposes exposure to a motivated offender (Bossler et al., 2012; Holt & Bossler, 2009; van Wilsem, 2013). This idea is translated into several indicators for an online gaming environment. Firstly, chances of victimization are higher if gamers commit harassment. This due to possible retaliations they might receive for their perpetration (Bossler et al., 2012; Holt & Bossler, 2009; van Wilsem, 2013). Secondly, victimization is associated with witnessing peer harassment as this indicates frequenting a hostile gaming environment, and thus, being exposed to harassing individuals. Lastly, online participation also means more exposure to motivated offenders. Hence, time spent online might also play a role (Hinduja & Patchin, 2008).

However, as remarked by Holt & Bossler (2009), simply spending time online will not automatically increase harassment and specifying the setting is required. For example, most online multiplayer games provide an option to play against a computer (PvE: Player versus Environment game mode) or against other players (PvP: Player versus Player game mode). PvE games still entail multiplayer encounters where harassing behaviors can occur, but we expect there to be less adversarial interaction since the opponents would be computer-controlled and other gamers would be companions rather than enemies. As the PvP setting naturally provides more adversarial interaction between gamers than PvE, it is hypothesized that it will be associated with higher victimization. Five factors, as summarized in the first

hypothesis, indicate a hostile environment and, thus, an increased exposure to potential harassers.

H1: Exposure to a motivated offender will increase harassment victimization. The following factors are assumed to contribute: (1) peer harassment, (2) perpetration, (3) frequency of online participation on a multiplayer platform, (4) game mode: playing versus players or the environment, and (5) other type of harassment victimization experienced at the same platform.

(b) Absence of guardianship

According to Routine Activity Theory, online harassment is more likely to occur when there is absence of guardianship. Guardianship is defined as personal, physical and social factors that could prevent victimization (Bossler et al., 2012).

Personal guardianship involves being sufficiently computer-skilled to respond to online harassment quickly as well as being cautious and hesitant with the sharing of personal information. Both these measures of personal guardianship have been found to correlate with online victimization (Bossler et al., 2012). Nevertheless, acquiring computer skills tends to help with more computer-focused victimization, like hacking, but may be of less value in relation to the prevention of harassment. Hence, only sharing personal information will be considered a determinant for harassment victimization in this study (Bossler et al., 2012; van Wilsem, 2013). *Physical guardianship* is a more difficult concept to apply to an online environment. It could be thought to encompass, for example, computers programs designed to prevent crime by blocking explicit images. However, software was found to play no role in predicting or preventing online harassment (Holt & Bossler, 2009).

Social guardianship refers to the prevention of crime by the involvement or mere presence of others. In the Bossler et al. study (2012) no link between this type of guardianship

and online harassment was found. This study, however, only took into consideration the location of the computer (public or private). The organizational context within a game might offer a relevant expansion to this approach. For instance, the perception of an organization's tolerance of harassment influences the frequency of occurrence of such behaviors among members of that organization (Fitzgerald, Drasgow, Hulin, Gelfand, & Magley, 1997). Furthermore, a study of online harassment in a professional environment found that the acceptability of discrimination correlated with harassment perpetration (Ritter, 2014). Many online multiplayer games have game masters who function as referee in the game and can moderate gamers' interactions. In some online multiplayer games' terms of use (Blizzard-Entertainment, 2012; Riot-Games, 2012), there are regulations concerning general and sexual harassment. Thus, game administrators could be considered as social guardians. The importance and interferences of good game masters have been reported in online posts (Chonin, 2006; "Corrupted WoW Game Master," 2008). Other harassment research confirms the relevance of game masters' interventions and control as new elements worth investigating in a multiplayer online setting (Fox & Tang, 2016b).

H2: The absence of personal and social guardianship is associated with higher harassment victimization.

