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Putting the “Gay” in Gamers: Increasing Identification with Homosexuals Through Video Games

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PUTTING THE “GAY” IN GAMERS: INCREASING IDENTIFICATION WITH
HOMOSEXUALS THROUGH VIDEO GAMES

by

Matthew Olah

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in partial fulfillment of the requirements for the degree of

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COLLEGE OF ARTS AND SCIENCES

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INCREASING IDENTIFICATION THROUGH VIDEO GAMES

CERTIFICATE OF APPROVAL

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INCREASING IDENTIFICATION THROUGH VIDEO GAMES

Abstract

Priming out-groups and taking the perspective of out-group members increases implicit and explicit identification with out-groups. Because the popularity of video games has increased dramatically over the past few decades and they have become an influential form of media, the current study investigated video games as another potential strategy to increase identification with and reduce prejudice against out-groups. Specifically, I investigated how manipulating the sexual orientation of the video game character participants used influenced implicit and explicit identification with homosexuals and implicit and explicit prejudice against homosexuals.

Additionally, I investigated whether implicit and explicit identification with homosexuals would mediate the impact of video games on prejudice. Though I recruited enough participants to detect a medium effect size (169 participants in the final analyses), pre-registered analyses (osf.io/ynaw7) indicated that the sexual orientation of a video game character did not influence identification with or prejudice against homosexuals. Exploratory analyses demonstrated that among participants that identified with the video game character and played as a Gay character had increased explicit identification with and reduced prejudice against homosexuals. The possibility that increasing the strength of the manipulation by having participants play the game for multiple sessions, customize characters, and incorporating storytelling into the game are discussed.

Putting the “Gay” in Gamers: Increasing Identification with Homosexuals Through Video Games

Video games are a popular form of media. Gamers, or those who play video games regularly, spend 25 to 40 hours playing each week (Griffiths, Davies, & Chappell, 2004; Smahel, Blinka, & Ledabyl, 2008). Those who are 18 years old spend about 22 hours a week playing games, and those in young adulthood to middle adulthood spend 31 hours a week playing games (Williams, Yee, & Caplan, 2008). The popularity of video games can be seen in media outlets such as Twitch.tv, which has over 100 million visitors each month and is dedicated to watching people play video games (<http://twitchadvertising.tv/audience/>). Also, cosplayers, or people who make costumes of their favorite fictional characters, attend video game conventions around the world dressed as their favorite characters. There are also video game tournaments with large cash prizes ranging in the millions and video games even air on some sports channels.

Video games have many positive effects (e.g., Gee, 2003). For example, an educational video game taught participants about cognitive biases such as the fundamental attribution error, confirmation bias, and bias blind spot (Shaw et al., 2016). Participants were less prone to making the fundamental attribution error and confirmation bias, but not bias blind spot, after playing an educational video game compared to watching a video containing the same information. Debates, however, over whether video games are related to aggressive behavior are still ongoing with many in favor of censoring violent video games (Anderson et al., 2008; Griffiths, 1999; Sherry, 2001). Although the video game-aggression link highlights a possible negative consequence of playing video games, I sought to investigate one potential positive effect of playing video games: increasing identification with and reducing prejudice against out-groups.

Identification and Prejudice

The self-concept can be defined as the collection of beliefs we hold about ourselves (Baumeister, 1999). The self-concept can be thought of as associative links from the self to traits, roles, and social categories (Greenwald & Farnham, 2000; Greenwald et al., 2002). Moreover, an individual's self-concept can include associative links to multiple categories, roles, and traits (Baumeister, 2010, pp. 145). Because the self-concept can be associated with multiple categories, increases in identification with an out-group can occur without decreasing identification with other groups. Throughout this paper, I refer to associative links from the self to social categories as identification (Phills, Kawakami, Krusemark, & Nguyen, 2017). I seek to investigate how identification with homosexuals might be influenced by playing as a Gay character in a video game.

Priming (Kawakami et al., 2012; Kawakami, Dovidio, & Dijksterhuis, 2003), perspective taking (Galinsky, Ku, & Wang, 2005; Galinsky & Moskowitz, 2000; Todd & Burgmer, 2013), approach behaviors (Phills, Kawakami, Tabi, Nadolny, & Inzlicht, 2011) and reading (Fong, Mullin, & Mar, 2015; Vezzali, Stathi, Giovannini, Capozza, & Trifiletti, 2015) have been shown to increase both explicit and implicit identification with social groups. For example, male participants had increased associations between the self and smoking concepts after watching a movie clip in which the character smoked (Dal Cin, Gibson, Zanna, Shumate, & Fong, 2007). Also, decisions to shoot a Black or White target were influenced by group identification (Kenworthy, Barden, Diamond, & del Carmen, 2011). That is, White participants trained to associate the self with Black people made fewer errors when deciding to shoot Black targets.

Some research suggests identification with a video game character may be related to regions of the brain associated with incorporating external items as part of our own bodily

identity (Ganesh, van Schie, de Lange, Thompson, & Wigboldus, 2011). When participants played a game from a third-person perspective (i.e., a camera that follows behind the character, as opposed to viewing the game through the character's eyes), the left angular gyrus, which is a brain region associated with self-identification, was activated. Ganesh and colleagues (2011) concluded that video game characters might be considered a part of their self as much as a close other (e.g., friend).

Prejudice is defined as negative evaluations towards a social group (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997) and increases in identification with an out-group have been related to decreases in prejudice against that group (e.g., Phills et al., 2011; Todd & Burgmer, 2013). For example, Phills and colleagues (2011) had non-Black participants repeatedly approach or avoid members of specific social categories. Seated in front of a computer and using a joystick, participants were instructed to pull the joystick towards themselves when presented with pictures of Black targets and to push the joystick away from themselves when presented with pictures of White targets. Participants instructed to move the joystick towards themselves when presented with a photograph of a Black target had increased identification with Black people and increased identification with Black people was related to decreased prejudice against Black people.

The importance of studying prejudice against homosexuals

The current study, to my knowledge, will be the first to use video games to attempt to increase identification with and decrease prejudice against homosexuals. Prejudice against homosexuals has a unique history compared to other social groups and has been more widely studied since the end of World War II (Chauncey, 1993; Copolov & Knowles, 2016; Freedman, 1987). Prejudice against homosexuals has shifted several times throughout the 20th and 21st

centuries. Viewing homosexuality as a sexual disorder (Fenichel & Rangell, 1995), and mental illness (Chapman & Reese, 1953) were prevalent during the first half of the 1900's, which then shifted to a view of homosexuality as a physical disease during the advent of Acquired Immune Deficiency Syndrome (AIDS) or the "Gay Plague" in the 1980s (Kozloski, 2010). A positive shift in support for homosexuals increased in the 1970's, decreased in the 1980's into the early 1990's (which parallels prejudice against homosexuals during the AIDS epidemic), and then increased once again in the late 1990's (Loftus, 2001), this can be partially accounted for by the death of older generations (Keleher & Smith, 2012). Although these shifts have occurred, prejudice against homosexuals remains (Herek, 2004; O'Connor, Ford, & Banos, 2017).

Because of this unique history, interventions targeting identification with homosexuals may need to be different from interventions targeting identification with racial groups. For example, Dermody, Jones, & Cumming (2013) investigated how perspective-taking may influence implicit and explicit prejudice against Gay men. Contrary to past research on perspective-taking with other groups (Galinsky et al., 2005; Galinsky & Moskowitz, 2000; Todd & Burgmer, 2013), taking the perspective of a Gay man did not reduce implicit or explicit prejudice against Gay men. I investigated the possibility that playing a video game as a Gay character may be a more intense form of perspective-taking because instead of imagining themselves in the shoes of a Gay man, participants will play a game in the body of a Gay man.

Media consumption can shift identification and reduce prejudice

According to a theoretical review, Cohen (2001) argued that consuming media may influence how we think of ourselves and others. Those who play video games tend to identify with the character they are playing even more so than those who merely watch a video game being played (Hefner, Klimmt, & Vorderer, 2007). Also, playing a particular role in a video

game can shift self-attributes to match the role (Klimmt, Hefner, Vorderer, Roth, & Blake, 2010). For example, those who played a first-person shooter game, in which the playable character is a soldier, associated military traits to the self; such as brave, patriotic, and loyal. Likewise, those who played a racing game associated the self with race car driver concepts; such as speed and car driver (Klimmt et al., 2010). In addition, past researchers investigated how playing as either a Black or White character in a violent video game influenced prejudice against Black people (Yang, Gibson, Lueke, Huesmann, & Bushman, 2014). Across two experiments, using two different video games, when the video game was violent, White participants that played as a Black character had more implicit and explicit prejudice against Black people compared to White participants that played as a White character. Similarly, participants were faster to associate violent stimuli with minority characters represented in video games (Burgess, Dill, Stermer, Burgess, & Brown, 2011).

Research suggests people may also identify with the characters in books they read. For example, in one study participants read passages from two popular series: *Harry Potter* and *Twilight* (Gabriel & Young, 2011). Those participants that read from *Harry Potter* associated “Wizard” traits with the self more strongly than traits associated with “Vampire” on an implicit association test (IAT). This pattern was reversed for those that read *Twilight* in that they identified more with “Vampire” concepts than “Wizard” concepts. Another study found reading *Harry Potter* was related to decreased prejudice against multiple outgroups (i.e., refugees, homosexuals, and the homeless) (Vezzali et al., 2015). Specifically, identifying with the main protagonists in *Harry Potter*, who have egalitarian values, was related to a reduction in prejudice versus identifying with the main antagonists.

Virtual reality environments have been used to reduce prejudice as well (Peck et al., 2013). Participants took a pre-test measuring implicit prejudice against Black people. Then in a virtual world they played as either a dark-skinned, light-skinned, or purple-skinned (control) avatar. Participants that played as a dark-skinned avatar had reduced implicit prejudice against Black people versus those who embodied the light-skin or purple-skinned avatars when post-test implicit measures were analyzed. In the current study, I plan to measure participants' identification with and prejudice against homosexuals. By measuring both identification and prejudice, this methodology will expand upon the knowledge provided by Peck and colleagues (2013) by lending insight into whether participants' identification mediates the relationship between playing as a Gay or Straight character and prejudice against homosexuals.

