Video Game Playing and Beliefs about Masculinity Among Male and Female Emerging Adults

Video game playing and beliefs about masculinity among emerging adults

Abstract

Video games have been soundly critiqued for their depiction of gender and emerging research has shown than playing can be associated with holding stereotypical or narrow views of gender roles and norms. Yet, rarely has past research focused particularly on correlations between video game playing and perceptions of masculinity, in particular, despite critique of gaming content and culture as a space where a type of hypermasculinity thrives. The current study explores the role of overall amount of time spent with video games and time spent with games that contain violence in the beliefs that emerging adults hold about masculine gender role norms. In a sample of 246 young adult video game players from across the United States, amount of violence in favorite games is shown to predict scores on the Masculine Role Norms Index-Revised and some of its subscales even under multiple controls. Gender identity of respondent does not moderate the relationships, thereby suggesting that both men and women players with violent favorite games are likely to endorse a view of masculinity that includes aggression, dominance, toughness, and the suppression of emotions. Implications for policymakers, students and other young adults, and for society at large are discussed.

Keywords: video games, gender roles, masculinity, violent media, cultivation theory

Introduction

"Toxic masculinity," the notion that cultural norms suggest anger, callousness, and aggression are socially acceptable for men and boys, has been the subject of intense scrutiny in recent months (e.g., Dastagir 2018). In the aftermath of the Parkland, Florida high school shooting, actor and comedian Michael Ian Black (2018) penned a *New York Times* opinion piece titled "The Boys Are Not Alright" in which he pointed out that the shooters in nearly all of the recent spate of mass shootings have been male. Black remarks upon the prevalence of an "…outdated model of masculinity, where manhood is measured in strength, where there is no way to be vulnerable without being emasculated, where manliness is about having power over others."

In the wake of the Parkland mass shooting, video games, too, are in the spotlight once again as potential contributors to desensitization and/or aggression, with U.S. President Trump critiquing the game industry for its depiction of violence and expressing concern for the effects of gaming on young people (e.g., Rogers 2018). Many studies have been conducted to attempt to answer the question of whether video games exert a meaningful effect on aggressive or violent behavior. Far fewer explore the potential link between the expression of masculinity that was the subject of the Michael Ian Black editorial with video game use, despite the fact that video games have long been found to privilege a narrow range of masculinities in their depictions as well as in gaming culture at large (Condis 2018).

The social world provides many sources of information and cues regarding norms and ideals for the performance of gender. The media are one such social force, providing audiences with indications of dominant ways of performing gender through the narratives and characterizations of individuals appearing onscreen (Scharrer 2013). Yet, just as media can shape

ideas about self and others, ideas about self and others can shape meanings derived from media, as well. Through selective exposure, for example, individuals choose media to correspond with existing experiences and points of views (Zillmann and Bryant 1985). In studies using the reinforcing spirals framework (Slater 2007), both possibilities—media choices shaping the self and the self shaping media choices—are explored side by side for their potential for mutual reinforcement. Among the many applications of reinforcing spirals is the ability of media messages to resonate or interact with social group identity (Tajfel and Turner 1986).

In the present study, the perspective of media as socializing agent is taken to explore the role of video gaming as a predictor of particular views of masculinity. Yet, the possibility of differing individuals receiving differing messages about masculinity depending on their own gender identity is explored, as well, accounting for the role of prior experiences and sensibilities. Cultivation theory (Gerbner and Gross 1976) is a long-standing theory used to understand the role of the media in shaping individuals' views of social norms and cultural beliefs. Here, cultivation is put forth as the theoretical lens through which time spent with video games is examined for its role in contributing to conceptions of masculine gender roles and norms during young adulthood among those who identify as male as well as those who identify as female.