(c) Target suitability

Research found that members of sexual minority groups reported more harassment than their heterosexual counterparts (Finn, 2004; T. Williams, Connolly, Pepler, & Craig, 2005), indicating that minority groups are considered easy targets for bullying practices. Studies also show that men outnumber women by at least four to one in the online multiplayer population (Brehm, 2013; D. Williams, Yee, & Caplan, 2008). Consequently, research specifically in the field of online sexual harassment showed that being female increases risk

of victimization (Barak, 2005). Similar findings were reported for gaming environments (Brehm, 2013). Males are, of course, also harassed while gaming online and are even more likely to report the online gaming context as the most recent location where they were harassed (Duggan et al., 2014). However, a study concerning online harassment (Duggan et al., 2014) suggests that males are more likely to be on the receiving end of general harassment (e.g., being called offensive names and physically threatened), as opposed to females who encounter more sexual harassment. Additionally, as female gamers were found to be treated differently when playing the role of a man (Fox & Tang, 2016b; Hussain & Griffiths, 2008), it would be reasonable to assume that the gender of gamers' avatar(s) might also influence the type of harassment gamers receive and the degree to which they experience victimization.

H3: Being a suitable target (member of a sexual minority group) will predict online harassment victimization. Female gamers and avatars will be more likely to experience sexual harassment. Male gamers and avatars will be more likely to encounter general harassment.

Theoretical model

In Figure 1, we can see the theoretical model and expected relationships as derived from Routine Activity Theory. Sexual harassment victimization is thought to be triggered by gamers' sexuality, their gender, their avatars' gender, game mode, online participation, peer harassment and perpetration. Personal and social guardianship would decrease the number of victimization cases. General harassment victimization is driven by the same determinants. Contrary to sexual harassment, however, general harassment would increase in case of male players and avatars. Finally, general harassment victimization contributes to sexual harassment victimization and vice versa as being victimized indicates frequenting in toxic environment, and thus, exposure to motivated offenders.

