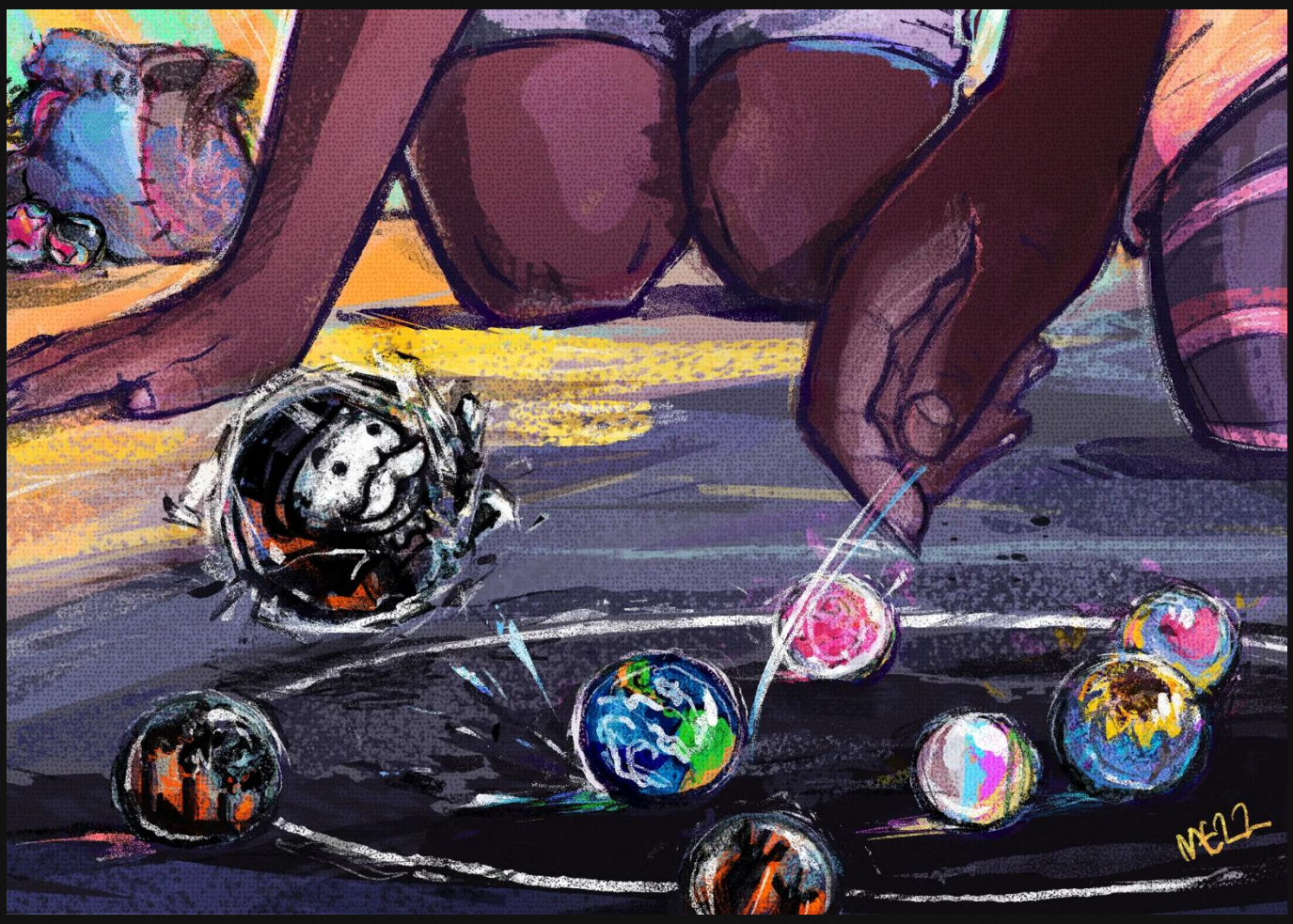

Untitled. Illustration by Mika Edström

Special Issue

This Time it's for all the Marbles.

Towards Social Justice in Digital Gaming

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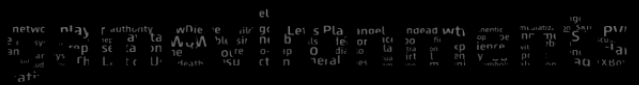

review

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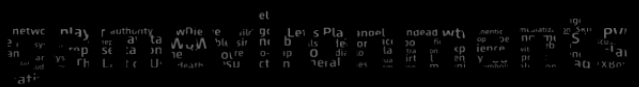
Peer-reviewed Article

Gaming against Violence: An Exploration of Video Games as Tools for Sexual Violence Prevention Education

Kenzie Gordon

Abstract: This article engages the question of whether a prosocial video game can be an effective intervention for combating values that support rape culture. Employing a methodology that blends the Values at Play framework (Flanagan and Nissenbaum 2014) with feminist game analysis and empirical measurements, it demonstrates the capacity of intentionally-designed games to broaden the toolkit of gender-based violence prevention professionals. Existing scholarship that has examined the relationship between gameplay and attitudes towards sexual violence has predominantly taken a deficit-focused approach, examining whether games like *Grand Theft Auto IV* (2008) have a negative effect on the attitudes of players. This research is largely disconnected from approaches in game studies, leading to methodological shortcomings that fail to acknowledge the real-world conditions in which people actually play games. I argue that the integration of theories of player interpretation of ludic interactions, strategies in digital pedagogy, and empirical measurement of player beliefs can produce more robust findings, which consider the multiple meanings players may find in game spaces. This article describes a mixed-method approach to exploring beneficial applications of games for sexual violence prevention work, surveying participants on attitudes towards sexual violence before and after playing the bystander intervention game *Decisions That Matter* (2015). The findings of this research echo other studies that blend violence prevention education with video games (Potter et al. 2019), suggesting that games may be an effective means of reducing adherence to rape myths. As the sexual violence prevention sector works to grapple with the scale of the problem and the increasing prevalence of digital forms of sexual violence, the importance of developing effective, evidence-based digital tools for violence prevention is heightened. This study sheds light on the benefits and drawbacks of games as an educational format for violence prevention and suggests methodological considerations and interdisciplinary approaches that will be essential to building an evidence-based digital toolkit for violence prevention.