Literature Review

Media as a Source of Gender Ideology Construction

Masculinity is a complex and multifaceted social construction (Levant and Richmond 2007) that manifests in different forms as it intersects with race, class, sexual orientation, and other aspects of identity (Connell 2005; Kimmel 1987). Despite this variance, there remains a particular, persistent ideological construction of masculinity that undergirds much of the modern Western world's image of the "traditional" or hegemonic masculine man (Connell 2005; Pleck

1995). Levant, Hall, and Ranking (2013) have identified salient characteristics of this ideology, with components that include Avoidance of Femininity (eschewing traits and activities associated with women), Negativity Toward Sexual Minorities (holding homophobic and/or hetereosexist views), Self-reliance (demonstrating independence, autonomy), Toughness (displaying physical and emotional strength or resilience), Dominance (taking charge/exhibiting power), Importance of Sex (being driven by sexual desire and conquest), and Restrictive Emotionality (suppressing emotions that may be considered weak, exhibiting stoicism). In spite of its idealized status, this construction of masculinity is problematic, in that in contributes to the marginalization of women and alternate masculinities (Connell and Messerschmidt 2005), and in that adherence to these masculine norms has been associated with a host of negative psychological and physiological outcomes (for a review, see Levant and Richmond 2007).

Masculine ideologies are embodied in cultural norms that proscribe certain gendered attitudes and behaviors (Connell 2005), taking shape from "an individual's internalization of cultural belief systems and attitudes toward masculinity and men's roles" (Levant and Richmond, 2007, p. 131). The media are one such source of information about cultural norms and belief systems (Morgan 2009). Cultivation theory provides a framework for understanding how long-term media exposure can shape people's beliefs, attitudes, and values (Gerbner and Gross 1976). Originally developed in the context of television research, the theory argues that the consistent messages found throughout the medium of television contribute to viewers' understanding of social reality, so that heavier viewers are more likely to accept the lessons of this distorted "television reality" than light viewers (Morgan 2009).

Cultivation theorists posit that the enculturation role of television is a slow and steady, cumulative process rather than a stimulus-response-type outcome to be measured with

experimental methodology in the lab (Gerbner, Gross, Morgan and Signorielli 2002). Although experimental research has been applied to understand the cognitive processes underlying cultivation (e.g., Shrum 2001), the vast majority of cultivation studies, therefore, use survey research to take a cross-sectional snapshot of potential associations between media exposure and perceptions of social norms and values (Potter 2015). In response to greater selectivity afforded to audiences in an increasingly personalized media environment, some researchers applying cultivation theory now focus on more narrow measures of media exposure rather than on overall amount of time spent with television in general (Potter and Chang 1990). Bilandzic and Busselle (2012) argue that as long as they contain somewhat coherent content and structure, exposure to specific television genres (like crime shows or sitcoms) should result in cultivation outcomes.

Prior studies have found small but significant associations between overall amount of television viewing and holding stereotypical views of roles taken on by men and by women (see Morgan 2009 for a review). A small number of prior studies has applied cultivation theory to study associations among television viewing, exposure to particular genres, and conceptions about masculinity, in particular, using cross-sectional survey research. For example, overall amount of television viewing, reality television viewing, and movie viewing have each been positively associated with holding stereotypical views of masculine roles and norms within the context of sexual relations (Ferris, Smith, Greenberg and Smith, 2007; Seabrook, Ward, Reed, Manago, Giaccardi and Lippman, 2016; Ward, Epstein, Caruthers and Merriwether, 2011).

Giaccardi, Ward, Seabrook, Manago and Lippman (2016) studied wider conceptions of masculine roles and norms in two survey studies, each with over 400 college men. The first found amount of movie viewing and reality television viewing predicted scores on the Adolescent Masculinity in Relationships Scale (AMIRS; Chu, Porche and Tolman 2015) even

after controlling for respondents' sexual orientation. The second found sports viewing to be a significant predictor of both the AMIRS and the Conformity to Masculine Norm Inventory (CMNI; Parent and Moradi 2009) and reality television viewing as well as men's magazine reading to predict scores on the CNMI, as well. Scharrer and Blackburn (2017) found viewing sitcoms, reality TV, sports, and police programs predicted scores on the Male Role Norms Inventory-Revised (Levant, Rankin, Williams, Hasan and Smalley 2010) among emerging adult men and women. From these prior studies, therefore, we have reason to believe that media can help shape conceptions of the norms, beliefs, and values associated with masculinity.