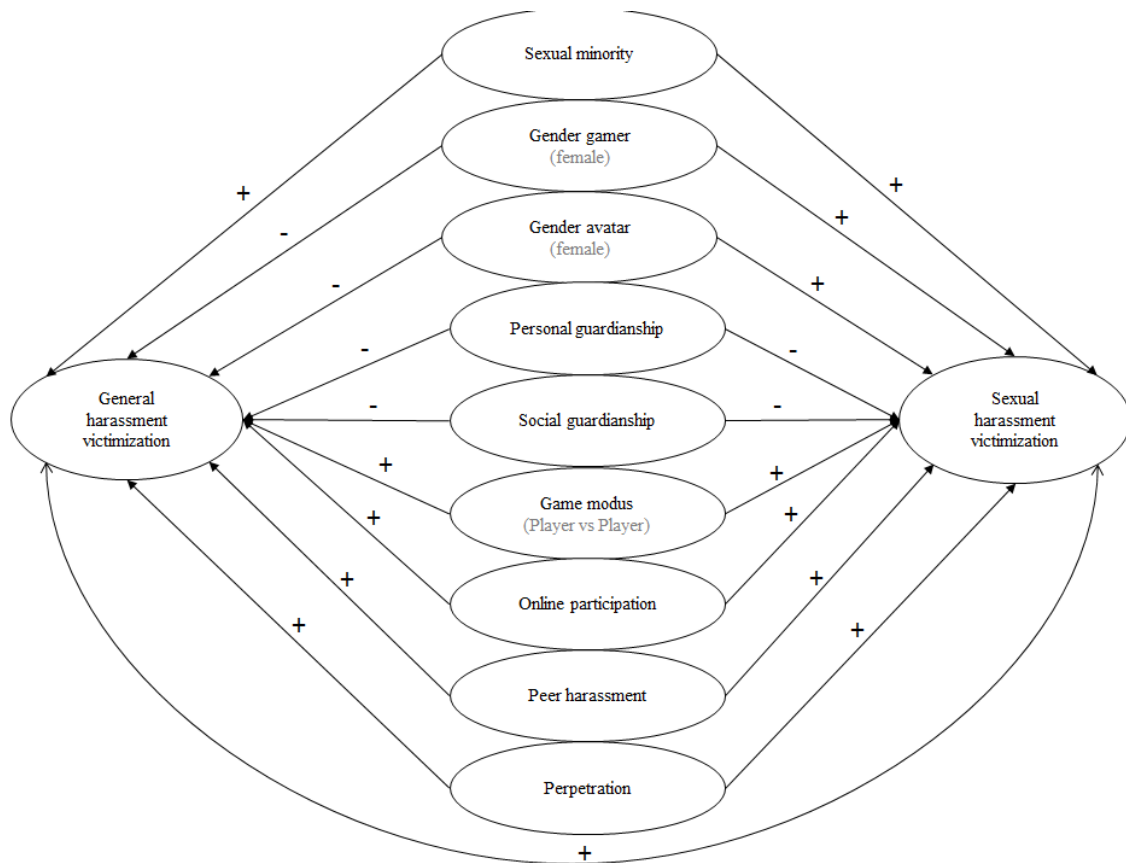


Figure 1. Theoretical model: predicting general and sexual harassment victimization based on Routine Activity Theory

METHOD

Measurement and scale reliability

The included measures are now discussed. Unless otherwise specified, all scales in the survey used five-item scales ranging from never (= 1) to very often (= 5). Scale reliabilities are summarized in Table 1. All scales in the survey were put through exploratory factor analysis (EFA) in order to test the underlying structure of the (sub)scales (Tables 1-3).

Video game harassment behaviors – sexual harassment & general harassment. The Video Game Harassment Behaviors scale provides two subscales (Fox & Tang, 2013, 2016a). The VGHB-GH, which measures general harassment victimization (e.g., said curse or swear words) and the VGHB-SH, which measures sexual harassing behaviors (e.g., made sexist comments or insults). Two components had eigenvalues over Kaiser's criterion of 1. Bartlett's test of sphericity, $\chi^2(26) = 92.95$, $p < .001$, which indicated that the items correlated enough to provide a reasonable basis for factor analysis. In Table 1, you can find the factor loadings. The clustering of items suggest that the first component represents general harassment victimization, and the second sexual harassment victimization, as intended by the scale developers (Fox & Tang, 2013, 2016a). Cronbach's alphas for the general harassment and sexual harassment victimization subscales were 0.90 and 0.87, respectively (Table 4).

Table 1. Factor loadings on the two harassment victimization components

	<i>Item</i>	<i>Factor 1:</i>	<i>Factor 2:</i>
		<i>General harassment victimization</i>	<i>Sexual harassment victimization</i>
1	said curse or swear words directed at YOU	0.81	0.22
2	made comments about YOUR intelligence	0.80	0.28
3	said general insults directed at YOU	0.86	0.24
4	made comments about YOUR abilities to play	0.69	0.26
5	asked YOU to leave the game	0.61	0.37
6	made sexist comments or insults towards YOU	0.36	0.77
7	made comments about YOUR appearance or weight	0.31	0.63
8	doubted YOUR motivations for playing video games because of your gender	0.18	0.84
9	expressed unsolicited liking or affection towards YOU	0.17	0.59
10	made a rape joke at YOUR expense or threatened to rape YOU	0.32	0.64

Exposure to motivated offenders. Similar to Fox & Tang (2016a) the items of both the VGHB subscales were also used for measuring the occurrence of the gamers witnessing peer harassment (e.g., I witnessed a player make sexist comments or insults). The items correlated highly enough to provide a reasonable basis for factor analysis ($\chi^2(26) = 70.7, p < .001$). Given Kaiser's criterion on two components, this is the number of components that were retained in the final analysis for the peer harassment scale. When observing the factor loadings on witnessing peer harassment in Table 2, we see that items 1-5 are associated with the first factor, general peer harassment and items 6-10 with the second factor, sexual peer

harassment. Cronbach's alphas for the general peer harassment and sexual peer harassment subscales were 0.93 and 0.91, respectively (Table 5).