Keywords: Rape Culture, Rape Myth Acceptance, Bystander Intervention, IRMA,



Sexual Violence Prevention, Serious Games, Feminist Methodology, gamevironments

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In the field of sexual violence prevention, video games are often seen as *media non grata* – a whole genre of entertainment that is relentlessly violent and hopelessly gendered. It isn't difficult to see why, given the widespread notoriety of representations of sexual violence in games like the *Grand Theft Auto* (hereafter, *GTA*) series (1997-2021), and hard-to-miss scandals such as the 2021 sexual harassment lawsuit filed against Activision-Blizzard by former employees (Zwiezen 2021). With few exceptions, inside the violence prevention sector, games are generally seen as something to be worked against, not with. At the same time, the imperative for innovative violence prevention tools has never been higher. Despite half a century of feminist intervention, rates of sexual violence remain shockingly high. Worldwide, one in three women will experience sexual violence in their lifetime, with gender minorities and racialized individuals at even higher risk (RAINN 2016). Given the sizable growth in research examining applications of serious games to social issues and public health crises, it is past time that academic research engages in earnest with what opportunities and affordances serious games can bring to gender-based violence prevention efforts.

The limited scholarship that has examined the relationship between gameplay and attitudes towards sexual violence has predominantly taken a deficit-focused approach, examining whether playing games like *GTA* have a negative effect on the attitudes of players. This research, which is closely linked to the broader violence in games discourse exemplified by the work of Anderson and Dill (2000), is largely

disconnected from scholarship in game studies, leading to methodological shortcomings that fail to reproduce the real-world conditions in which people actually play games. This paper describes an interventionist method for exploring beneficial applications of games for sexual violence prevention work, conducting an effect study on a bystander intervention game while considering its representational aspects. The findings of this project align with other research that blends violence prevention education with videogames (Potter et al. 2019), suggesting that games can be an effective means of reducing adherence to rape myths. From a disciplinary perspective, the more exigent concern surrounding sexual violence research in games may be the need to construct methodologies that allow for representational and narrative analysis of games while also interrogating the meanings that players extract from them. The blended media and effect study methodology outlined here may offer some insights into how these often-incompatible research agendas can be aligned.

Prior to discussing the methods and results of this research, I will provide some background on the existing body of research on sexual violence in games and identify the gaps and shortcomings that disciplinary divides have created in the methodologies employed in this field of inquiry to date. This will be followed by an exploration of the research methodology employed in the study at hand, one that blends the empirical approach of effect studies with a critical game studies lens, informed by Flanagan and Nissenbaum's Values at Play framework (2014). The results of the study yield initial insights into the potential for the integration of games into a multi-modal violence prevention toolkit.

Throughout this work, I use the terms *sexual violence*, *sexual assault*, and *rape*. I use *sexual violence* to refer to behaviours across the sexual violence continuum (Kelly

1987), from micro-aggressions and the indirect harms of rape culture on one end to violent sexual assaults on the other. I do so with a recognition that all forms of sexual violence accrue harm in those who experience them, and that individuals may feel their harms differently. When speaking about any harms of a sexual nature, I will use *sexual violence*. In Canada, the Criminal Code uses *sexual assault* to describe any physical assault of a sexual nature (Department of Justice Canada 2016), and I follow this convention when describing physical assaults of any kind. The United States, where much of the English-language research on sexual violence in games is conducted, centres its definition of rape around the act of penetration (US Department of Justice 2012), a very limiting definition that unnecessarily ranks forms of sexual assault and centres a heteronormative definition of assault. Unfortunately, the prevalence of the term rape in extant research and general concepts like *rape myths* and *rape culture*, make its use inevitable. When I use the term rape, I use it as a position along the continuum of sexual assault broadly conceived, and I am not invested in drawing firm definitional boundaries around what is an essentially contested concept (Reitan 2001). Most research and game design in this field treats gender as a binary and largely ignores trans identities or violence in queer relationships. As a result, my discussion of sexual violence prevention games and research is largely focused on cisgender, heterosexual men's violence against cisgender, heterosexual women, a significant shortcoming of violence prevention games which I discuss below.

Studying Sexual Violence in Games

Despite the acknowledgment throughout games studies research of the harmful ways in which commercial games often portray sexual violence, little academic work has specifically examined sexual violence as a phenomenon in video games, with some

notable exceptions including the accounts of sexual violence in games provided in *Violation: Rape in Gaming* (Thorn and Dibbell 2012) and Emma Vossen's theoretical pairing of consent and the magic circle in practices surrounding games (2018). Although the content and nature of sexual violence in games have not been directly addressed at any length, a small but growing body of research has examined the behavioural effects of representations of sexual violence on players. This has largely come in the form of empirical effect studies examining the harmful impacts of engagement with games that include antisocial representations of sexual violence on the rape myth acceptance levels and sexist attitudes of participants, as well as attempts to correlate high levels of rape myth acceptance (RMA) with overall violent gameplay. This work emerges from the larger, highly controversial body of work on violence in games, which has sought for several decades to establish a causal link between violent gameplay and proclivities towards real-world violence (Markey and Ferguson 2017). Almost none of this work has been conducted from a research perspective situated inside the field of game studies – most is conducted by social scientists. Although earlier research examined sexual objectification and representation, a 2008 study was the first to engage specifically with the issue of sexual violence in games (Dill et al. 2008). They had participants view slideshows containing images of objectified women in games, then measured their level of endorsement for sexual harassment and rape-supportive attitudes. There are major methodological flaws with this study: viewing a PowerPoint slide of game characters eliminates the interactive nature of games completely, and therefore any narrative or mechanical interactions that would normally mediate engagement with these characters.