Overview

In the current study, I investigated a video game-based strategy to increase identification with and decrease prejudice against homosexuals. I predicted those who played a video game as a Gay character would have less prejudice against homosexuals as opposed to those who played a video game as a Straight or Sexuality Non-Disclosed character. I also hypothesized that those who played as a Gay character would have higher self-homosexual associations than those who played as a Straight or Sexuality Non-Disclosed character. Finally, I predicted that identification with homosexuals would mediate the relationship between video game character sexuality and prejudice against homosexuals. All hypotheses are pre-registered and accessible on the Open Science Framework (OSF; osf.io/ynaw7).

Method

Participants

Undergraduates were recruited from the University of North Florida (UNF) in exchange for partial course credit ($N = 189$). In accordance with pre-registration (osf.io/ynaw7) any participants that did not complete all implicit and explicit measures were excluded from analyses. Twenty participants did not complete all implicit and explicit measures and were therefore excluded from analyses leaving 169 participants (84% women, age range 18-58, median age = 20, 69.2% White, 12.4% Black, 5.9% Asian, 4.1% Hispanic, 3.6% Biracial, .6% Albanian, .6% Brazilian, .6% Latino, .6% Spanish, .6% Native American, .6% Filipino, 1.2% did not answer) in the final analyses. Also, in accordance with pre-registration, the goal of recruiting at least 160 participants was met. Of these participants, 10 (6.1%) have engaged or desired engagement in homosexual behavior, 45 (27.2%) have engaged or desired engagement in bisexual behavior, 110 (66.7%) have engaged or desired engagement in heterosexual behavior, and four did not share this information (See Table 1). Additionally, 118 (69.8%) participants never played the video game used in this experiment and 117 (69.2%) participants did not regularly play video games.

Materials

Character description. Participants were randomly assigned to one of three conditions (Gay, Straight, Sexuality Non-Disclosed) in which they read a description of their character.

Participants in the Gay condition were shown:

Today you will be playing as Steve. Steve is an amateur builder and he needs your help.

Steve's boyfriend was taken by a Creeper, the hostile creatures that roam the land. Help

Steve collect materials to build a weapon so he can save his boyfriend!

Participants in the Straight condition were shown:

Today you will be playing as Steve. Steve is an amateur builder and he needs your help. Steve's girlfriend was taken by a Creeper, the hostile creatures that roam the land. Help Steve collect materials to build a weapon so he can save his girlfriend!

Participants in the Sexuality Non-Disclosed condition were shown:

Today you will be playing as Steve. Steve is an amateur builder and he needs your help. Steve's friend was taken by a Creeper, the hostile creatures that roam the land. Help Steve collect materials to build a weapon so he can save his friend!

Minecraft. *Minecraft* is a popular game in which players can build structures, weapons, armor, and many other objects. Each new session of *Minecraft* is procedurally generated meaning that when a new save file is created the terrain of the game world is random. To avoid participants entering random games, a master save file was created and uploaded before each participant completed the study. This way, each participant began in the same spot within the game.

Game controls and task sheet. Each participant was given a game control list (see Appendix A) and an in-game task sheet (see Appendix B). The game control list informed participants which buttons on the keyboard and mouse correspond to performing an action in the game (e.g., "Space Bar" is jump). The in-game task sheet lists step-by-step instructions on how to build a weapon in the game. For example, step one instructs participants how to collect "Wood" from chopping down a tree that is nearby. Participants were instructed that completion of all in-game tasks was not necessary to continue with the experiment.

Identification implicit association test (Greenwald & Farnham, 2000). In this double-categorization task designed to assess implicit identification with homosexuals, participants used the "I" and "E" keys to categorize words and images. The categories for the first critical block

pairing were homosexual images with self-words (I, me, mine, self) and heterosexual images with other words (they, them, their, other). Participants used the “E” key to categorize homosexual/self stimuli and the “T” key to categorize heterosexual/other stimuli. The second critical block pairings were reversed (homosexual/other, heterosexual/self) such that participants used the “E” key to categorize homosexual/other stimuli and the “T” key to categorize heterosexual/self stimuli. Eight images (four heterosexual, four homosexual) were used for this IAT; for example, one image is a wedding cake topper with two grooms (see Appendix C). The reason there are unequal numbers of similar pictures is because heterosexual images were grouped together, and homosexual images were grouped together. Therefore, when these images are grouped together there are four heterosexual images and four homosexual images. Difference scores for critical blocks were calculated per Greenwald, Nosek, and Banaji’s (2003) recommendation such that higher scores represent higher identification with homosexuals.

Prejudice implicit association test. This double-categorization task designed to assess implicit prejudice against homosexuals presented participants with five blocks, two of which were critical. Participants used the “E” key to categorize homosexual images/words (Gay, homosexual) and positive words (wonderful, delightful, glorious, fantastic, superb, and magnificent). Similarly, participants used the “T” key to categorize heterosexual images/words (Straight, heterosexual) and negative words (pain, disgust, horrible, tragic, dreadful, and awful). For the second critical block, these pairings were reversed (heterosexual/positive, homosexual/negative). Difference scores were calculated according to Greenwald and colleagues’ (2003) recommendation. Higher scores are indicative of more prejudice against homosexuals. The same eight images (four heterosexual, four homosexual) presented in the

identification IAT were used for the prejudice IAT. The order of presentation for the IAT's was counterbalanced.

Inclusion of other-in-self. To assess explicit identification with homosexuals, participants completed a series of Inclusion of Other-in-Self scales (IOS; Aron, Aron, & Smollan, 1992). Each IOS scale presented participants with seven Venn-diagrams. One circle contained the word "self" and the second "other" and the circles increasingly overlapped as the scale increased. For example, in the first Venn-diagram, there was little overlap between the two circles, but in the seventh Venn-diagram the two circles almost completely overlapped. Participants were asked to "please use the Venn-diagrams below to indicate how close you feel to homosexuals/heterosexual/Steve." Difference scores were calculated between how participants explicitly identify with homosexuals and heterosexuals. Higher scores were indicative of more identification with homosexuals. Difference scores for Steve, however, were not calculated. Therefore, higher scores for Steve are indicative of higher identification with Steve.

Feeling thermometers. Feeling Thermometers (Haddock, Zanna, & Esses, 1993) were used to assess participants' explicit prejudice against homosexuals, heterosexuals, and their video game character Steve. This measure ranged from 0° (*very cold or unfavorable feeling*) to 100° (*very warm or favorable feeling*). Difference scores were calculated between ratings of how warm or cold participants feel towards homosexuals and heterosexuals. Higher scores represent more explicit prejudice against homosexuals. Again, difference scores for Steve were not calculated. Therefore, higher scores for Steve are indicative of more warm/favorable attitudes towards Steve.

Kinsey scale. To assess participants' sexual orientation, participants completed the Kinsey Scale (Kinsey, Pomeroy, Martin, & Sloan, 1948). Values ranged from 1 (*Exclusively heterosexual with no homosexual*) to 7 (*Exclusively homosexual with no heterosexual*). Any response in the two to six range is indicative of sexual behavior, either desired or actual, with both sexes.

Procedure

Participants were brought into the lab and seated in front of a computer. After participants' informed consent, the researcher told participants that they would be completing a tutorial on *Minecraft*. Participants were given the control list and had three minutes to get comfortable with the controls (see Appendix A). Once the three minutes were over, researchers switched participants' screens to read about their character Steve. Participants then read the Gay, Straight, or Sexuality Non-Disclosed character description. Once participants finished reading, the researcher handed each participant the in-game task sheet and switched their computer screens back over to *Minecraft* (see Appendix B). Participants were told they would have 10 minutes to complete the task. Additionally, they were told that if they did not complete all tasks by the time the 10 minutes were over that they would be allowed to continue with the experiment. Upon completion of the task or ten minutes of playing, researchers switched each participants' computer screen back to the experiment where they completed implicit and explicit measures of identification and prejudice as well as demographic questions.

Results

Preregistered Analyses

According to a power analysis using G*Power, a sample size of 160 participants was required to obtain an 80% chance of detecting a medium ($d = .5$) effect size. There is little to no

information on how large an effect should be expected for an experiment of this kind and I assumed a medium effect size of $d = .5$. My pre-registered plan (osf.io/ynaw7) was to use an optional stopping strategy which might allow data collection to end before 160 participants were recruited because of anticipated difficulties recruiting participants through the small participant pool at UNF. I used the Pocock Boundary (Pocock, 1977) to control my Type 1 error rate by setting the alpha for this study to .0221 because I planned to check my data at three points ($N = 80$, $N = 120$, and $N = 160$). Using the Pocock boundary holds the overall alpha for the entire study to .05 even though decisions about significance will be made at three points. If the p -value was at or below the threshold at any stopping point, data collection would conclude. I deviated from the pre-registered plan because the UNF participant pool unexpectedly provided more than 160 participants within a single semester. As a result, I only checked the data at the end of the Fall 2017 semester when 189 participants had been recruited for the study.

Implicit identification. To investigate if character sexuality impacted participants' implicit identification with homosexuals, a one-way ANOVA was conducted on identification IAT scores (Figure 1). There were no significant differences between participants in the Gay ($M = -0.10$, $SD = 0.39$), Straight ($M = -0.15$, $SD = 0.41$), and Sexuality Non-Disclosed ($M = -0.16$, $SD = 0.43$) conditions, $F(2, 166) = 0.37$, $p = .691$, $d = 0.13$. A contrast between implicit identification scores in the Gay condition versus the Straight and Sexuality Non-Disclosed conditions was not significant and revealed that participants that played as a Gay character did not have increased implicit identification with homosexuals compared to participants that played as a Straight or Sexuality Non-Disclosed character, $t(166) = 0.85$, $p = .395$, $d = .13$. In addition, a Bayesian one-way ANOVA with a default Cauchy prior of $r = .50$ yielded a Bayes Factor of

$BF_{10} = .082$ which suggested that the data were 12.20 times strongly likely to occur under the null hypothesis than the alternative hypothesis.