Table 2. Factor loadings on the two peer harassment components

	<i>Item</i>	<i>Factor 1:</i> <i>General</i> <i>peer harassment</i>	<i>Factor 2:</i> <i>Sexual</i> <i>peer harassment</i>
1	said curse or swear words directed at SOMEONE	0.81	0.34
2	made comments about SOMEONE's intelligence	0.83	0.34
3	said general insults directed at SOMEONE	0.87	0.30
4	made comments about SOMEONE's abilities to play	0.79	0.26
5	asked SOMEONE to leave the game	0.58	0.45
6	made sexist comments or insults towards SOMEONE	0.42	0.76
7	made comments about SOMEONE's appearance or weight	0.34	0.77
8	doubted SOMEONE's motivations for playing video games because of their gender	0.24	0.68
9	expressed unsolicited liking or affection towards SOMEONE	0.32	0.68
10	made a rape joke at SOMEONE's expense or threatened to rape SOMEONE	0.28	0.71

Additionally, the frequency of the gamers' own perpetration was requested (e.g., I said curse or swear words to another player). Bartlett's test of sphericity, $\chi^2 (26) = 114.02$, $p < .001$, indicated that the items correlated highly enough to provide a reasonable basis for factor analysis. Given the Kaiser's criterion on two components, this is the number of components that were retained in the final analysis for the perpetration scale. When observing the factor loadings, however, we noticed two items with a discrepancy (see Table 3). Following Stevens' guidelines (2002), who recommends interpreting only factor loadings with an absolute value greater than 0.4, the item 'I expressed unsolicited liking or affection

towards another player' loads on neither factor whereas the item 'I asked another player to leave the game' loads on both factors (Stevens, 2009). Regardless of this outcome, we will apply the original scale division as developed by Fox & Tang (2013) (Fox & Tang, 2013). This for the reason that the other scales, victimization and peer harassment have the same number of items and use the same wording, only from a different perspective than the perpetration scale. The Cronbach's alphas for general harassment ($\alpha = 0.87$) and sexual harassment perpetration ($\alpha = 0.81$) subscales were more than acceptable.

Table 3. Factor loadings on the two harassment perpetration components

<i>Item</i>		<i>Factor 1:</i>	<i>Factor 2:</i>
		<i>General harassment perpetration</i>	<i>Sexual harassment perpetration</i>
1	said curse or swear words directed at SOMEONE	0.71	0.26
2	made comments about ANOTHER PLAYER's intelligence	0.77	0.19
3	said general insults directed at ANOTHER PLAYER	0.84	0.26
4	made comments about ANOTHER PLAYER's abilities to play	0.73	0.19
5	asked ANOTHER PLAYER to leave the game	0.45	0.44
6	made sexist comments or insults towards ANOTHER PLAYER	0.26	0.82
7	made comments about ANOTHER PLAYER's appearance or weight	0.21	0.75
8	doubted ANOTHER PLAYER's motivations for playing video games because of their gender	0.19	0.67
9	expressed unsolicited liking or affection towards ANOTHER PLAYER	0.18	0.35
10	made a rape joke at YOUR expense or threatened to rape YOU	0.23	0.62

To further measure gamers' exposure to potential harassers, participants were also asked to specify the amount of time spent in the online game environment (forum or in-

game). The level of adversarial interactions with others could depend on whether they play against a computer (PvE: Player versus Environment) or against other players (PvP: Player versus Player). Participants were therefore asked in which game mode they play the most (1 = only PvE, 2 = mostly PvE, 3 = equally as much PvE as PvP, 4 = mostly PvP, 5 = only PvP).