Subsequent research, such as the work of Beck et al. (2012), which examined whether engagement with *GTA IV* (2008) increased the rape myth acceptance scores of male-

identified participants, has likewise struggled with methodological design. This study had participants watch a video of someone else playing an emergent mechanic of *GTA IV* in which the protagonist hires a sex worker, then after receiving sexual services kills her and gets their money back (often described disparagingly as the *hooker cheat*). The study's authors argued that their results indicated an increase in rape myth acceptance scores in men but did not find a correlation between overall hours spent playing "violent video games" (Beck et al. 2012, 3020) and negative attitudes towards women. This research too suffered design flaws, as yet again, it prevented participants from playing the game, and used an unnamed "baseball game" (Beck et al. 2012, 3023) as a control, a game which certainly differed from *GTA IV* in almost all narrative and ludic respects. In a more recent study, the same authors had participants actually play one of three *GTA* games (*Grand Theft Auto III* 2001, *Grand Theft Auto IV* 2008, *Grand Theft Auto V* 2013) after watching a confederate play a portion of the game that includes objectification and violence against women. In this study, none of the participants chose to replicate the violence against women and the experimental group showed a decrease in rape myth acceptance that grew over subsequent measurements (Beck and Rose 2018). The difference in findings between the first and second studies by these authors suggests that actual engagement with games produces far more complex player responses than static engagement with individual game assets.

One of the most significant shortcomings of effect studies is their lack of concern for the nature of representations of sexual violence in games – although some of them may describe the plot through which the sexual violence occurs, none examine the other aspects of the game or the procedural arguments it may be making that complicate presentations of sexual violence, presenting any given game as a black box whose insides are not to be examined (Williams 2005). Likewise, attempts to

correlate sexist and pro-violence attitudes with overall gameplay longitudinally have met with mixed results (Breuer et al. 2015, Fox and Potocki 2016), and have struggled to establish a causal relationship. The fact that the study with the strongest methodological design to date (from a perspective that views interactivity as central to games) had results that ran counter to their hypothesis (Beck and Rose 2018) suggests that the research on RMA and games to date has barely scratched the surface of what is actually happening with players when they engage with representations of sexual violence in games.

The battle lines between effect studies on games and game studies as a discipline have already been drawn, finding their roots in the larger moral panic about violence in games that arose with *Death Race* (1976) (Kocurek 2012) but reaching a fevered pitch following the 1999 massacre in Columbine, Colorado (Markey and Ferguson 2017). At the heart of the debate is a question about games as an object of study. For most effect study researchers, games are a media object like any other, and their impacts are likely the result of extended and repeated exposure to simulations of violent acts (see for example Anderson and Dill 2000). The general position of game studies is that the affordances and interactivity of games add an interpretive layer to the player experience (Gee 2007) and that players are not simply passive objects in the gaming environment – they are moral agents capable of making nuanced judgments about their actions in the game world (Sicart 2009). This disciplinary impasse has become entrenched in game studies despite recognition in the earlier development of the field that it would create a problematic *siloing* of methodologies (Williams 2005). Although resolving the tensions and divergences that have emerged through a half century of negotiation about the significance of human interactions with media is beyond the scope of this research, the de facto assumption that empirical research on the behavioural consequences of gameplay and in-depth

exploration of the interpretive aspects of games are irreconcilable need not preclude the possibilities of fusing the two. As Williams insightfully identified over fifteen years ago, context and generalizability are not inherently incompatible concepts (2005).

A possible bridge across this disciplinary divide is offered by the growing body of literature on serious games for sexual violence prevention. Serious game design is, by nature, highly interdisciplinary, requiring collaboration between game designers and subject area experts (Squire 2011). In the context of sexual violence prevention, this leads to sociologists, media scholars, violence prevention advocates, and survivors aligning their perspectives on games and adding to the equation the huge range of interpretive possibilities opened by the affordances of games. To date, a small handful of preliminary research studies have examined the violence prevention capacities of games, typically as part of the evaluation process of bespoke games designed specifically for this purpose. One of the first studies to do so designed a game, *Campus Craft* (ca. 2015), that used vicarious learning to introduce college students to the sociocultural determinants of sexual health, including sexual violence (Jozkowski and Ekbia 2015). Although the study's authors approached the topic of sexual violence in a game with the understanding that games could contribute to improved attitudes towards sexual violence, their published research unfortunately provides little insight into the role of interpretation, or how their game design practices adapted to the subject matter. In another study, the organizers behind Jennifer Ann's Group (a non-profit organization that funds the development of games about teen dating violence) examined the efficacy of several of their games in improving attitudes towards dating violence, but the extremely quantitative approach of their research yields no insights into why or how the games may have driven value change (Crecente and Jacobs 2017).

The current gold standard in combining effect studies with an understanding of the affective capacity of games about sexual violence is a pair of studies that first developed and evaluated the efficacy of bystander intervention games, then attempted to replicate their results (Potter et al. 2019, Potter et al. 2021). Their projects drew on established bystander intervention training literature for subject content, selected game design strategies that paralleled their desired behavioural outcomes, and drew on the theory of social self-identification to create interventions that effectively blended the tenets of violence prevention work with the principles of good game design. Mary Flanagan and the Tiltfactor Laboratory were collaborators on this project, and the values-infused methodology of Values at Play (Flanagan and Nissenbaum 2014), combined with an empirical analysis of the game's efficacy, contributed to a well-designed study that assessed both narrative engagements, and behavioural change. Their comparison of the efficacy of two different game types, one *trivia-based* and one *adventure* game, found that the adventure game was most effective longitudinally (although only with women), opening an important avenue of inquiry into what aspects of a game's design and mechanics enable value change.

The Intervention: *Decisions that Matter*[i]

This research study aimed to explore the efficacy of a pro-social sexual violence prevention game in driving value change in its intended audience. After a review of the publicly accessible sexual violence prevention games, *Decisions That Matter* (2015) was selected as a ludic intervention that was tailored to the study's target population (North American university students), drew on existing best practices in bystander intervention education, and offered unique game mechanics for analysis. *Decisions That Matter* (2015) (hereafter, *DTM*) was developed by students in Carnegie Mellon University's *Morality Play* program, a joint program course offered by the

Department of Philosophy and the Entertainment Technology Centre, and was built in consultation with the campus department for sexual violence prevention. *DTM* is an interactive graphic novel, allowing players to click on different dialogue options and a small number of objects (such as a cell phone) in static, comic-book-style panels. Delivered in a first-person perspective, the story follows a group of college students throughout their day on campus and at a house party in the evening. There are four scenes in the game that gradually escalate along the sexual violence continuum. In each, the target of the sexual aggression provides their perspective to the player, in some cases adding nuance to how different women prefer to deal with situations like street harassment. The central plot-line of the game concerns a burgeoning romance between classmates Luke and Natalie, which culminates in a house party scene where Luke tries to get Natalie drunk and coerce her into sex, a scenario that the player can avert by successfully employing bystander intervention techniques.