Implicit prejudice. To investigate if character sexuality impacted participants' implicit prejudice against homosexuals, a one-way ANOVA was conducted on participants' prejudice IAT scores (Figure 2). There were no significant differences between participants in the Gay ($M = 0.18$, $SD = 0.41$), Straight ($M = 0.17$, $SD = 0.33$), and Sexuality Non-Disclosed ($M = 0.14$, $SD = 0.37$) conditions, $F(2, 166) = 0.14$, $p = .866$, $d = .089$. A contrast between participants' implicit prejudice scores in the Gay condition versus the Straight and Sexuality Non-Disclosed conditions revealed no significant differences between participants' implicit prejudice scores and revealed that participants that played as a Gay character did not have less implicit prejudice against homosexuals than participants that played as a Straight or Sexuality Non-Disclosed character $t(166) = 0.39$, $p = .699$, $d = .061$. In addition, a Bayesian one-way ANOVA with a default Cauchy prior of $r = .50$ yielded a Bayes Factor of $BF_{10} = .068$ which suggested the data were 14.71 times strongly likely to occur under the null hypothesis than the alternative hypothesis.

Explicit identification. To investigate if character sexuality impacted participants' explicit identification with homosexuals, a one-way ANOVA was conducted on participants' IOS difference scores (Figure 3). There were no significant differences between participants in the Gay ($M = -1.39$, $SD = 2.53$), Straight ($M = -1.52$, $SD = 2.98$), and Sexuality Non-Disclosed ($M = -0.93$, $SD = 2.59$) conditions, $F(2, 166) = 0.75$, $p = .475$, $d = 0.19$. Contrasting the Gay condition versus the Straight and Sexuality Non-Disclosed condition revealed no significant differences between participants' explicit identification scores and revealed that participants that played as a Gay character did not have higher explicit identification with homosexuals than participants that played as a Straight or Sexuality Non-Disclosed character $t(166) = 0.38$, $p =$

.705, $d = .059$. In addition, a Bayesian one-way ANOVA with a default Cauchy prior of $r = .50$ yielded a Bayes Factor of $BF_{10} = 0.11$ which suggested the data were 9.01 times moderately likely to occur under the null hypothesis than the alternative hypothesis.

Explicit prejudice. To investigate if character sexuality impacted explicit prejudice against homosexuals, a one-way ANOVA was conducted on feeling thermometer difference scores (Figure 4). There were no significant differences between participants in the Gay ($M = 5.98$, $SD = 27.04$), Straight ($M = 4.63$, $SD = 25.46$), and Sexuality Non-Disclosed ($M = 4.66$, $SD = 22.51$) conditions, $F(2, 166) = .053$, $p = .948$, $d = .063$. Contrasting the Gay condition versus the Straight and Sexuality Non-Disclosed conditions revealed no significant differences between explicit prejudice scores and participants that played as a Gay character did not have higher explicit prejudice against homosexuals than participants that played as a Straight or Sexuality Non-Disclosed character $t(166) = 0.33$, $p = .744$, $d = .051$. In addition, a Bayesian one-way ANOVA with a default Cauchy prior of $r = .50$ yielded a Bayes Factor of $BF_{10} = .062$ which suggested the data were 16.13 times more strongly likely to occur under the null hypothesis than the alternative hypothesis.

Implicit mediation model. Model 4 of the PROCESS macro (Hayes, 2017) was used to test the hypothesis that the relationship between character sexuality and implicit prejudice against homosexuals would be mediated by implicit identification with homosexuals. As suggested by Hayes (2017), unstandardized betas are reported. As Figure 5 indicates, character sexuality was not a significant predictor of participants' implicit prejudice against homosexuals, $B = 0.03$, $SE = 0.03$, $p = .427$. Additionally, character sexuality was not a significant predictor of participants' implicit identification with homosexuals $B = -0.03$, $SE = 0.038$, $p = .431$. Moreover, in the final regression analyses with both the independent and mediating variable present,

character sexuality ($B = 0.03$, $SE = 0.03$, $p = .427$) was not a significant predictor of participants' implicit prejudice against homosexuals. Although participants' implicit identification with homosexuals was a significant predictor of participants' implicit prejudice ($B = 0.27$, $SE = 0.07$, $p < .001$) there was no support for the mediational hypothesis—5000 resamples indicated the indirect effect was not significant, $B = -0.008$, $SE = 0.01$, 95% $CI = -0.03, 0.01$.

Explicit mediation model. Additional analyses were conducted to test the prediction that the relationship between character sexuality and explicit prejudice against homosexuals would be mediated by explicit identification scores. As Figure 6 indicates, character sexuality was not a significant predictor of participants' explicit prejudice against homosexuals, $B = 0.65$, $SE = 2.33$, $p = .779$. Additionally, character sexuality was not a significant predictor of participants' explicit identification with homosexuals, $B = 0.23$, $SE = 0.25$, $p = .356$. Moreover, in the final regression analyses with both the independent and mediating variable present, character sexuality ($B = -0.35$, $SE = 2.07$, $p = .865$) was not a significant predictor of participants' explicit prejudice against homosexuals. Although participants' explicit identification with homosexuals was a significant predictor of participants' explicit prejudice ($B = 4.32$, $SE = 0.63$, $p < .001$) there was no support for the mediational hypothesis—5000 resamples indicated the indirect effect was not significant $B = 1.01$, $SE = 1.12$, $CI = -1.03, 3.42$.

Exploratory Analyses

Rejecting the alternative hypothesis. Though we did not find any differences between the three conditions in the preregistered analyses, because I predicted the largest differences to be between the Gay condition and the Straight condition, I conducted additional exploratory analyses focused on these two conditions. Moreover, in addition to the standard student's t -test, a Two-One Sided T-Test (TOST) procedure (Lakens, 2017) was also calculated for each

dependent measure. In the student's t -test, the p -value helps determine whether to reject the null hypothesis but does not give us information about whether to reject the alternative hypothesis. The TOST procedure, on the other hand, determines whether to reject the alternative hypothesis for a specific effect size. For example, a significant TOST procedure indicates that I should reject the alternative hypothesis for the specified effect size whereas a non-significant TOST procedure indicates that I should fail to reject the alternative hypothesis, which means that future pursuit of this research is worthwhile—with more statistical power. Notably, I specified an effect size of $d = .3$ for all TOST procedures because I believed it was important to be able to reject a small effect size. Importantly, for all exploratory analyses, my alpha level was set at .05.

Implicit identification. An independent samples t -test was conducted on implicit identification with homosexuals between participants in the Gay and Straight conditions. There were no significant differences between participants in the Gay condition ($M = 0.10$, $SD = 0.39$) and the Straight condition ($M = 0.15$, $SD = 0.40$), $t(108) = 0.71$, $p = .481$, $d = 0.13$. Therefore, I failed to reject the null hypothesis. The TOST procedure indicated that the observed effect size ($d = 0.13$) was not significantly within the equivalent bounds of $d = -0.3$ and $d = 0.3$, $t(108) = 0.91$, $p = .183$. Thus, based on the TOST procedure I cannot reject the alternative hypothesis for an effect size of $d = .3$ or smaller.

Implicit prejudice. An independent samples t -test was conducted to investigate mean differences in implicit prejudice against homosexuals between participants in the Gay and Straight conditions. There were no significant differences between participants in the Gay condition ($M = 0.18$, $SD = 0.41$) and the Straight condition ($M = 0.17$, $SD = 0.33$), $t(108) = -0.16$, $p = .877$, $d = 0.03$. The TOST procedure indicated that the observed effect size ($d = -0.03$) was not significantly within the equivalent bounds of $d = -0.3$ and $d = 0.3$, $t(108) = 1.43$, $p = .078$.

Based on the TOST procedure, I cannot reject the alternative hypothesis for an effect size of $d = .3$ or smaller.

Explicit identification. An independent samples t-test revealed no significant differences in explicit identification with homosexuals between participants in the Gay condition ($M = 1.39$, $SD = 2.53$) and the Straight condition ($M = 1.52$, $SD = 2.98$), $t(108) = 0.239$, $p = .812$, $d = 0.05$. The TOST procedure indicated that the observed effect size ($d = 0.05$) was not significantly within the equivalent bounds of $d = -0.3$ and $d = 0.3$, $t(108) = 1.33$, $p = 0.094$. Therefore, I cannot reject the alternative hypothesis for an effect size of $d = .3$ or smaller.

Explicit prejudice. Another independent samples t-test was conducted to investigate differences in explicit prejudice against homosexuals between participants in the Gay and Straight conditions. There were no significant differences between participants in the Gay condition ($M = 5.98$, $SD = 27.04$) and the Straight condition ($M = 4.63$, $SD = 25.46$), $t(108) = 0.270$, $p = .788$, $d = 0.05$. The TOST procedure indicated that the observed effect size ($d = -0.05$) was not significantly within the equivalent bounds of $d = -0.3$ and $d = 0.3$, $t(108) = 1.30$, $p = 0.098$. Therefore, I cannot reject the alternative hypothesis for an effect size of $d = .3$ or smaller.

Correlational analyses. Pearson's product moment correlations were conducted between all dependent measures as well as responses on the Kinsey scale. Table 2 shows implicit and explicit identification with homosexuals negatively correlated with implicit and explicit prejudice against homosexuals (all correlations $p < .01$). Additionally, explicit prejudice against homosexuals was positively correlated with implicit prejudice against homosexuals, $r(167) = .304$, $p < .001$. Finally, Kinsey sexuality scores are positively related to implicit, $r(163) = .327$, $p < .001$, and explicit, $r(163) = .635$, $p < .001$, identification with homosexuals and negatively related to implicit, $r(163) = -.366$, $p < .001$, and explicit prejudice against homosexuals, $r(163) =$

-.371, $p < .001$. Relationships between all other correlations reported in Table 2 were not significant. This basic pattern of findings did not change when only Women, White Women, Heterosexuals, or participants that have never played *Minecraft* were included in the analyses.

Character identification as a moderator. My theorizing for the current study depends on participants' identification with the video game character. That is, participants first identify with the character and then with the social groups the character belongs to. If participants did not identify with Steve when presented as a Gay character, then they should not have identified with the social groups he belongs to, like homosexuals. Therefore, I investigated whether identification with the video game character, Steve, moderated the relationship between character sexuality and identification with and prejudice against homosexuals. Specifically, I expected participants that identified with the character would have increased identification with and decreased prejudice against homosexuals.