Absence of guardianship. To measure personal guardianship, it was asked how often on a five-point scale (1 = never to 5 = very often) the gamer shares personal information while being on a gaming platform. To measure social guardianship, respondents were asked to indicate their perceptions of organizational responsiveness to harassment, using the nine items of Miner-Rubino & Cortina. An example item would be: ‘investigates harassment complaints no matter how minor the harassment may seem’ (Miner-Rubino & Cortina, 2007).

Target suitability variables. Finally, to find out which individuals are significantly more targeted by online harassment in gaming, gamers’ sexuality, their genders, and their avatars’ genders were inquired.

Table 5. Scale reliability and means for determinants of harassment victimization

	Mean	<i>SD</i>	<i>α</i>
General harassment perpetration	1.72	0.75	.87
Sexual harassment perpetration	1.12	0.34	.81
General peer harassment	3.10	0.99	.93
Sexual peer harassment	1.90	0.96	.91
General harassment victimization	2.08	0.85	.90
Sexual harassment victimization	1.39	0.67	.87
Social guardianship	3.20	1.02	.93

Procedure

This cross-sectional study made use of an online survey. The survey was pre-tested in a small group and subsequently ran for two weeks. Respondents could participate in a prize draw of ten \$10 Steam or Amazon gift cards. Advertising for this survey on fora (e.g., forums.mmorpg.com/), subreddits (reddit.com) and Facebook groups resulted in a convenience sample of online players. Since it was noticed in pre-testing that both harassment and organizational context strongly differed between online multiplayer games, participants were asked to name the game they had played the most in the past month and fill out the questionnaire for that one particular game.

In total 1,576 responses were recorded. In order to avoid inattentive responses, two instructed questions (“This is a test question. Please respond...”) were also included (Meade & Craig, 2012). Cases that were incomplete (n = 506), gamers who had not been on a platform (game or forum) in the last month (n = 17), failed to answer both test questions correctly (n = 626), and/or had given contradictory answers which brought doubt to the reliability of their participation (n = 42) were omitted from the sample. Data-cleaning resulted in a sample of 886 cases.

Data was analyzed using the statistical program R. The structural equation modelling (SEM) and confirmatory factor analysis (CFA) were conducted with the LAVAAN package (Rosseel, 2012, 2014). For the model fit assessment, we evaluated the Robust Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Square Residual (SMRM), and the Robust Comparative Fit Index (CFI). CFI should be larger than .95, RMSEA and SMRM values should be .05 or lower to indicate a good fit. Small deviations from these standards are, however, acceptable (Marsh, Hau, & Wen, 2004). Chi-square values are not as relevant for this study as they are sensitive to sample size (n = 886) (Kline, 2010).

RESULTS

Gaming behavior and sample

The sample ($n = 886$) included 712 men (80.4%) and 174 women (19.6%). That men outnumber women by at least four to one in the online multiplayer populace is an expected pattern as this was also found in other studies (Brehm, 2013; D. Williams et al., 2008). Male gamers' age ranged from 15 to 57 with an average of 25 ($SD = 6.9$). Female gamers were significantly older. Their ages ranged from 16 to 64 with an average of 29 ($SD = 10.3$). Participants were asked to fill out the survey for the online multiplayer game they had played the most in the past month. The five most frequently cited online multiplayer games were Final Fantasy XIV (31%), Star Wars: The Old Republic (24%), Blade & Soul (11%), Black Desert (7%) and EVE Online (6%). There was no significant gender difference in online participation: male gamers spend on average 32 hours per week on an online gaming platform (forum or in-game) and female gamers 34 hours. There was, however, a clear gender difference in preferred game mode; 88% of women played mostly or only in a Player-versus-Environment mode in comparison to 73% of men.