To the best of our knowledge, however, no prior study tests whether amount of time spent playing video games in general or playing particular genres of video games may predict conceptions of masculinity. The current study will address this gap by extending to the medium of video games the prior research that shows the ability of amount of time spent with television, magazines, and movies to predict endorsement of particular forms of masculine gender roles and norms. Cultivation theorists Morgan, Shanahan and Signorielli (2015) have noted, "to the extent that media such as video games are now narrative devices, even given their 'open' narratives, cultivation is a reasonable possibility to bring to bear" (p. 686). For cultivation to be applied to video games, the medium must meet the basic assumptions of the theory: the presence of identifiable consistent systems of messages (which we will discuss in the next section), and regular, voluntary long-term exposure by its users.

Regarding the second assumption, the use of video games by both men and women is on the rise: 67% of U.S. households own a device used to play games (ESA 2017) and one-third of Americans indicate they play games on a given day (Pew 2012). Nielsen data indicate that the average U.S. adult television viewer spends close to five hours a day with television, whereas the

average game player spends only 50 minutes on game consoles daily (Nielsen 2015). Yet, this gap is smaller for teenagers, who play games on average for one hour and 21 minutes each day (Common Sense Media 2015). Players of massive multiplayer online role playing games (MMOs) have particularly heavy use, reporting weekly averages exceeding 20 hours (Griffiths, Davies and Chappell 2003) and up to 60 to 80 hours per week (Williams 2006).

Video game industry statistics suggest the gender gap in playing has begun to close (ESA 2017). Yet there is still indication that those who identify as male spend more time playing than those who identify as female do, in both adolescent and adult samples (ESA 2017; Rehbein, Staudt, Hanslmaier and Kleim 2016). There is also evidence that the popularity of particular game genres differs by gender. Games that frequently feature violence, for instance, tend to be enjoyed and played more by men and boys than by women and girls (Hartmann, Möller and Krause 2015; Rehbein et al. 2016), likely due to differing attitudes toward competition (Lucas and Sherry 2004) as well as moral concerns (Hartmann et al. 2015).

Video Games and Gender

Video games have been observed to be a site of heavily stereotyped gender representation according to content analyses of games and their related texts (manuals, covers, advertisements, etc.). Male characters have been found to outnumber female, with observed ratios ranging from 3-to-1 (Burgess, Stermer and Burgess 2011; Near 2013) to more than 5-to-1 (Beasley and Standley 2002; Downs and Smith 2010; Williams, Martins, Consalvo and Ivory 2009). Males have also determined to be more likely to be the central characters whereas female characters are more likely to be relegated to secondary roles (Lynch, Tompkins, van Driel and Fritz 2016; Miller and Summers 2007; Near 2013; Williams et al. 2009). A game's playable avatar was also

found to be more likely to be male than female (Haninger and Thompson 2004; Miller and Summers 2007).

Content analysis research has shown further that female characters are consistently portrayed as dressing and behaving in a sexual fashion (Beasley and Standley 2002; Downs and Smith 2010; Haninger and Thompson 2004; Miller and Summers 2007; Scharrer 2004), with unrealistically thin and/or sexualized bodies (Downs and Smith 2010; Martins, Williams, Harrison and Ratan 2009; Miller and Summers 2007). The degree to which this depiction has changed over time is up for debate. A content analysis of 571 games circulating from 1983 to 2014 found that sexualization of female characters peaked in the 1990s and has since declined (Lynch et al. 2016). Yet, an analysis of video game magazines from 1988 to 2007 indicated that sexualized images of female game characters have risen while the "damsel in distress" trope has appeared less frequently (Summers and Miller 2014). Sales data show that the appearance of sexualized women on video game covers is correlated with total game sales (Near 2013).