Identification with character. A one-sample t-test was conducted on identification scores with Steve against a test value of 1, $t(168) = 12.47$, $p < .001$, $d = 1.92$. Participants did significantly identify with Steve ($M = 2.90$, $SD = 1.98$). For the IOS scale, any participant that did not select 1 reported at least some overlap between themselves and Steve.

Identification with character by condition. Next, it was also important to understand if there were differences between participants' identification scores with Steve when presented as Gay or Straight. To assess participants' identification with Steve, a one-way ANOVA was conducted to investigate mean differences between identification with Steve, $F(1, 108) = 3.55$, $p = 0.62$, $d = .36$. Participants in the Gay condition ($M = 3.27$, $SD = 1.92$) and the Straight condition ($M = 2.57$, $SD = 1.94$) did not significantly differ in their identification with Steve (see Figure 7).

Implicit measures. Model 1 of the Process Macro (Hayes, 2017) was used to investigate whether identification with Steve moderated the relationship between character sexuality and implicit identification with homosexuals. Scores for participants' implicit identification with homosexuals were entered as the dependent variable. Additionally, character sexuality, identification scores with Steve, and their interaction were entered as the independent variables, $F(3, 106) = .54, p = .656, R^2 = .015$. Character sexuality ($B = .11, t(106) = .76, p = .450$), identification with Steve ($B < .001, t(106) = .005, p = .996$), and their interaction ($B = -.013, t(106) = .33, p = .743$) were not significant predictors of implicit identification with homosexuals. Therefore, identification with Steve did not moderate the relationship between character sexuality and implicit identification with homosexuals.

Similarly, Model 1 of the process Macro (Hayes, 2017) was used to investigate whether identification with Steve moderated the relationship between character sexuality (Gay vs. Straight) and implicit prejudice against homosexuals. Scores for participants' implicit prejudice against homosexuals were entered as the dependent variable. Additionally, character sexuality, participants' identification with Steve, and their interaction were entered as the independent variables, $F(3, 106) = .26, p = .855, R^2 = .007$. Character sexuality ($B = .098, t(106) = .748, p = .456$), identification with Steve ($B = .051, t(106) = .866, p = .388$), and their interaction ($B = -.031, t(106) = .829, p = .409$) were not significant predictors of implicit prejudice against homosexuals. Therefore, identification with Steve did not moderate the relationship between character sexuality and implicit prejudice against homosexuals.

Explicit measures. Model 1 of the Process Macro (Hayes, 2017) was also used to investigate whether identification with Steve moderated the relationship between character sexuality (Gay vs. Straight) and explicit identification with homosexuals. Participants' scores for

explicit identification with homosexuals was entered as the dependent variable. Additionally, character sexuality, identification with Steve, and their interaction were entered as the independent variables, $F(3, 106) = 1.87, p = .139, R^2 = .050$. Character sexuality was not a significant predictor of explicit identification with homosexuals $B = -1.75, t(106) = 1.84, p = .069$. However, identification with Steve ($B = -.895, t(106) = 2.08, p = .040$) and the interaction of both independent variables ($B = .630, t(106) = 2.32, p = .022$) were significant predictors of explicit identification with homosexuals. Therefore, identification with Steve moderates the relationship between character sexuality and explicit identification with homosexuals (see Figure 8). Specifically, among participants that identified with Steve, a marginally significant relationship was found for participants' explicit identification with homosexuals for participants that played as a Gay character compared to participants that played as a Straight character, $B = 1.55, t(106) = 1.89, p = .061$. Additionally, among participants that did not identify with Steve, no significant relationship was found for participants' explicit identification with homosexuals for those that played as a Gay character compared to participants that played as a Straight character, $B = -1.12, t(106) = 1.51, p = .133$.

Again, Model 1 of the Process Macro (Hayes, 2017) was used to investigate whether identification with Steve moderated the relationship between character sexuality (Gay vs. Straight) and explicit prejudice against homosexuals. Participants' scores for explicit prejudice against homosexuals was entered as the dependent variable. Additionally, character sexuality, identification with Steve, and their interaction were entered as the independent variables, $F(3, 106) = 4.00, p = .010, R^2 = .10$. Character sexuality ($B = 23.89, t(106) = 2.72, p = .008$), identification with Steve ($B = 13.72, t(106) = 3.45, p < .001$), and their interaction ($B = -8.09, t(106) = 3.23, p = .012$) were significant predictors of participants' explicit prejudice against

homosexuals. Therefore, identification with Steve moderates the relationship between character sexuality and explicit prejudice against homosexuals (see Figure 9). Specifically, among participants that identified with Steve, participants that played as a Gay character had lower explicit prejudice against homosexuals compared to participants that played as a Straight character¹, $B = -18.51$, $t(106) = 2.44$, $p = .016$. Additionally, among participants that did not identify with Steve, participants that played as a Gay character had higher explicit prejudice against homosexuals compared to participants that played as a Straight character, $B = 15.80$, $t(106) = 2.31$, $p = .023$.

Discussion

The goal of the current study was to investigate a video game-based strategy to increase identification with and reduce prejudice against homosexuals. Each pre-registered hypothesis (e.g., playing as a Gay, Straight, or Sexuality Non-Disclosed character would influence identification with and prejudice against homosexuals) was not supported. It is important to note that in exploratory analyses, the TOST procedure indicated that I cannot reject the alternative hypothesis that the effect size for this manipulation is small ($d = .3$). According to a power analysis, a sample size of 278 participants is needed for an 80% chance of detecting an effect size of $d = .3$. Notably, exploratory analyses demonstrated that identification with the game character moderated the relationship between character sexuality and explicit identification with and prejudice against homosexuals. Among participants that identified with Steve, participants

¹ Additional exploratory analyses investigated if the relationship between character sexuality and implicit and explicit measures was moderated by experience with video games, experience with *Minecraft*, Kinsey sexuality scores, and age. No moderation was found. There was, however, an interaction between character sexuality, Kinsey sexuality scores, and time spent playing video games. See Appendix D for this supplementary analysis.

that played as a Gay character had higher explicit identification with and lower explicit prejudice against homosexuals.

Though past research has indicated that playing video games influenced associations between self and specific traits (Klimmt et al., 2010), in the current study, playing video games only influenced identification and prejudice among participants who identified with the game character. This may be because the manipulation in the current study was not strong enough for all participants to identify with the game character. Future researchers should investigate stronger manipulations.

One strategy to increase the strength of the manipulation may be to increase time spent playing the game (Turkay & Kinzer, 2014). In the current study, participants played the game either until the 10 minutes allotted for the task had expired or until they completed the task. It may be that results would vary according to how much time is spent playing the game. For example, game character identification may increase if participants have 30 minutes to complete the task, or if participants have to come back to the lab for multiple play sessions.

Another strategy to increase the strength of the manipulation would be to allow participants to customize their video game character. In the current study participants were not given the option to customize their characters. Many video games give players the option to customize their character's appearance. For example, games such as *Skyrim* or *Dragon Age: Origins* allow players to choose their character's sex, hair style, eye color, physique, and many other details. Past researchers have investigated identification with characters in video games and tested the effects that character customization had on participants' identification with their character (Turkay, 2013; Turkay & Kinzer, 2014). Researchers believe that participants who can customize their character are able to close the gap between real-self and ideal-self. That is, as

opposed to playing a game where a character cannot be customized, for those games where character customization is available participants may project their ideal selves onto the character that they are playing. Future researchers would benefit from choosing a game in which participants can customize their character in order for participants to play as a character that may be an extension of self.

An additional strategy to increase strength of the manipulation would be to test this intervention on a sample of men. Women usually hold a more positive attitude towards homosexuals, especially Gay men (Herek, 2002) but men predominantly make up much of the video gaming community. Because men make up most of the video gaming community, focusing this intervention on men may increase the strength of the manipulation by targeting a group who may be more likely to be prejudiced against homosexual characters in video games and make homophobic comments while interacting with others while playing games online. In the current study, only 26 participants were men and, therefore, running exploratory analyses on men's explicit and implicit identification with and prejudice against homosexuals was not feasible. Future researchers would benefit from exploring this intervention on a sample of men to see if it would help to reduce prejudiced against homosexuals.

Another way to increase strength of the manipulation would be to have participants play a character that is the same sex as themselves. Most participants in the current study were female, but they played as a male character. In games, most players prefer to play as a same sex character (Roberts & Parks, 1999). It may be easier for participants to identify with a character that is the same sex as themselves. It may be beneficial for future researchers investigating this line of research to control for sex of the character. That is, having female participants play as a female character and male participants play as a male character.

One final strategy to increasing the strength of the manipulation would be to have participants play a game in which there is storytelling. Video games that include storytelling may increase identification with the character (Schneider, Lang, Shin, & Bradley, 2004). Burgess and colleagues (2011) point out that video games are storytelling and that individuals enjoy games with storytelling. Including storytelling in the game may increase participants identification with the protagonist as opposed to a video game that has no conflict. Additionally, the storytelling in a video game is unique from other forms of storytelling such as a book or a movie. Klimmt, Hefner, & Vorderer (2009) make the point that in a book the ending of the story is already decided along with the attributes associated with the protagonist. With a video game, however, the story and the attributes associated with the character can be decided upon partly by the player through decisions made in the game. Future researchers would benefit from choosing a video game that has an intricate story with conflict and character development.

Strengths

One strength of the current study is that the sample included mostly non-video game players. Participants who regularly play video games may be more inclined to identify with video game characters because they have more experience identifying with those characters. Therefore, if the strategy to increase identification with and reduce prejudice against out-groups works with those who do not regularly play video games, it may be even more influential for those who do play video games regularly.

In the current study, use of both Bayesian analyses and the TOST procedure are a strength because both analyses lend information about the alternative hypothesis as opposed to using only null hypothesis significance testing (NHST). Bayesian analysis informs us how much more likely one hypothesis (e.g., the null hypothesis) is compared to the other (e.g., alternative

hypothesis), given prior assumptions and the data. Similarly, the TOST procedure informs the decision to reject the alternative hypothesis for a specified effect size. The importance of these tests is that they lend more information than testing the null hypothesis alone, as is done with NHST. Also, these tests inform future researchers if further investigation of this topic is worthwhile. For example, in the current study, based on the TOST I recommend that any future researchers investigating this topic to recruit enough participants to observe a small effect size ($d = .3$).