Measurement model

The overall measurement model demonstrated an adequate fit (robust CFI = .89, robust RMSEA = .06, SMRM = .06, chi-square (902.00) = 4149.40, $p < .001$). The fit, however, slightly improved when two items of the social guardianship scale with the lowest factor loadings were excluded (robust CFI = .90, robust RMSEA = .06, SMRM = .06, chi-square (817.00) = 3685.10, $p < .001$). After this exclusion, although there were minor deviations, the final measurement model demonstrated an acceptable fit. In Figure 2 the structural model is pictured. In order to maintain clarity, only significant standardized regression paths ($p < .05$) and no covariances are displayed. In Table 6 significant correlations ($p < .05$) of the included measures are presented.

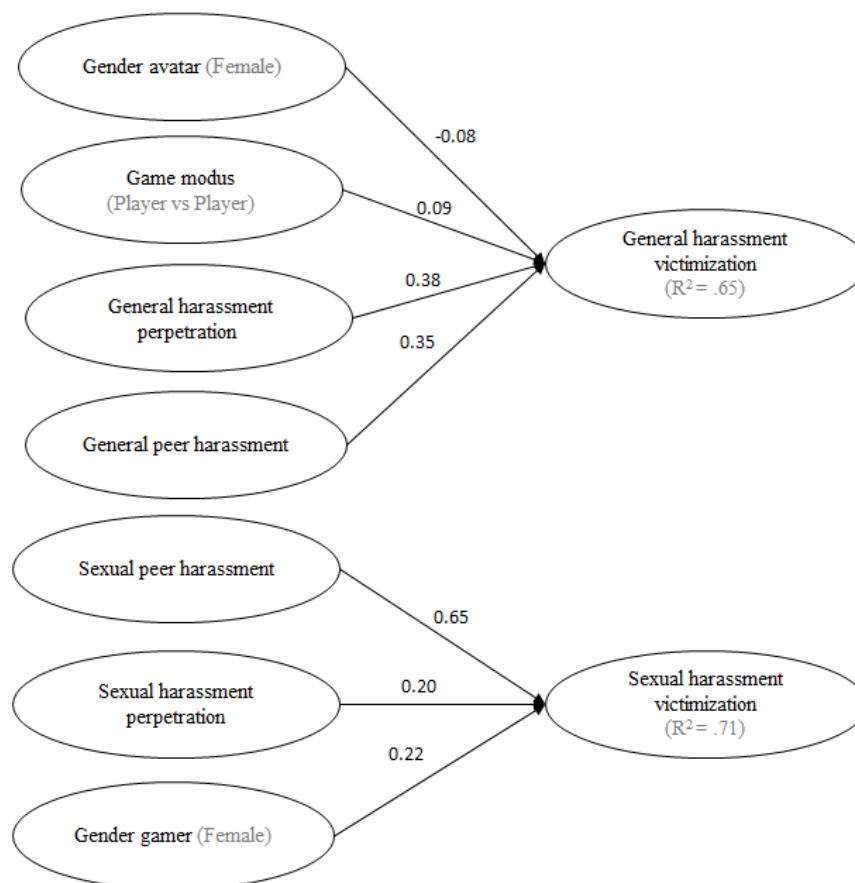


Figure 2. Structural model (standardized paths): predicting general and sexual harassment victimization via Routine Activity Theory

A high effect size ($R^2 > .70$) is measured for sexual harassment victimization ($R^2 = .71$) (Moore, Notz, & Flinger, 2013). In Figure 2 we see that sexual harassment victimization is driven by three determinants derived from the Routine Activity Theory. Firstly, target suitability plays a role in sexual harassment victimization: when the gamer is female, the chances of sexual harassment victimization rise. Secondly, the model shows that perpetrators of sexual unwanted behaviors fall victim to unwanted sexual behaviors themselves. Finally, witnessing peer harassment, which means frequenting toxic social environments, causes sexual harassment victimization as well.