One of the most significant shortcomings in existing studies of portrayals of sexual violence in games, and in the analysis of serious/educational games more generally, is a tendency to avoid in-depth engagement with the procedural and representational details of the game under study, beyond those that are aligned explicitly with planned learning objectives (for example, Bergeron 2006). Critical game analysis frameworks like *Values at Play* (Flanagan and Nissenbaum 2014) identify the importance of examining the elements of games along the axes of both player perceptions and designer understandings to uncover the ways that games operationalize values, and the potential gaps between the meaning intended by developers and what is extracted by players. Part of this study involved email communication with one of the developers of *DTM* regarding the design process and decisions made by her team. Insight into player interpretation was gathered through survey questions on the post-test, whose design and implementation are discussed

below. In the interest of engaging critically with the effective and potentially ineffective elements of *DTM*, I believe some examination of the narrative rhetorics of the game is warranted.

The learning environment of *DTM* is constructivist in nature, providing the opportunity to learn through success and failure, multiple possible outcomes, and feedback that learners can use to adjust their understanding (Klopfer 2008). Players are given feedback on their choices via the non-player characters (NPCs) in the game, which often emphasizes that there is more than one way to intervene in sexual violence. In a street harassment scene, two NPCs are targeted by the catcaller. Natalie, a white woman, expresses that she prefers someone to intervene directly in the harassment, while Maria, who is Black, believes that engaging in direct confrontation only makes incidents of harassment worse. While in my personal communications with the developers they did not indicate that they deliberately created this racial contrast, Natalie and Maria's different responses align with Black feminist arguments about the strong pressure on Black women to be silent about their experiences of sexual violence (Crenshaw 1991, Fawaz 2018). There are several instances throughout the game where arguments about the experience of sexual violence, in particular sexual violence perpetrated by a romantic partner, are alluded to through characters' responses to the player's actions. However, the lack of explicit information about these topics leaves much of the nuance up to the interpretive capacity of the player. There are several acts along the sexual violence continuum that occur in the game but go entirely unchecked. For example, when Natalie arrives at the party, several men comment on her appearance and encourage Luke to *get some*, explicitly positioning Luke as the rightful pursuer of Natalie's body and sex. While this dialogue is likely included to set the scene and demonstrate the pervasiveness of rape culture on college campuses, these characters never receive

any negative pushback, and the women in the game often giddily go along with the group's encouragement of Luke to aggressively pursue Natalie. This opens space for interpretive ambiguity, where players might see this dialogue as exemplary of rape culture – or might simply read it as a normalized part of dating and sex among college students. One of the goals of this research was to determine how effectively players were able to interpret these messages, especially if they did not have strong foundational knowledge about sexual violence.

In the final scene of the game, after a sexual assault has either occurred or been averted by the player's actions, the animated characters transform into the actors used to model them and deliver a final monologue to the camera. The transition from the rotoscoped characters to their human counterparts is a powerful one, wherein Luke and Natalie cease to be *non-player* characters and are revealed as real human agents. The monologues extend *DTM* to be something slightly more than a game – it is as though the characters have come to life and are speaking directly to the player, breaking the fourth wall and emphasizing the effect of the player's actions on their lives. To the extent that the magic circle existed in *DTM* before the monologues, it is broken by the NPCs reaching out from the screen, enacting a shift between different frames of the game and pushing the story, and its consequences, out into the real world (Consalvo 2009). The monologues are also the only place in the game where players receive unambiguous feedback on what has happened, and Natalie's monologue in the failed ending is the only way that players could be certain that a sexual assault occurred after the party. The two different sets of monologues not only change the way the scenario ends, they likely change the interpretation of the game's events for players. If the assault is prevented, Luke confesses that he was planning to coerce Natalie into having sex with him and acknowledges that he knows this behaviour is wrong. If the assault takes place he shows no such remorse and feels

totally justified in his actions. The intent of the developers may have been to demonstrate the powerful effect peer interventions can have in sexual violence, with the player's intervention forcing Luke to reflect on his choices, but it also creates two different versions of Luke: one a predator blissfully ignorant of the ramifications of his actions, and the other a young man struggling with pressures of toxic masculinity. The player's interpretation of Luke's motives and by extension the motives of perpetrators of sexual violence in general may be influenced by which Luke they encounter, even though the player's intervention is the only diegetic difference between the two outcomes. The monologues add an explanatory element to the game that is not clearly elaborated elsewhere, and their mixed-media format creates an affective interface between the game and the player (Anable 2018). In the interest of examining the role that the video monologues played in interpretation, the participants in this study were split into two groups, one which played the full game including monologues, and one that stopped play just prior to the monologues. The monologues add two elements to the game: the direct, emotional connection between the player and the characters, and the explicit information about sexual violence that is otherwise absent.

Although *DTM* as a whole engages the concept of the continuum of sexual violence (Kelly 1987), some of the violence that occurs in the final scenario is minimized if the assault does not occur. While dancing at the party, Luke can be seen kissing Natalie and putting his hand up her dress as she visibly pulls away, but if the post-party assault is prevented, both characters act as though no sexual violence has occurred at all. In many jurisdictions including Canada (Women's Legal and Action Fund 2014) and the United States (Department of Justice 2012), unwanted sexual touching and kissing fall under the legal definitions of sexual assault. In the game's framing of sexual violence, these actions only take on real significance as precursors to an

assault. Otherwise, they are treated as simply warning signs that things were getting out of hand, and not an assault in their own right. To explore how players might interpret these actions, all groups of participants were asked whether sexual violence took place in their playthrough of the game.