An additional strength of the current study is that all hypotheses were pre-registered (osf.io/ynaw7). Pre-registration encourages transparency and addresses issues within research such as p-hacking (i.e., changing methodology to obtain significant results), HARKing (i.e., generating hypotheses after data have been analyzed) and the file drawer problem (i.e., data that does not get published). For example, without pre-registration in the current study I could have concluded that any exploratory analyses were part of my original hypotheses. Additionally, I could have changed my original hypotheses to match the results that were obtained. Without replication, exploratory analyses should be treated as such; that they are exploratory analyses only and not part of any pre-registered hypotheses.

One final strength of the current study is that materials and data are publicly accessible. This allows researchers to follow up on any questions they may have about the sample. Publicly accessible materials and data also allow for reproducibility. Public access to materials and data are important to both reproducibility and research because it allows future researchers to use all the same materials used for the current study in different settings and with different populations. I recommend that future research should investigate this topic with more statistical power. This way, if there are small effect sizes present, then future researchers will be able to detect them.

Additionally, any future researchers can be confident that they are using the proper materials if they wish to investigate this topic or attempt to replicate the current study.

Limitations and Future Directions

A limitation to the current study is that most participants did not regularly play video games. Participants that regularly play video games may more readily identify with the characters that they play. Those who do not regularly play video games may not do this. It may be that those who do not regularly play video games associate negative traits with playing video games (e.g., “nerdy” or “a waste of time”). If participants who do not regularly play video games are not readily available to identify with a video game character or associate negative traits with video games, then identification with the character may not occur.

To investigate if implicit identification with and prejudice against homosexuals is moderated by implicit identification with character, then a future direction would be to include an implicit measure of identification with the character. In the current study no measure of implicit identification with the character is present. Explicit identification with character moderated the relationship between character sexuality and explicit measures, but not implicit measures. Future researchers would benefit from investigating how implicit identification with the character may moderate the relationship between character sexuality and implicit identification with and implicit prejudice against homosexuals.

Overall, the current study is important to future research within this field by opening a door to new methodology within identification, social cognition, and video game research. Much research with video games tends to focus on negative outcomes such as aggression or addiction. Researchers have found that character portrayals within video games can reinforce prejudice against minority groups (i.e., Black people, Women, etc.) (Burgess et al., 2011; Deskins, 2013).

If video games influence how players view specific groups, then I propose that video games can be used to reduce prejudice towards minority groups. I believe if video game developers and publishers start to portray minority characters with positive traits, then players can identify with these characters and social groups more. This may be especially true when those characters who are part of the out-group are associated with more positive traits. Homosexuals and other minorities are slowly beginning to have more positive prominent roles and if this trend within video gaming continues then it may help in addressing issues regarding prejudice.

Appendix A

In-Game Controls

Left Click –

Hold down left click to break blocks (gather materials).

While in Inventory, left click and drag to left-most box on Quick Access Bar to equip it.

Move Mouse to look around

W – Move Forward

A – Strafe Left

S – Move Backward

D – Strafe Right

Space Bar – Jump

Right Click – Place item on ground/Interact with Crafting Table

E – Open inventory

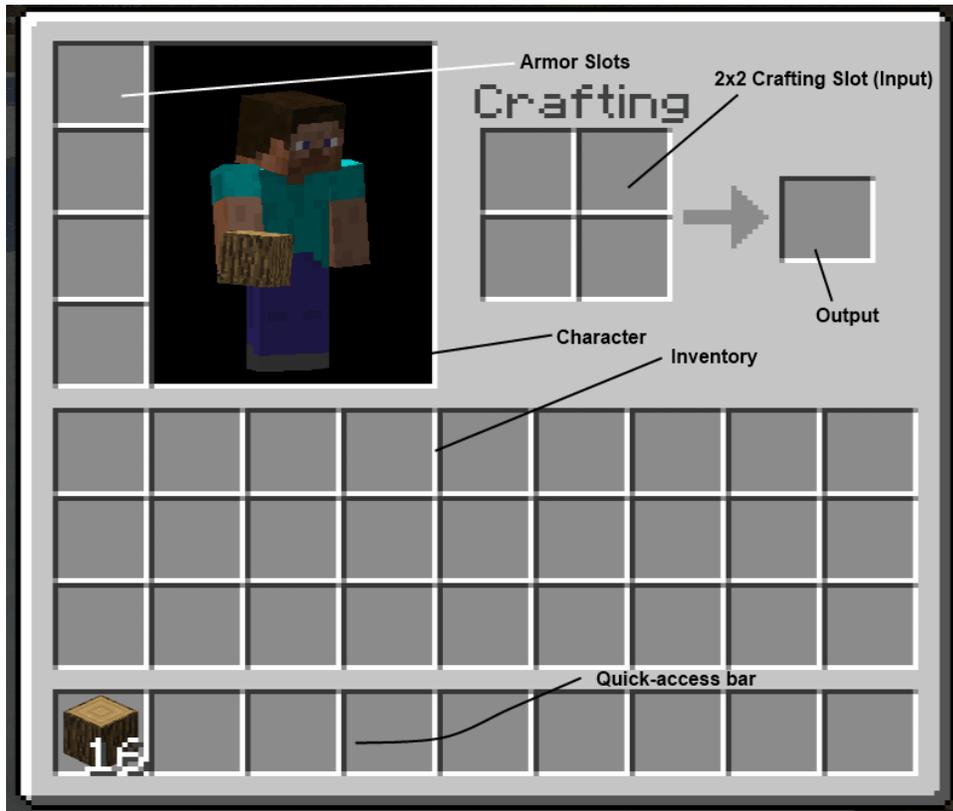
Pick-up Item - If an item is on the ground, move your character over the item. It will be picked up automatically and placed into your inventory.

ESC – Exit Inventory/Exit Screen/Pause Game

Appendix B

In-Game Task

BE SURE TO READ ALL INSTRUCTIONS CAREFULLY AS ANY QUESTIONS THAT MAY ARISE ARE MORE THAN LIKELY ANSWERED IN THE INSTRUCTIONS.



Step 1: Collect Wood pieces

To collect wood, you will need to attack (by holding **left click**) an object made of wood (ex. A tree trunk). Any type of wood will work. Collect **two** pieces of **wood**.

Be sure to pick the Wood up off the ground.

If you collected the Wood, you should see it in your Quick Access Bar (Bar at the bottom of the screen/or open inventory by pressing "E").

Step 2: Create Wooden Planks

Open your inventory ("E" key) and notice the small 2 x 2 Crafting matrix/slot.

Place both pieces of wood (Make sure they are the same type of wood) in the Crafting Table like so:

Wood x2	

In the output box (next to the 2 x 2 crafting table) collect the Wooden Planks by left clicking on the Wooden Planks in the output box. Place them into your inventory by left clicking and placing them into an empty space in your inventory.

Note: Try not to confuse **Wood** with **Wooden Planks**.

Step 3: Create a 3 x 3 Crafting Table

Open your inventory (“E” key).

Place one **Wooden Plank** into each square of the 2 x 2 matrix (like the table below).

If you have a stack of planks (like in the picture of the inventory above, there is a stack of 16) you can click the stack and place one in each square in the 2 x 2 matrix by hovering over the area you want to place it in and right clicking. Alternatively, you can split a stack in half by right clicking it (Ex. Making one stack of four wooden planks into two stacks of two).

Note: Make sure you are using **Wooden Planks**

Wooden Plank	Wooden Plank
Wooden Plank	Wooden Plank

In the output box (next to the 2 x 2 crafting table) collect the Crafting Table by left clicking. Place the Crafting Table into the left-most box in your Quick Access Bar (bottom bar in inventory).

Exit your inventory. Place the Crafting Table on the ground by looking at the ground and **right clicking**. Make sure to place the crafting table in an open area so nothing is obstructing it. Do not forget where you placed this table, you will need it soon.

Step 4: Create a Wooden Sword

Collect **four** pieces of **wood**.

Return to your crafting table, have your character look at the table, and right click to open the new grid. You should now see a 3 x 3 crafting matrix/slot.

Place your pieces of wood in the crafting table to obtain Wooden Planks (See Step 2 if unsure how to create **Wooden Planks**).

Place **Two** Wooden Planks in the grid like so:

		Wooden Plank
		Wooden Plank

This should yield 4 Sticks. Left click on the sticks in the output box and place them into your inventory.

Place **one Stick** and **two Wooden Planks** in the 3 x 3 grid like so:

	Wooden Plank	
	Wooden Plank	
	Stick	

This should yield a Wooden Sword.

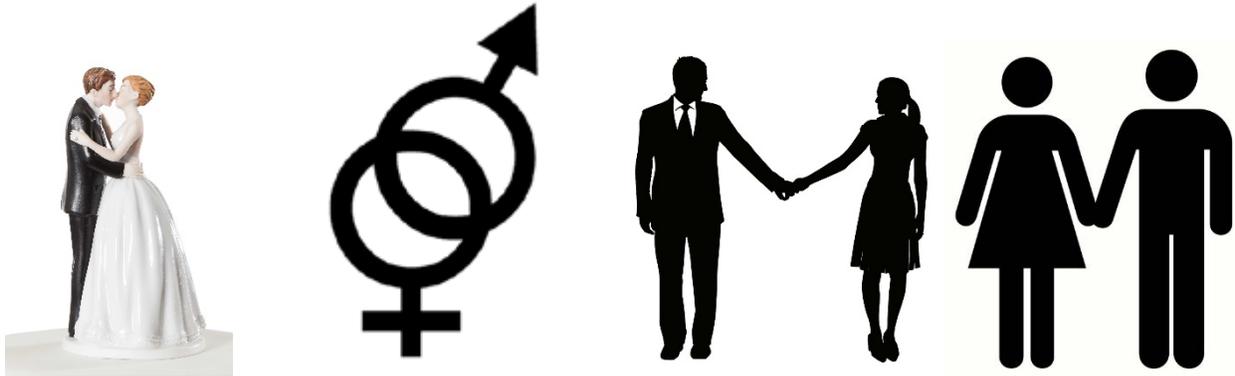
Equip the Wooden Sword to Steve by clicking the sword in the output box and dragging it to the left-most box on your Quick Access Bar. (If any item is currently there, place the other item anywhere in your inventory)

Once you have equipped the Wooden Sword press “ESC” To pause the game.