For general harassment victimization, a moderate effect size ($.50 < R^2 < .70$) is measured ($R^2 = .65$) (Moore et al., 2013). Four determinants derived from the Routine Activity Theory were found to contribute to general harassment victimization. The model in Figure 2 shows that gamers with male avatars are found 'more suitable' targets for general harassment, and are thus, more likely to encounter it. Similarly to sexual harassment, general harassment victimization depends on the exposure to motivated offenders. General harassment, therefore, increases when gamers witness harassment or actively harass others. Additionally, playing in a Player vs Player mode, which potentially contributes to exposure to adversarial interactions, also increases cases of general harassment. Contrary to expectations, lack of guardianship did not predict either type of victimization. In Table 5 we can see that social and personal guardianship have significant, although weak, relations with the determinants.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) General harassment perpetration	1										
(2) Sexual harassment perpetration	.53	1									
(3) General peer harassment	.44	.24	1								
(4) Sexual peer harassment	.35	.40	.67	1							
(5) General harassment victimization	.55	.34	.58	.48	1						
(6) Sexual harassment victimization	.33	.45	.41	.66	.57	1					
(7) Game mode (Player vs. Player)	.33	.20	.20	.07	.28	.09	1				
(8) Online participation	.15	.08	.07	.07	.10	.07	n.s.	1			
(9) Personal guardianship	.13	.08	.11	.07	.11	.13	n.s.	.12	1		
(10) Social guardianship	n.s.	n.s.	-.08	-.10	n.s.	n.s.	n.s.	n.s.	n.s.	1	
(11) Gender avatar (female)	n.s.	n.s.	.08	.15	n.s.	.20	-.11	.12	n.s.	-.07	1

Table 6. Correlations between included measures (all $p < .05$)

DISCUSSION AND IMPLICATIONS

The present study aimed to identify predicting factors of general and sexual harassment victimization in online multiplayer games based on three Routine Activity Theory elements, (a) exposure to motivated offenders, (b) target suitability, and (c) lack of guardianship as theoretical frameworks. Both sexual harassment victimization ($R^2 = .71$) and general harassment victimization ($R^2 = .65$) were successfully predicted using the determinants derived from Routine Activity Theory.

(a) Exposure to motivated offenders

When gamers often witness *peer harassment*, it indicates they frequent toxic environments where they can fall victim to harassment. Regularly witnessing harassing behaviors, therefore, increases victimization. Additionally, Figure 2 illustrated that *perpetration* contributes to victimization. In the past many cyber-bullying studies have stated that bullies get bullied due to retaliations (Bossler et al., 2012; Holt & Bossler, 2009; van Wilsem, 2013), which seems to be the case in this study as well.

Furthermore, playing in Player-versus-Player *game mode* is found to increase general harassment victimization. Numbers in the current study also indicate a clear gender difference in preferred game mode with women playing less frequently in PvP, which focuses on team play and features more social interaction. Female players, thus, might make a conscious decision to fight against computer-controlled characters rather than other players because of harassment. The Assunção study (2016) hypothesizes that this self-sustaining pattern of exclusion from the PvP competition mode possibly occurs when female gamers face harassment.

(b) Target suitability

In literature, we found evidence indicating that the suitability of a harassment target depends on sexuality and gender (Barak, 2005; Brehm, 2013; Duggan et al., 2014; Finn, 2004). Results, however, show that being a member of a *sexual minority group* does not predict either type of victimization in online multiplayer games. This contradicts other online harassment studies (Finn, 2004; T. Williams et al., 2005). The (revealing) *gender* of the gamer is associated with the type of harassment received; women are more likely to encounter sexual harassment, while players with male avatars are more likely to be harassed in the general sense. Although the gender of avatar(s) did not contribute to predicting sexual harassment victimization, in Table 6 we see a relationship ($r = .20, p < .05$) between *avatars' gender* and the frequency of sexual harassment occurrence. This indicates that gamers using exclusively or mostly female avatars are more likely to experience sexual harassment. An explanation as to why having female avatars does not contribute to sexual harassment is that 79% of female gamers in our sample use mostly or exclusively female avatars. The structural equation model can therefore potentially not make a clear distinction between the group with female gamers and the group which plays with mostly or exclusively female avatars. Another study found that female gamers at times use genderswapping as a coping strategy for sexual harassment (Fox & Tang, 2013; Fox & Yen Tang, 2015). Nevertheless, as we found that having male avatars predicts general harassment victimization (Figure 2), the efficacy of this coping method in toxic environments seems only partly effective.