Male characters are typically depicted as heavily, even unnaturally, muscular (Burgess et al. 2011; Miller and Summers 2007; Scharrer 2004), although one analysis found that increasingly photorealistic portrayals in games are leading to more realistic, if still somewhat idealized, renderings of male physiques (Martins, Williams, Ratan and Harrison 2011). Video games have also been found to be a highly heteronormative space, and while queer representation is increasing in independent games and a few mainstream titles, male characters are typically presented as implicitly or explicitly heterosexual (Shaw 2009; Shaw and Friesem 2016). Male characters have also been found to display hypermasculine characteristics, including toughness, stoicism, and in particular, aggression (Burgess et al. 2011; Miller and Summers 2007; Scharrer 2004).

Despite these patterns, games are not monolithic in their content, and, in fact, numerous schema have been proposed to understand different genres (Newman 2013; Wolf 2001), such as the commonly invoked division between casual and hardcore video games (Juul 2010; Manero, Torrente, Friere and Fernandez-Manjon 2016). While the distinction is somewhat imprecise, the generally accepted understanding is that a casual game is "easy to learn, simple to play and offers quick rewards with forgiving gameplay… connected with non-violent content… with various sub-genres like puzzle, Mah-Jong, word, casual-action and card & board games" (Kuittinen, Kultima, Niemelä and Paavilainen 2007, p. 106). Hardcore games are defined in opposition to casual games, typically as being more complicated, time intensive, and often associated with more violent genres such as shooters, real-time strategy, and role-playing games (Juul 2010; Manero et al. 2016). These categories carry a gendered dimension, with hard-core games being stereotyped as "masculine" (for a review, see Paaßen, Morgenroth and Stratemeyer 2016). Indeed, studies of genre preference and game use have shown that male players tend to express a greater preference for these hardcore action, shooter, and sports games, whereas female players tend to prefer the casual puzzle, card, and social game genres (Scharkow, Festl, Vogelgesang and Quandt 2015; Vermeulen and Van Looy 2016).

The results of numerous content analyses suggest that masculine content tropes—including aggression, violence, and the sexualization of women—are often associated with hardcore genres of action, shooter, and fighting games (Beasley and Standley 2002; Haninger and Thompson 2004; Lynch et al. 2016; Scharrer 2004; Webber, Behr, Tamborini, Ritterfeld and Mathiak 2009). Scharrer (2004) found that advertisements for sports, puzzle, or other uncategorizable games contained less violence than those for the more typically hardcore genres of action and fantasy. Wohn (2011) found that within a sample of casual games, male and female

characters were equally likely to inhabit (stereo)typically masculine personality traits, and, whereas female characters were still more likely to inhabit (stereo)typically feminine traits, more than a third of male characters also displayed some (stereo)typically feminine traits.

Playing Video Games and Gender-related Outcomes

Only a limited number of investigations have explored effects of game play on attitudes relating to gender, and evidence for gaming's overall impact on these beliefs is mixed. Dill, Brown, and Collins (2008) found a simple correlation between exposure to violent video games and increased acceptance of rape myths and of sexual harassment, although these findings did not hold up under statistical controls. Using a sample of 351 adults, Fox and Potocki (2016) found that lifetime video game exposure was correlated with higher estimates of false rape accusations and greater acceptance of rape myths, mediated by hostile sexism and acceptance of interpersonal aggression. Stermer and Burkley (2015) used survey data from 175 undergraduates to find that among male participants, sexist video game play (featuring the "damsel in distress") was linked with viewing women as weaker, purer, and more in need of protection. In what appears to be the only longitudinal video game cultivation study to date, Breuer, Kowert, Festl, and Quandt (2015) investigated sexist attitudes within a sample of 824 German participants. A cross-lagged structural equation model indicated that video game play was not associated with support for male leadership in the home, male leadership in group settings, or female responsibility for housework over the study's two-year period.