Appendix C

Implicit Association Test Stimuli

Heterosexual



Lesbian



Gay Men



Appendix D

Supplementary Analyses

Model 3 of the Process Macro (Hayes, 2017) was used to investigate whether Kinsey sexuality scores and if participants have played video games before moderated the relationship between character sexuality and implicit prejudice against homosexuals. Participants' implicit prejudice scores was entered as the dependent variables. Additionally, character sexuality, Kinsey sexuality scores, whether participants had played video games before were entered as the dependent variables, $F(7, 100) = 6.78, p < .001$. Character sexuality ($B = .19, t(100) = 1.76, p = .081$), Kinsey sexuality scores ($B = .058, t(100) = .80, p = .425$), and if participants had played games in the past ($B = .32, t(100) = .10, p = .375$) were not significant predictors of participants' implicit prejudice against homosexuals. The interactions between character sexuality and if participants had played video games in the past ($B = .027, t(100) = 1.00, p = .921$), Kinsey sexuality and if participants had played video games in the past ($B = .034, t(100) = .19, p = .849$), and the three-way interaction between character sexuality, if participants played video games in the past, and Kinsey sexuality ($B = -.18, t(106) = 1.15, p = .253$) were not significant predictors of participants' implicit prejudice against homosexuals. The interaction between character sexuality and the Kinsey sexuality scale, however, was a significant predictor of participants' implicit prejudice against homosexuals, $B = -.086, t(106) = 2.00, p = .049$.

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Table 1

Descriptive Statistics for Kinsey Scale

Variable	<i>N</i> (%)	<i>M</i>	<i>SD</i>
Kinsey Scale		1.98	1.78
1. Exclusively Heterosexual	110(66.7%)		
2. Predominantly Heterosexual, only incidentally Homosexual	18(10.9%)		
3. Predominantly Heterosexual, but more than incidentally Homosexual	11(6.7%)		
4. Equally Heterosexual and Homosexual	8(4.8%)		
5. Predominantly Homosexual, but more than incidentally Heterosexual	2(1.2%)		
6. Predominantly Homosexual, only incidentally Heterosexual	6(3.6%)		
7. Exclusively Homosexual	10(6.1%)		

Note. Four participants did not answer the Kinsey scale ($N = 165$).

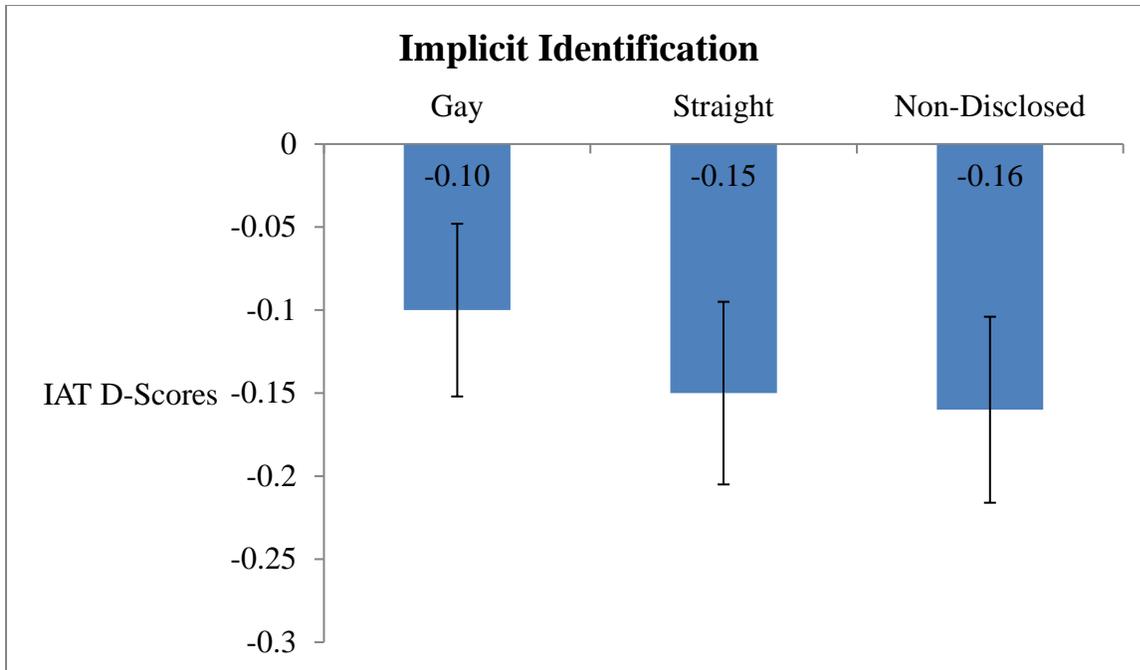


Figure 1. Participants' implicit identification scores for those that played as a Gay, Straight, or Sexuality Non-Disclosed character. Scores were reversed to indicate that Higher scores (closer to zero) mean higher implicit identification with homosexuals.

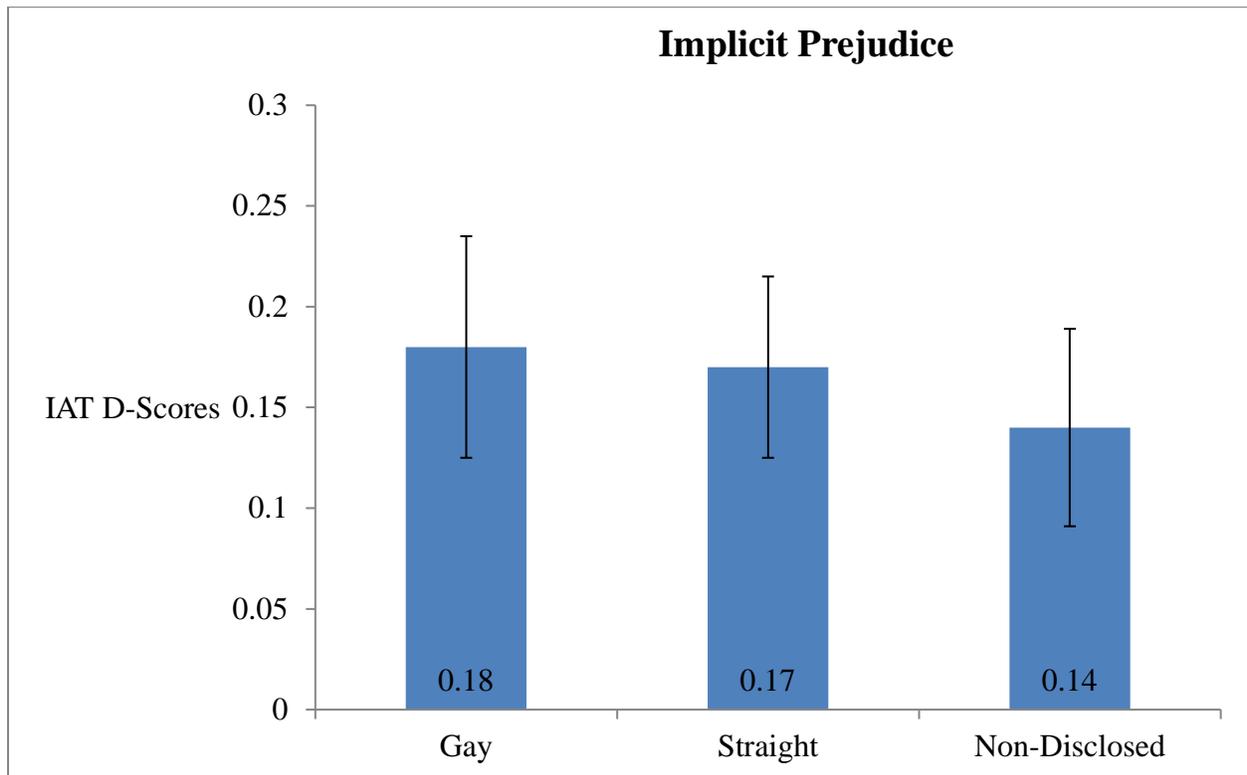


Figure 2. Participants' scores for implicit prejudice against homosexuals for those that played as a Gay, Straight or Sexuality Non-Disclosed character. Higher scores are indicative of higher prejudice against homosexuals.