Some of the limitations of *DTM* as an anti-violence education tool reflect the heterosexist focus of North American violence prevention movements (Patterson 2016). The game's developers chose to focus on *male-on-female peer violence*, citing its heightened prevalence on college campuses (Fawaz 2018). While a single media object cannot be expected to represent the full range of assault experiences, the narrative of sexual violence constructed by the game – which is entirely performed by straight men against straight women – reinforces the hermeneutical lacuna which writes non-heterosexual experiences of violence out of existence (Jenkins 2017). The mainstream violence prevention movement has focused on cisgender men's violence against cisgender women, largely to the exclusion of other forms of violence, for the last forty years (Patterson 2016). Implicit in this approach is the idea that other forms of violence can be addressed once the crisis of men's violence is solved, as if this is a tangible line to be crossed (Cahill 2001). Not only are the violence experiences of marginalized people just as important as those of *traditional* victims, but they are also exacerbated by the conditions of marginalization. The values of patriarchy and toxic masculinity inform all types of violence, and must be tackled as a cohesive whole, not just as they apply to a single group of people. If, as Adrienne Shaw argues, queer representation in games only occurs *when it matters* (2014, 223), we may be waiting a very long time for the mainstream movement to develop violence prevention games that reference anything but cisgender men's violence against cisgender women.

Research Methodology

The empirical portion of the research was conducted with undergraduate students on the campus of a Western Canadian university. 101 students were recruited for participation in the study, with one participant's results discarded due to technical problems during their session. Participant recruitment was random but resulted in relatively well-distributed gender diversity, with 54 women, 44 men, and two non-binary participants. Participants ranged in age from 18 to 36, with the majority (68%) between ages 19-24. The participants' self-reported ethnicities were primarily white and Asian, with three First Nations, Métis or Inuit; 48 white; 22 East and Southeast Asian; nine South Asian; two African; three Middle Eastern; five Latinx; and eight participants of mixed ancestry. Overall, 25% of participants identified as members of a sexual minority group, 58% identified as heterosexual, and 17% declined to provide their sexual orientation.

Participants were informed that they were enrolling in a study exploring *video games*, *hook-up culture*, *casual sex*, and *sexual violence*. This use of deception (approved by the institutional ethics board) was adopted to prevent participants from self-selecting in or out of the study based on ideological orientation towards sexual violence movements and to prevent participants from responding more pro-socially because of their perception of the goals of the research. They completed the research procedures in a single 30-40-minute session with the researcher. After reviewing the study information letter and having an opportunity to ask questions, participants were asked to complete the demographic and pre-test questionnaires on a provided computer. They were then directed to play through *DTM* in browser. Participants in Group 1 were told they would play the game through to the end, while participants in Group 2 were told the researcher would tell them when to stop playing the game. Both groups then completed the post-test questionnaire, were debriefed on the goals

of the research, and received an information sheet with resources for learning about and/or seeking support for sexual violence.

The demographic survey completed at the beginning of the study included information about gender, ethnicity, age, and sexual orientation. These demographic measures are quite common in rape myth acceptance research (Aosved and Long 2006) but often missing in effect study research on games, which problematically overlooks the differential impacts of personal background and experience on the interpretation of media (with the exception of gender, although much of the extant research treats it as a binary). The pre-test also included several questions about gamer identity and gameplay patterns. Participants were asked *Do you consider yourself a gamer*? with possible responses of *Yes*, *No*, and *Unsure*. All participants then indicated how frequently they played each of the following types of games: smartphone games, browser-based games, computer games, console games, and handheld games. They could indicate that they played each game type *daily*, *multiple times per week*, *once per week*, *multiple times per month*, *once per month*, or *less than once per month/not at all*. Game use was considered a potentially relevant variable considering both the complicated interplay between rape culture and gaming cultures, as well as the impact that familiarity with ludic conventions can have on player interpretation of in-game actions – part of what Miguel Sicart refers to as a player's *ludic phronesis* (2009).

The remaining questions on the pre-test consisted of the updated Illinois Rape Myth Acceptance Scale, or IRMA (McMahon and Farmer 2011), supplemented by filler questions about hook-up culture and casual sex. Rape myths are commonly held beliefs about sexual violence that tend to blame survivors and exonerate perpetrators; rape myth acceptance is a frequently used measure of an individual's

level of agreement with these statements and by extension, their level of rejection, or complacency towards rape culture. While there is no room here to elaborate on the numerous problems embedded in the IRMA, suffice to say that the instrument reflects many of the universalizing assumptions characteristic of *white feminism*, and results derived from it should be read with the awareness that it is a tool developed around a white, heterosexist concept of what constitute the primary misconceptions of rape culture. These problems notwithstanding, the IRMA remains the most broadly used rape myth questionnaire in effect studies, especially on games, and was employed in this research to permit some comparison with the existing body of research (for example, Beck and Rose 2018).

The final questions added to the post-test asked participants to interpret the events of the game. The first asked: *Did a sexual interaction occur between Luke and Natalie in your game?* This question evaluated how the player viewed the events preceding the assault, regardless of outcome. The second question *Was the interaction a sexual assault?* explored participants' understanding of what defines sexual assault. As discussed, per Canadian and American law, a sexual assault occurs in the game prior to the possible off-screen assault, but it was unclear whether participants' operative definitions of sexual assault would include actions beyond penetrative rape. This question also examined whether the participants who viewed the monologues had a different interpretation of the game than those who did not.

Following data collection and cleaning, the participant responses were analysed using a statistical software package and examined for points of significant change or intergroup variability. Given the focus of this paper on the methodological approach of the research, I touch only briefly on the statistical results of the study, which will be followed by an exploration of the findings and perhaps more critically, what they

demonstrate about the efficacy of blending interpretive and effect study research methodologies.[ii]

For the purposes of statistical analysis, the Likert-scale responses to the IRMA items were converted into numbers from 1-5. One of the challenges of using the IRMA is the tendency for results to be highly skewed to the lower endorsement of myths end of the scale, which results in a non-normal distribution of values (Gerger et al. 2007). On an individual level, Likert scale responses are challenging to interpret because they are discrete and ordinal in nature, with no clear indicator of what the difference between two points on the scale means – just how much more endorsement is a 3 than a 4? However, by aggregating the sample together, we gain some insight into general response trends across groups of participants. Outliers were retained in the data as they give interesting insights into how people with exceptionally high levels of rape myth acceptance received the intervention. Due to the nature of the data, I did not conduct regressions, instead calculating a 95% confidence interval for the mean of each item in the IRMA. In lieu of using p values to determine significance, changes in mean that fell outside the confidence interval are considered statistically significant. The structure of the revised IRMA is such that low numbers represent a high level of rape myth acceptance or RMA (for example, 1 = Strongly Agree), and vice-versa. This can be somewhat confusing in discussion, as an increase in RMA is a decrease in numerical score, and I will differentiate the two throughout this discussion as clearly as possible. As research has consistently demonstrated that gender is the most salient contributing demographic factor to levels of rape myth acceptance (Suarez and Gadalla 2010), gender has been adopted here as the primary point of analysis. While participants self-identified into three gender groups (non-binary, women, and men), the number of non-binary participants (n=2) was too small for statistical analysis. Thus, when gender is referenced in the following statistical

tests, only women's (n=54) and men's (n=44) responses are analysed. When participants are not being grouped by gender, the non-binary participants are included.