As it apparent from this review, very few prior studies have conceptions of masculine roles and norms at the center of the inquiry. In the closest precedent for the current study, Gabbiadini, Riva, Andrighetto, Volpato and Bushman (2016) demonstrated the potential for hardcore games to impact beliefs in masculine norms. In a single-exposure laboratory setting,

participants played a non-violent puzzle game, a violent first-person shooter game, or a violent third-person shooter game with sexist imagery. Those who played the violent-sexist game scored higher on a post-test measure of beliefs in "traditional" masculine norms as measured by a selection of items from the Male Role Norms Inventory-Revised (Levant et al. 2010). Gender and identification moderated the effect, where identification with the avatar of the sexist violent game led to greater endorsement of "traditional" beliefs about masculinity among male participants. Yet, random assignment in the study was made by classroom rather than individual, conflating age and experimental condition (Ferguson and Donnellan 2017).

The current study builds upon this foundation of prior research and theory in a number of ways. It employs survey methodology to study longer-term processes as called for in cultivation theory and thus provides a complement to the Gabbiadini and colleagues (2016) analysis of immediate effects measured in the lab. It joins a small number of prior studies in positioning scores on a standardized measure of endorsement of beliefs about masculine roles and norms as an outcome variable predicted by media use (Gabbiadini et al. 2016; Giaccardi et al. 2016; Scharrer and Blackburn 2017). It examines the role of both gaming in general and violent gaming (a key aspect of "hardcore" gaming) in particular in predicting approval of a particular expression of masculinity—a set of ideals that endorses aggression, dominance, toughness, and control. It uses a national sample of emerging adults, exploring these processes during a life stage critical in the development of views of masculinity and gender (Marcell, Eftim, Sonenstein and Pleck 2011). Finally, it explores the role of respondents' own gender identity in potentially moderating associations between video game playing and endorsing conceptions of masculine roles and norms, thereby using the logic of reinforcing spirals models (Slater 2007, 2015).

Hypotheses

As extended video game exposure could result in the cultivation of attitudes and beliefs (Bilandzic and Busselle 2012; Morgan et al. 2015), and given the extensive research demonstrating that game content privileges male characters over female (Beasley and Standley 2002; Burgess et al. 2011; Downs and Smith 2010; Haninger and Thompson 2004; Lynch et al. 2016; Miller and Summers 2007; Near 2013; Williams et al. 2009) and embodies a traditionally masculine worldview (Beasley and Standley 2002; Burgess et al. 2011; Downs and Smith 2010; Haninger and Thompson 2004; Lynch et al. 2016; Martins et al. 2009; Miller and Summers 2007; Near 2013; Scharrer 2004; Shaw 2009; Shaw and Friesem 2016; Summers and Miller 2014; Martins et al. 2011), we predict:

H1: Total video game exposure will correlate with the endorsement of "traditional" masculine gender roles.

Yet, given the evidence that problematic depictions of gender are highly prevalent, especially, in violent "hardcore" games (Beasley and Standley 2002; Haninger and Thompson 2004; Lynch et al. 2016; Scharrer 2004; Webber et al. 2009; Wohn 2011), we predict:

H2: Violent video game exposure will correlate with the endorsement of "traditional" masculine gender roles.

Cultivation theory accounts for the role of moderating variables in producing differing cultivation effects in subgroups (Morgan et al. 2015), and moderators are key in exploring the mutual reinforcement spiral models combining media selectivity and media effects (Slater 2007). Given the role that gender of the audience member has played in moderating traditional cultivation effects (e.g., Gamble and Nelson 2016) and in impacting game players' beliefs about gender roles and norms (Gabbiadini et al. 2016; Stermer and Burkley 2015), we predict that:

H3: Player gender will moderate correlations between game play and the endorsement of "traditional" masculine gender roles.