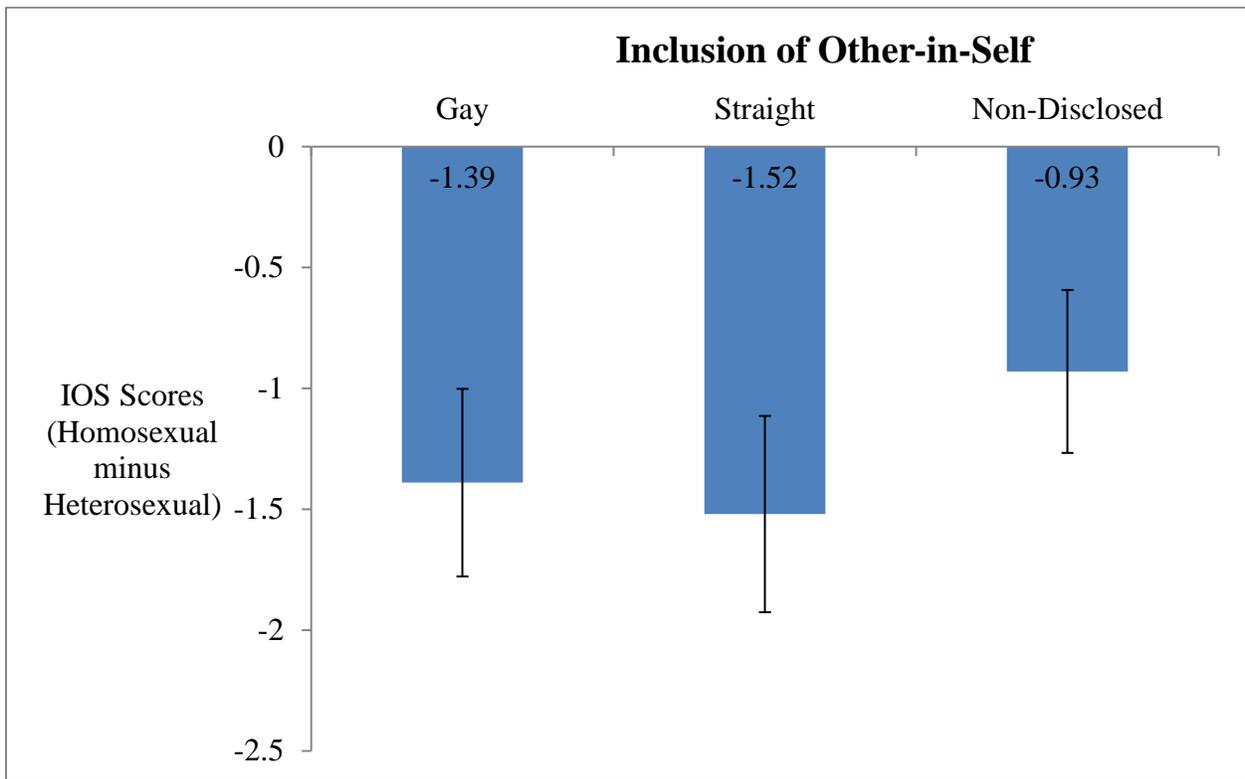


Figure 3. Participants' explicit identification scores (i.e., Inclusion of Other-in-Self) for those that played as a Gay, Straight, or Sexuality Non-Disclosed character. Scores were reversed to indicate that higher scores (closer to zero) mean more explicit identification with homosexuals.

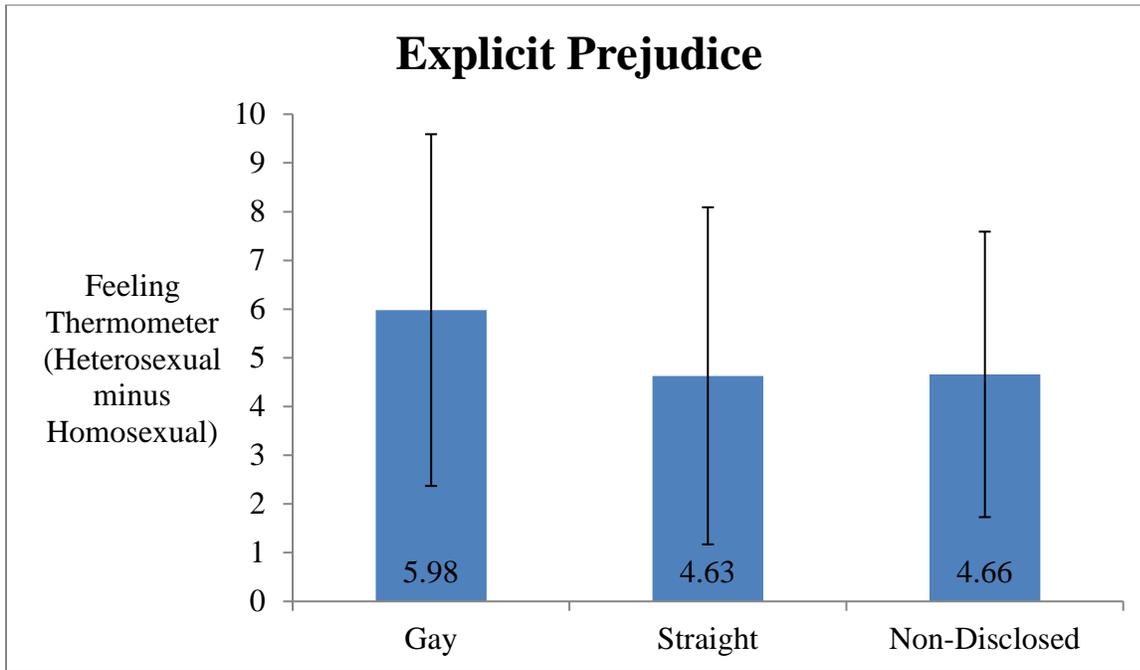


Figure 4. Participants' explicit prejudice scores against homosexuals for those that played as a Gay, Straight, or Sexuality Non-Disclosed character. Higher scores are indicative of more warm/favorable feelings towards homosexuals.

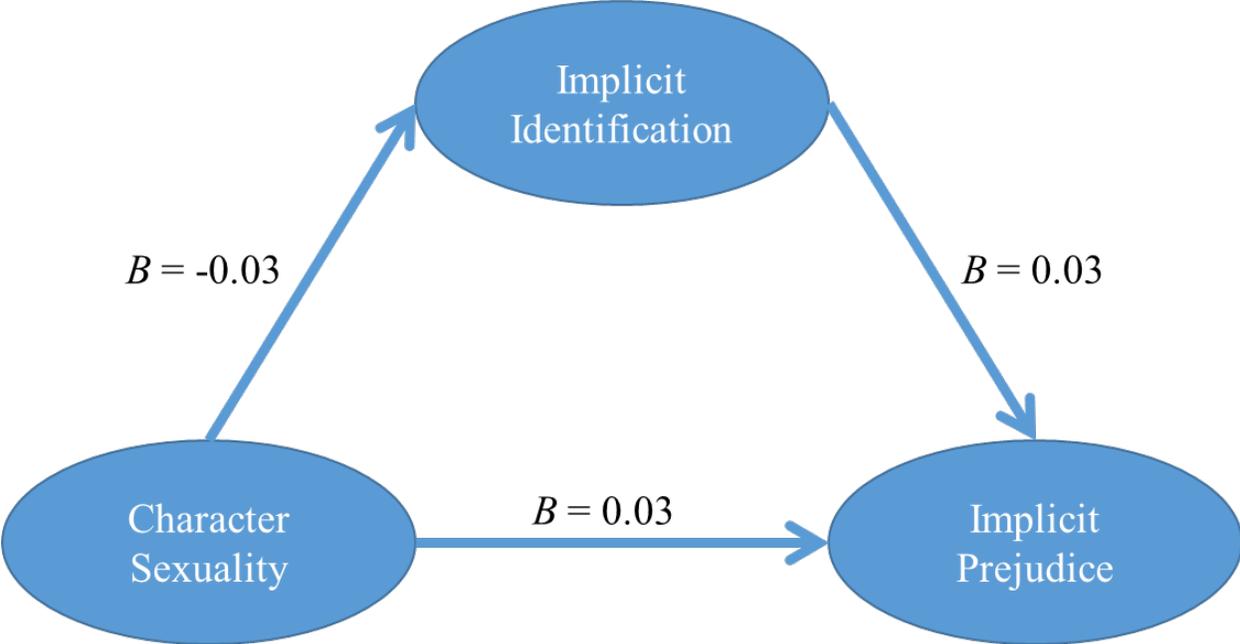


Figure 5. Implicit mediation model between character sexuality (X), implicit prejudice (Y), and implicit identification (M).

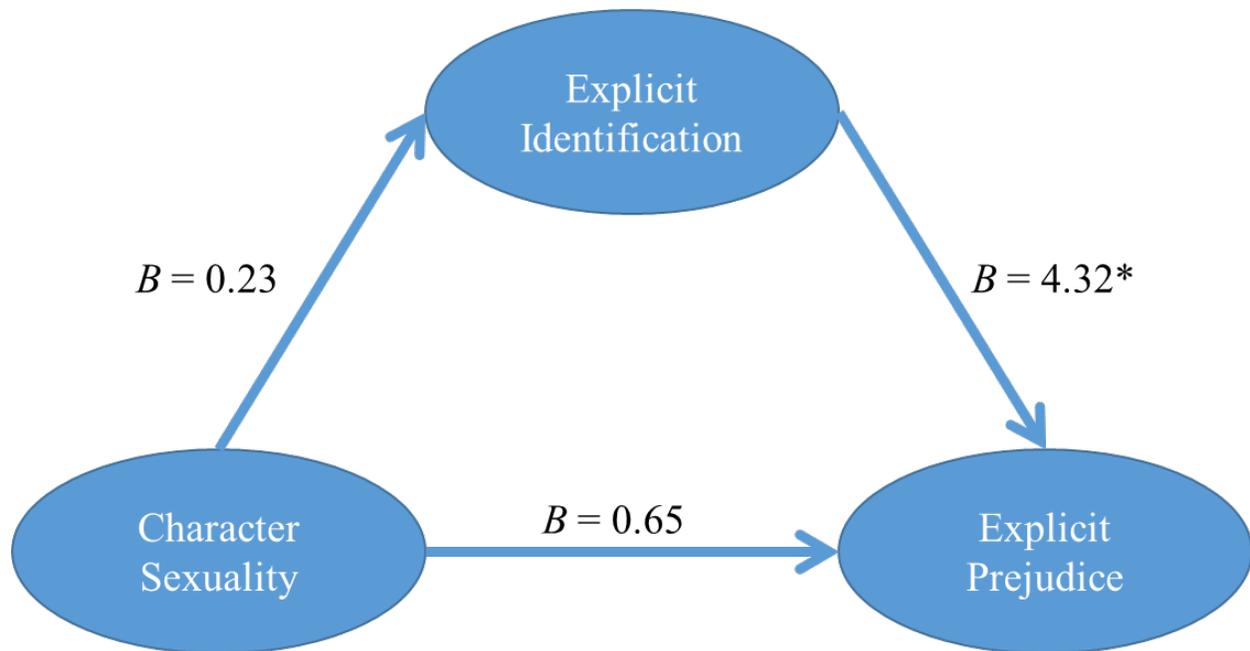


Figure 6. Explicit mediation model between character sexuality (X), explicit prejudice (Y), and explicit identification (M); $*p < .05$.