Pre-test Results

Meta-analysis demonstrates that IRMA data are not typically normally distributed (Gerger et al. 2007), which was consistent in this dataset. The pre-test mean results were negatively skewed (-.891), with the vast majority of respondents averaging a response of 3.00 or higher. A few outliers with extremely high levels of rape myth acceptance clustered towards the bottom end of the scale. Although participants were randomly assigned to either Study Group 1 (Full Game) or Study Group 2 (Partial Game), the two groups had significantly different pre-test results on many items, sometimes varying from each other by as much as 0.40 on an individual item, while being nearly identical on others. There does not seem to be a consistent demographic or gameplay characteristic that differentiates the two groups; barring an unknown confounding variable, this is the result of random chance. As a result of the difference, it is not particularly useful to compare the relative levels of the post-test results between Group 1 and Group 2, since they often begin from highly divergent pre-test points. Rather, a comparison of the degree of change between pre- and post-test results in each group will be more indicative of actual change after playing *DTM*.

Participants overall had very low levels of pre-test rape myth acceptance, with a mean score of 4.21 out of 5. The subscales of myths addressing the idea that men sometimes commit rape *by accident* and the myths suggesting that women often lie about experiencing rape were the most highly endorsed, with respective means of

4.00 and 4.03. The subscale *It Wasn't Really Rape* was most consistently rejected by participants, with a mean of 4.75 overall. One of the most noteworthy categories that had a significant effect on pre-test levels of RMA was self-identification as a gamer. People who identified themselves as *gamers* (n=57) had a mean RMA of 4.13, as compared to 4.27 among *non-gamers* (n=34), and 4.47 (n=9) among those *unsure* about their *gamer identity*. The impact of this identity category on RMA, its relationship to actual gameplay habits, and the potential implications of these findings will be discussed below.

Post-test Results

There was considerable variability between the pre-test and post-test responses for most of the IRMA items queried, although only a few items demonstrated sufficient change to be statistically significant. Four items saw statistically significant changes across the intervention in the general study population, with all four of these changes occurring in the Full Game group (Table 1). Similar but smaller changes also occurred in the Partial Game group for each item, resulting in statistically significant changes for all participants overall on the same four items.

	Everyone, Full Game Group - Change in Mean	Everyone, Both Groups - Change in Mean
If a girl acts like a slut, eventually she is going to get into trouble	**+0.44**	**+0.27**
When girls are raped, it's often because the way they said "no" was unclear	**-0.28**	**-0.25**
If a girl initiates kissing or hooking up, she should not be surprised if a guy assumes she wants to have sex	**+0.42**	**+0.33**
If both people are drunk, it can't be rape.	**+0.28**	**+0.21**

Table 1: Statistically significant changes in mean in the general study population

Some research has demonstrated that men at *high risk* for using sexually coercive behaviours are less likely to show a change in RMA across an educational intervention than men who are *low risk* for sexually coercive behaviour (Elias-Lambert and Black 2016), or may have a reaction that runs counter to the desired effect of the intervention (Malamuth, Huppin and Linz 2018). These findings indicate that there may be a difference in how sexual violence prevention interventions are received based on the existing value systems of participants. To explore this possibility, I separated participants into three additional groups for analysis. All participants with an overall pre-test mean more than one standard deviation below the sample mean (SD=.6, mean <3.61) were tested separately as the *high myth* acceptance group (n=19). All participants with a pre-test mean more than one standard deviation above the sample mean (SD=.6, mean >4.81) were tested in the *low myth* acceptance group (n=18). The remaining participants, whose mean responses fell within one standard deviation of the sample mean, were tested as the *medium myth* acceptance group (n=63). Dividing the participants in this way proved extremely informative – participants in the *high RMA acceptance* group showed considerably more statistically significant value change in both directions than participants in either of the other two groups.

Of all high RMA participants, men who played the full game saw the greatest decrease in their overall RMA levels, with mild improvement on all subscales and overall. There was some fluctuation among participants in the partial game group, but a net minor increase in RMA. The item which elicited the most significant value change was *When girls are raped, it's often because the way they said* no *was unclear* – all high RMA participants were significantly more inclined to agree with this statement after playing *DTM*, with some demographic/study groups moving a full point down the scale. This response may be an example of reactance, which occurs when "exposure to descriptive social norms regarding the prevalence of a societal problem can actually increase conformity or adherence to those norms" (Kaufman and Flanagan 2015, 2). In essence, those with anti-social attitudes about sexual violence might experience a stronger recoil effect from encountering information that doesn't fit with their existing views, leading to a value change in the opposite direction of what is desired. This *boomerang effect* has been identified in the violence prevention literature as a special concern with the group of *high-risk men* who are more likely to perpetrate sexual violence (Malamuth, Huppin and Linz 2018). Some of the proposed solutions to reactance include targeting the underlying conditions of rape supportive attitudes, such as endorsement of patriarchal values, increasing empathy for victims, and dismantling rape myths (O'Donohue, Lloyd and Newlands 2016). Although *DTM* does offer a lot of space for player interpretation and nuance (for example, never naming what happens between the main characters as sexual violence), it is obvious that the game does not condone harassing behaviour, which may have created a reactance-related effect in certain players. Of the 19 participants in the high RMA group, a total of 10 actually increased their level of rape myth acceptance over the intervention. This corresponds to findings in the literature that interventions aimed at the general population may not be addressing the aspects of

rape-supportive attitudes that need to be tackled for high-risk men; some scholars suggest that interventions for the general population need to instead be tailored to this high-risk group to increase the chances of having the desired impact (Malamuth, Huppin and Linz 2018). Future games for sexual violence prevention should carefully consider what audience and/or context they are intended for, and as Potter et al. (2021) suggest, until the longitudinal impacts of violence prevention games are better understood, they may be best employed as part of a suite of interventions, rather than a stand-alone tool.