Masculinity is a construct that is composed of many different dimensions and characteristics (Levant and Richmond 2007; Levant et al. 2013). It is unclear whether video games in general or violent video games in particular present all aspects of this masculine ideology equally, or whether particular facets of masculinity on display in gaming may be more salient to players. Therefore, and in line with recent suggestions (Gerdes, Alto, Jadaszewski, D'Auria and Levant 2017), we ask:

RQ1a: Which components of "traditional" masculine gender roles most strongly correlate with video game use?

RQ1b: Which components of "traditional" masculine gender roles most strongly correlate with violent video game use?

Method

Participants

To conduct the current survey study, we recruited participants through a national panel aggregated by Qualtrics. Through the service, an invitation to participate in "an online survey on attitudes and social beliefs" was distributed to tens of thousands of potential respondents. A quota was set for an equal number of self-identified male and female respondents between the ages of 18 and 25 (to capture the period of emerging adulthood) and with racial and ethnic (Latino/non-Latino) characteristics that parallel the national population. Responses were accepted until a total quota sample of 420 respondents was met. These participants completed a larger survey on masculine norms and media use. Of these 420 respondents, 252 participants identified as regularly players of video games on consoles (e.g. PlayStation), computers (e.g.

Windows PC), handheld consoles (e.g. Nintendo 3DS), browsers (e.g. Facebook) or mobile phones (e.g. iPhone) within the past two years. Six of this subset of participants failed attention checks and were discarded, yielding a final sample size of 246 in this study.

To confirm that the sample size was adequate, a power analysis using G*Power was conducted. Meta-analyses of cultivation studies measuring television's association with beliefs about gender roles have found average effects sizes of .10 to .12 (Morgan and Shanahan 1997; Oppliger 2007). With the current study design, a Bonferroni-corrected α error probability of .005 and a .80 level of power, the power analysis indicated that an effect of that size could be detected with a sample of 188 participants, which the current sample exceeded.

After providing informed consent, respondents completed the survey, beginning with a section containing the masculinity-related measures, followed by distractor items measuring unrelated personality traits, and lastly a section measuring media use and demographics. Participants were provided with a debriefing message following the survey's completion.

In the sample, 69.5% (n = 175) of participants identified as male and 29.7% (n = 73) identified as female. Two (.08%) identified as transgender. Given that there were so few transgender participants, subsequent analyses using gender included just those identifying as male or as female. Participants ranged in age from 18 to 25, with a mean age of 21.59 years (SD = 2.40). When asked to report their sexual orientation, 88.2% of participants reporting they were straight or heterosexual (n = 217), 7.3% bisexual (n = 18), 2.8% gay or lesbian (n = 7), and 1.6% other (n = 4). Race/ethnicity was also measured, with 60.2% reporting White (n = 148), 16.7% Latino or Hispanic (n = 41), 12.6% Black or African American (n = 31), 5.7% Asian or Asian American (n = 14), 4.1% Multi- or biracial (n = 10), and .8% another race not specified (n = 2). Again, this distribution was designed in the sampling process to reflect the U.S. population.

Respondents' highest level of education was measured, with 42.7% reporting some college (*n* = 105), 27.2% high school graduate (*n* = 67), 13.4% Bachelor's or other four-year degree (*n* = 33), 7.7% Associate's or other two-year degree (*n* = 19), 5.3% some high school or less (*n* = 13), and 3.7% a graduate or professional degree past Bachelor's (*n* = 9). The median reported annual household income fell between $50,000 and $59,999 per year, with annual household income distributed widely across each of the options that ranged from under $10,000 a year (reported by 6.5% of the sample) to over $150,000 (2.8%). 10.6% of the sample reported they did not know their total household income (*n* = 26). Regions of residence were recorded, as well, and the data showed broad distribution across the United States.