(c) Lack of social and personal guardianship

Lacking *personal guardianship* (by sharing personal information) and lacking *social guardianship* (by frequenting in uncontrolled environments) do not predict either type of victimization. Although game administrators serve as authorities in the context of an online

multiplayer game, the perception of their presence and punitive actions did not associate with general and sexual harassment victimization. Furthermore, even though research by Ritter (2014) suggested that the acceptability of discrimination was related to harassment intentions, no link between the perception of organizational responsiveness and perpetration was found (Table 6). The Ritter study was, however, conducted in a professional work environment which provided less anonymity than online multiplayer and also possibly included real-life consequences for perpetrators. Additionally, when taking a closer look at the means and distributions of the social guardianship items, we see that the majority of participants had rather neutral opinions on the matter (Table 4). A possible explanation for this is that the game developers do not sufficiently make their anti-harassment actions public, which, consequentially, makes it difficult for gamers to identify game developers' harassment policy. Regardless of in-game authority not being associated with victimization or perpetration, we found a negative relationship between social guardianship and peer harassment, which serves as a predictor of victimization. Increasing social guardianship could, therefore, potentially have a negative effect on the toxicity of an environment, lower peer harassment, and consequently, victimization. Especially considering the fact that organizational unresponsiveness leads to the withdrawal of targeted gamers (Fox & Tang, 2013), game developers have every reason to implement a harassment policy in order to make as many people as possible feel included in their game, and accordingly, reach a wider audience.

LIMITATIONS AND FUTURE DIRECTIONS

As we are dealing with self-report data, sample bias and social desirability bias must be taken into consideration when interpreting these results. Furthermore, this study had some limitations concerning measures. Firstly, the level of experience with online gameplay and with online communication could also be factors in reporting victimization. In the current study, participating gamers spent on average 34 hours weekly on a multiplayer platform. We assume that these are experienced gamers who have potentially become desensitized to some offensive behaviors which transpire there and, thus, report less victimization.

Another limitation of this study was that harassment victimization was assessed in a single game of the player's choice. Although this minimized participants' confusion when rating organizational responsiveness, this also means the study is not representative for the experiences of all online multiplayer games gamers play. Even more so, other studies reported that, when experiencing harassment victimization, targeted players withdraw from games and end communication with other gamers (Assunção, 2016; Fox & Tang, 2013). Real prevalence rates of harassment could, thus, be higher.

Thirdly, in the Fox & Tang study (2013) using gender-masking names was reported as a coping strategy female gamers employed to decrease harassment (Fox & Tang, 2013). Aside from hiding gender by using avatars, gender-masking account names should also be considered a determinant in future research, as it could potentially be associated with sexual harassment victimization reporting.

Finally, future research could probe more specifically what communication mediums gamers use when experiencing victimization. Voice-chat, for instance, could influence sexual harassment victimization reporting as it makes gender identification easier. Virtual reality (VR), which allows players to carry out virtual social activities, will almost inevitably introduce a new, more physical form of victimizing tactics (Frank, 2016; Roose, 2016). As of

yet there are no published studies on virtual harassment, so whether the degree of severity is higher than text-based harassment remains to be seen.

CONCLUSIONS

This study was the first to apply Routine Activity Theory on harassment in the online gaming context. We saw that two elements of the theoretical framework, namely exposure and target suitability, predict victimization. Additionally, since a different set of predictors were confirmed for each form of harassment, this study recognizes the importance of making a distinction between harassment types (i.e., general and sexual). Finally, this study was the first to link the type of harassment gamers received to their avatars' gender.

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