Much discussion has taken place in game studies and the broader gaming community about the exclusionary nature of mainstream gamer culture and the way that so-called power gamers conduct gatekeeping around who is allowed to identify as a gamer. Many people who play games have expressed a desire to distance themselves from that label when the misogyny of some gamers is seen as emblematic of the group as a whole (Kowert 2014, Phillips 2020). I asked participants about their actual gameplay habits in the interest of exploring the relationship between gamer identity and actual practice. Participants answered how frequently they played games on a number of different platforms: smartphones, portable gaming devices, consoles, computers, and internet browsers. The results were aggregated into four levels of frequency, which upon closer examination revealed many participants who played games very frequently but did not self-identify as gamers.

In the pre-test results self-identification as a *gamer* was a major predictor of high levels of rape myth acceptance. *Gamers* had significantly higher levels of rape myth acceptance than either *non-gamers* or those who were not sure about their gamer identity, and those who were unsure had significantly lower levels of RMA than the

other two groups on most subscales and overall. This finding is consistent with other research that also examined gamer identity and RMA (Nunez et al. 2016, Toledo et al. 2015). There did not seem to be a significant difference in the impact of the intervention between different gamer identity categories, with no group demonstrating a statistically significant change at the subscale or full-scale level. The *unsure* group saw very minor increases in their RMA on two subscales (*She Asked for It and It Wasn't Really Rape*) and their overall results, but their post-test results were still higher than those of the gamer group.

Interpreting Narrative

At the end of the post-test survey, participants answered whether they thought that a sexual interaction occurred in the game, and whether the interaction was a sexual assault. 76% of participants indicated that a sexual interaction had occurred, 13% said no sexual interaction had occurred, and 11% were unsure. They were much less certain about whether the interaction was an assault, with 43% answering yes, 28% no, and 29% uncertain. The events of the party in *DTM* are by Canadian legal definition technically a sexual assault regardless of the final outcome of the game, so all players encountered at least one if not two sexual assaults in the game. With less than half of the participants identifying any incidents of sexual violence in the game, it seems that their low levels of rape myth endorsement were not necessarily due to high levels of knowledge about sexual violence. This could mean that their general sense of sexual violence was pro-social, even if they were not specifically educated on the topic or, as critiques of the IRMA have identified, it could be that the items on the scale have become outdated and no longer correspond with modern myths about sexual violence (McMahon and Farmer 2011).

Although Natalie's monologue does not explicitly state that she was assaulted, her line, *I didn't want sex, you know? I dunno, maybe it was my fault* makes it clear that a sexual interaction of some type took place. This line, in combination with Natalie's change of heart from actively flirting with Luke early in the narrative, to resisting his advances in the final scene, may have contributed to the most significant failure of *DTM* in conveying its intended meanings to players – the near-universal increase of acceptance for the myth *When girls are raped, it's often because the way they said* no *was unclear*. While the intention of the game's designers was to underline the ongoing nature of consent, it seems this nuance was lost on most players, who seemed to interpret Natalie's changing signals as an acceptable excuse for Luke's behaviour. The fact that players and developers had different understandings of the events of the game points to the importance of intentional and iterative design processes, ensuring that the values and intended meanings of the game are being accurately conveyed to the player (Flanagan and Nissenbaum 2014).

Gamer Identity and Rape Myth Acceptance

The final set of findings I would like to address concerns *gamer* self-identification. As discussed above, self-identified gamers endorsed rape myths at significantly higher levels than *non-gamers* and those unsure about their *gamer* identity. For feminist game scholars, this finding is likely unsurprising – a great deal of digital ink has been spilled over the misogynist nature of mainstream gaming culture and the way that sexual violence is weaponized in gamer spaces, as exemplified by the #GamerGate movement (Gray et al. 2018). The term *gamer* itself is a contested one, which is often rejected by those who do not want to be linked to a toxic subculture that has become associated with the American alt-right (Green 2017) while other groups fight to reclaim it (Kowert 2014).

Some research has identified a relationship between high RMA levels and *gamer self*-identification in a very specific population (Latino/a high school students, see Nunez et al. 2016, Toledo et al. 2015), but RMA has not been extensively explored in gamers in general. Several researchers have unsuccessfully attempted to establish a causal relationship between negative attitudes towards women and video game use (for example, Dill-Shackleford 2009), an effort that has in part been limited by the methodological shortcomings described above but also, I would contend, by its attempt to locate the source of sexist beliefs in games themselves, rather than in the complex media ecology in which games operate. From a game scholarship and violence prevention perspective, there may be much more to learn from exploring the ways that so-called gamer culture may circulate certain beliefs about sexual violence. The most promising lead for future research from these results may be the low rape myth acceptance scores of those unsure about their gamer identity – recall that these scores were in fact lower than both the *gamers* and the *non-gamers*, and that participants in this group played games at a rate not that far removed from the gamers. While this is a very small sample group and far more investigation is needed, what these findings suggest is that the unsure group are gamers in practice, but the label *gamer*, and all the baggage that comes with it is off-putting to them. People with strongly prosocial beliefs about sexual violence may struggle to identify with the mainstream gaming community specifically because of their perception of it as misogynist, or they may have had negative experiences that have caused them to disavow this label (Kuss et al. 2022). Further exploration of these findings might allow us to abandon the proposition of many violence prevention scholars examining games that violence in games is the source of pro-violence beliefs, thus far unsupported (Beck and Rose 2018), and instead turn to examining the ways that pro-violence norms *are circulated* in gamer culture, and in turn, society at large.

Limitations

As a preliminary study with limited control conditions, the goal of this research was not to draw longitudinal causational links between playing *DTM* and rape myth acceptance levels, but rather to explore whether the tool demonstrated any efficacy in causing participants to think about sexual violence differently, and to blend interpretive questions with quantitative responses. Anecdotally, many participants indicated that playing the game and then returning to the IRMA questionnaire made them reconsider the items on the questionnaire in a different light, but as the survey findings indicated, this reflection did not always have a prosocial effect.