Table 2

Correlation Matrix for Implicit and Explicit Measures

Variables	1	2	3	4	5	6	7
1. Implicit Identification	-						
2. Implicit Prejudice	-.297**	-					
3. Explicit Identification	-.114	-.257*	-				
4. Explicit Prejudice	-.262*	.304**	-.468**	-			
5. Attitudes towards Steve	.063	-.133	.069	-.042	-		
6. Identification with Steve	-.014	-.002	.055	.040	.572**	-	
7. Sexuality	.327**	-.366**	.635**	-.371**	.041	-.006	-

$N = 169$

* $p < .01$. ** $p < .001$

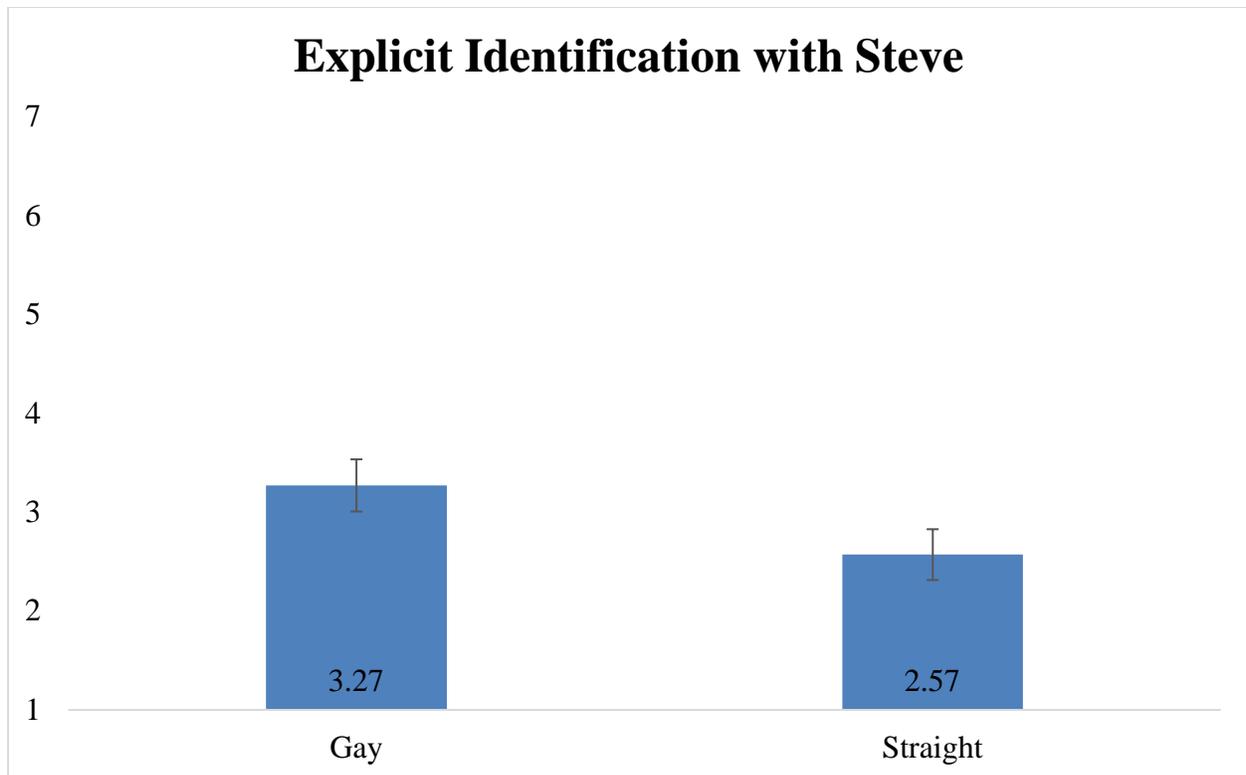


Figure 7. Participants' identification scores with Steve when presented as a Gay or Straight character. Error bars represent standard error.

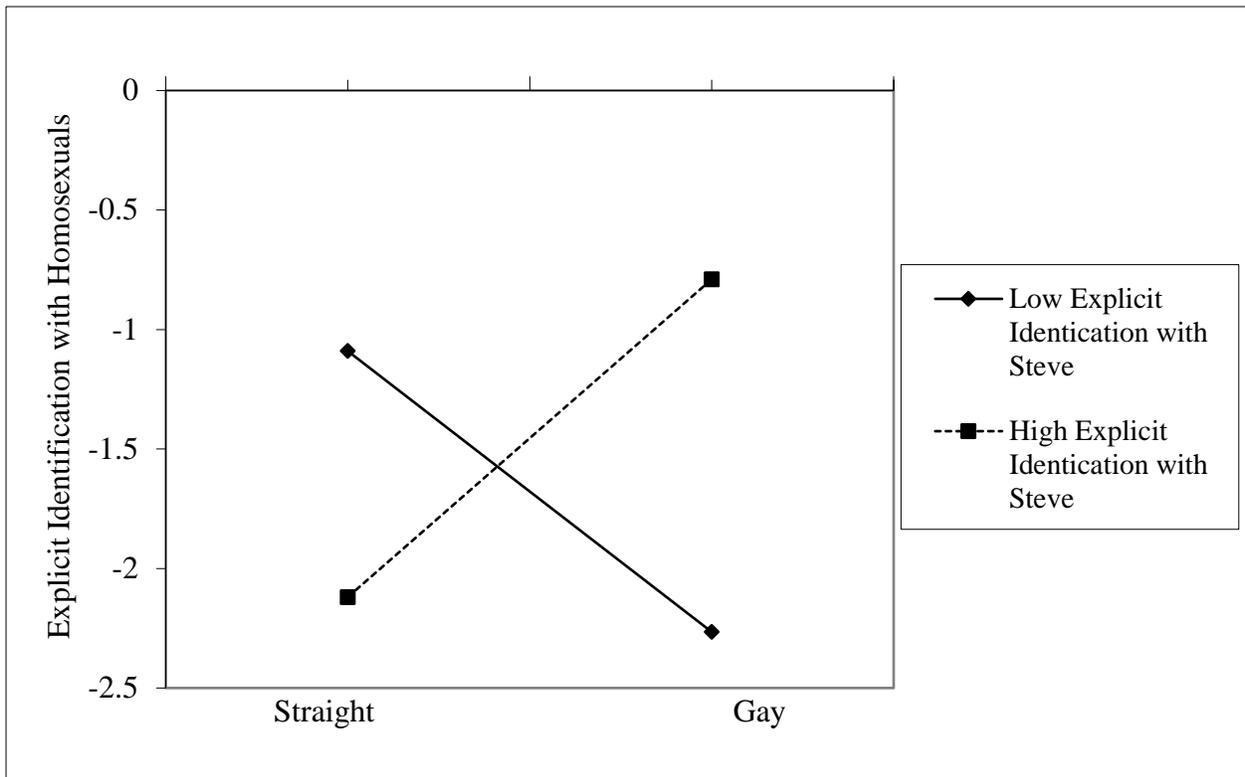


Figure 8. Moderation of identification with Steve between the relationship of character sexuality and explicit identification with homosexuals. Those who identified more with Steve and played as the Gay character identified more with homosexuals versus those who played as the Straight character.

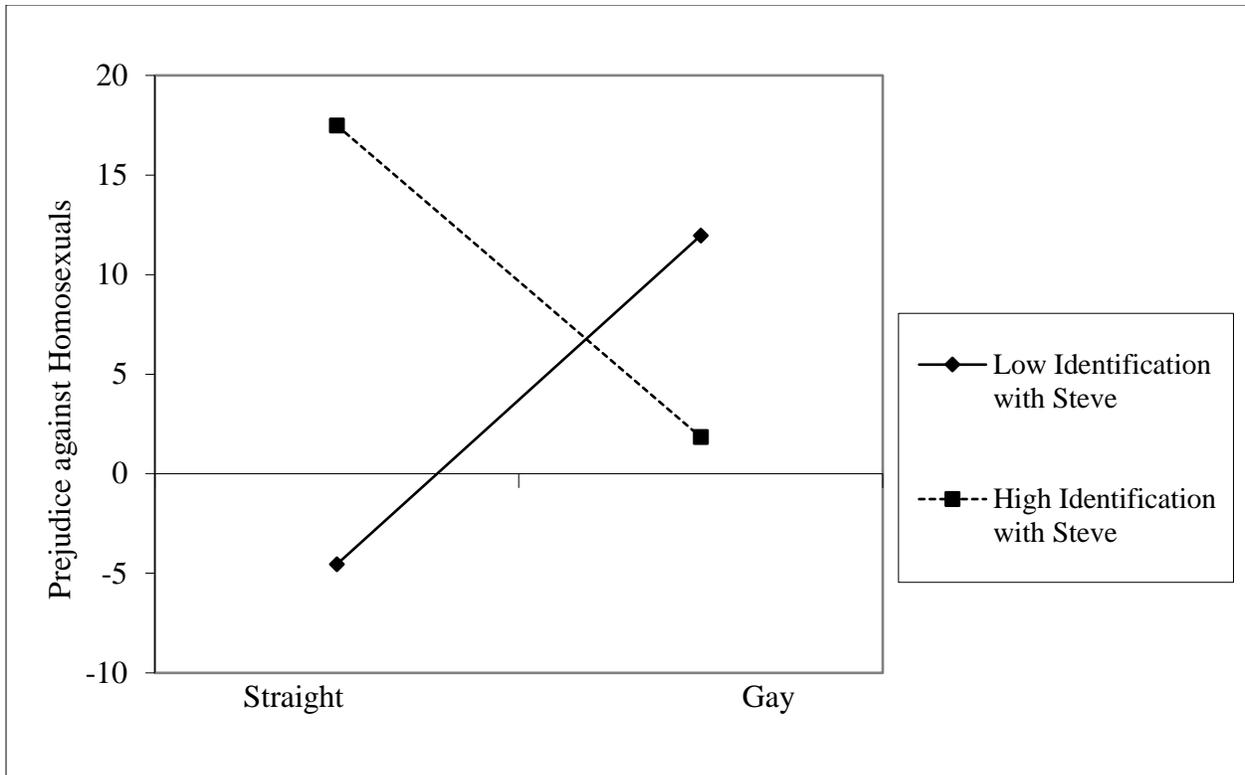


Figure 9. Moderation of identification with Steve between the relationship of character sexuality and explicit prejudice against homosexuals. Those who identified more with Steve and played as the Gay character had reduced explicit prejudice against homosexuals versus those who played as the Straight character.