Another limitation concerns the use of *DTM*, a game about bystander intervention, for research on rape myth acceptance. Although deconstructing rape myths is a routine component of violence prevention education and a necessary part of educating people to act as engaged bystanders, this game was not designed with the explicit intention of reducing rape myth acceptance. The stated goal of the game's developers was to increase players' confidence in responding to situations of sexual violence: "we definitely wanted players to understand and internalize the fact that their actions and decisions very much make a difference" (Fawaz 2018). Given the relatively small number of published sexual violence prevention games, *DTM* seemed to be the best fit in terms of clearly delineated learning outcomes, a specific target audience, and intentional design informed by violence prevention theory and practice – but it is still not a game designed to reduce rape myth acceptance. The findings of this research should not be considered an evaluation of *DTM*'s effectiveness as a bystander intervention tool, but rather an exploration of how players interpret and understand sexual violence in games when it is presented in an informed and

compassionate way, and a reflection on how their pre-existing beliefs may interact with information presented in media.

Conclusions

Analysis of the participants' responses revealed that the game was mildly effective in improving the attitudes of players in general towards sexual violence, but that the ambiguous nature of the game's messaging also led to moderate *increases* in rape myth acceptance in some cases. Participants with high initial levels of rape myth acceptance showed more proclivity to change than other participants, but a subgroup of these was highly resistant to prosocial interventions and demonstrated reactance to the intervention. Examination of the responses to survey questions about gamer identity and gameplay habits also revealed that participants who self-identified as gamers had higher levels of rape myth acceptance than other participants. These findings yield some initial insights into the potential applicability of games for violence prevention, but also highlight the need for precise and well-considered game design practices. This is an essential component of the Values at Play game design heuristic, where the *verification* stage serves as a form of quality control to ensure that their intended meanings and values are being conveyed (Flanagan and Nissenbaum 2014). In any context where serious games deal with sensitive and contested subject matter, the imperative for game designers to conduct QA specifically focused on meaning and interpretation is especially strong.

Findings regarding the relationship between gameplay habits, gamer identity, and rape myth acceptance suggest a need for further research into the interplay between gamer culture and attitudes towards sexual violence. A small body of existing research has examined this issue and likewise found that it was self-identifying as a

gamer, not gaming itself, that predicted higher levels of RMA (Nunez et al. 2016). The role that misogyny plays in mainstream gamer culture has been critiqued by academics and journalists alike, and the violently exclusionary gate-keeping that many (primarily men) gamers have practiced for decades seems to be constructing a group of people who play and enjoy games, but do not consider themselves gamers (although other factors are certainly at play, see Kuss et al. 2022). Given the well-documented relationship between misogynist gamers and the Alt-Right (CBC 2017) and demonstrated co-occurrence between intolerant beliefs and rape myth acceptance (Aosved and Long 2006), there is a need for extensive investigation of the way that multiple forms of intolerance and the social media bubble effect are promoting rape culture in gamer communities. This distinction has been missing from much of the social science research about violence in games that has sought to establish a connection between gameplay habits and rape myth acceptance or sexist beliefs, without consideration for how the culture surrounding the games may be having a more significant effect than the games themselves (although these are to some extent co-constitutive). The gaps in the findings also outline future research directions into tools that are specifically adapted for the study of games – an initial foray into this is the Virtual Violence Against Women Scale, which makes some concessions to context but fails to differentiate between gendered violence and violence against women characters (Borgman et al. 2019). It is critically important that considerations of context and critical game analysis are inserted into research on RMA and games, where scholars continue to try to draw broad-stroke conclusions about all violent games and all gamers.

The most promising solution to this impasse is that which Williams called for in 2005 – interdisciplinarity. There are hurdles of both method and mindset when it comes to mixing strongly quantitative, empirical approaches to game studies with a more

narrative and interpretation-driven understanding of games in context, but as the history of game studies has shown, these distinctions are often more superficial than they seem at first glance (Frasca 2003). This research used only two interpretive questions, which were easily integrated into the survey format of the effect study questionnaire, but the results demonstrated that there was a significant gap in understanding of the events of the game that influenced the outcomes of the questionnaire. More extensive integration of focus-group or interview-style debriefing and discussion into this type of research would likely reveal not only a wealth of information about how to effectively influence our target populations with game-based interventions, but also help us identify what gaps in our research are being left behind when we use pre-formulated tools like the IRMA.

Thus far, English-language research on video games and RMA has been primarily conducted in Canada and the United States, but studies of rape myths across cultures demonstrate that rape myths are not a universal set of ideas (Xue et al. 2016), and much more investigation of the potential roles of games in different cultural contexts is warranted. As Potter et al. (2019) identified in their collaborative design process, in which the games' target population of university students participated in creating the interventions, issues like sexual violence and rape myths are highly contextual and need to be addressed as such.

After decades of rhetorical battles over violence in games, which were re-invigorated by US President Donald Trump's implication of games as a cause for high levels of gun violence (Disis 2018), game scholars are understandably tired of engaging in circular arguments about violence causality and games. The relationship between sexual violence, misogyny, and games is even more complex, but feminist game scholars have a vested interest in untangling these relationships. Studies such as

Shaw's qualitative investigation of representation and games (2014) have found that gamers have complicated and varied relationships to games and game content. Likewise, rape myths have differential effects on individuals based on their past experiences and belief systems (Peterson and Muehlenhard 2006). Future research on sexual violence in games must account for these differences. It is my hope that the present study and the increasing prominence of games as tools for sexual violence prevention will spur further much needed research in this area, and that the fusion of effect study approaches with the interpretive elements of gameplay can lead to a more nuanced understanding of the impacts of games in the real world.

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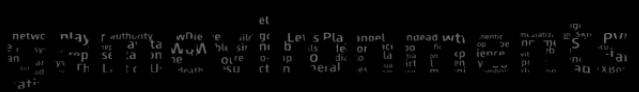

[i] The author would like to thank the developers of *Decisions that Matter* for their efforts in creating an accessible violence prevention game, and their willingness to share insights into their design process. I understand that their game was produced in the context of a term project and many of the best practices proposed here were outside their scope. I believe their intervention has produced a great learning opportunity for the field at large, and any critiques presented here are only in the interest of future, better-resourced endeavours, that can draw on their efforts.

[ii] For a more detailed elaboration of the statistical findings of the research, see Gordon (2018).