Measures

Masculine gender roles. To measure belief in "traditional" masculine gender roles, the Masculine Roles Norms Inventory-Revised (MRNI-R) (Levant et al. 2007) was utilized, as had been the case in the closest prior study on the topic conducted by Gabbadiani and colleagues (2016). The MRNI-R is a psychometrically validated index (Levant et al. 2010) comprised of 39 items, measured from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating stronger endorsement of a number of aspects of "traditional" masculine gender norms and roles. The index contains seven components or subscales, including Avoidance of Femininity (e.g., "Boys should play with action figures not dolls;" "Men should not wear cover-up, make-up, or bronzer."); Negativity Toward Sexual Minorities (see below); Toughness (e.g., "I think a young man should try to be physically tough, even if he's not big;" "It is important for a man to take risks, even if he might get hurt."); Dominance ("A man should always be the boss;" "Men should provide the discipline in the family."); Importance of Sex ("Men should always like to have sex;" "A man should always be ready for sex."); Restrictive Emotionality (e.g., "A man should not

react when other people cry;" "Fathers should teach their sons to mask fear."), and Self-Reliance (e.g., "Men should have home improvement skills;" "A man should know how to repair his car if it should break down."). An average of the seven MRNI-R components, weighted by number of items, was used to measure the MRNI-R as a whole. See Table 1 for the Cronbach's alpha scores for the MRNI-R as well as for each component.

The wording for the Negativity Toward Sexual Minorities items was modified slightly to omit the term "homosexuals," which can carry a pejorative connotation and fails to adequately distinguish between gay men and lesbian women (Chonody 2013). As attitudes toward gay men and lesbians can exist as separate constructs (Herek 2002), the ambiguity in the original wording could diminish the validity of a measure of masculine norms. To address this issue, we replaced the term "homosexual" with "gay" or "gay man" in all relevant items (five of the eight items; e.g., "Gay men should never kiss in public." rather than "Homosexuals should never kiss in public."). In a sixth item we added the modifier "male" when referencing a hypothetical public figure (i.e., "It is disappointing to learn that a famous male athlete is gay." rather than "It is disappointing to learn that a famous athlete is gay.").

The MRNI-R items, however, do not have a strong emphasis on proclivity toward physical aggression as a potential component of "traditional" masculine gender role norms. Given the importance of the potential association between gaming and conceiving of masculinity as including a propensity toward aggression, we also used five items from the Auburn Differential Masculinity Index's (ADMI) Aggression and Dominance subscale (Burk, Burkhart and Sikorski 2004). The response options for the ADMI items were modified from the original to measure respondents' perceptions of norms rather than their own adherence to such norms. Rather than using response options on a 5-point scale that ranged from "not at all like me" to

"very much like me" as was the case in the original, in the current study responses ranged from 1 "strongly disagree" to 7 "strongly agree." Sample items include, "Sometimes a man's got to fight or people will walk all over him;" and "It's OK for a man to use physical violence to defend what he has." See Table 1 for the Cronbach's alpha score for the Aggression items of the ADMI.

Video game exposure. Overall video game exposure was measured by asking respondents the number of hours they spent playing video games on an average day for each of the seven days of the week. This approach was a slight variation from Van Mierlo and Van den Bulck (2004) who used these items and also asked for number of days per month spent playing. In the current study, we dropped the per month item due to its potential for recall bias. To account for multiple platforms in an effort to measure gaming comprehensively (Williams et al. 2009), video game playing was defined for participants as gaming on consoles, computers, hand-held devices, browsers and mobile devices. The responses to these seven items were averaged to create a measure of daily video game exposure.

Violent video game exposure was measured in the same manner used by Anderson and Dill (2000). First, participants were asked to list their three favorite games played in the last year. If participants did not have three favorite games, they were permitted to leave these answers blank. Next, for each game listed, participants ranked how often they played this game on a seven-point scale, anchored by 1) "rarely" and 7) "often." They also rated the amount of violence contained in the game on a seven-point scale, from 1) "Little or no violent content" to 7) "Extreme violent content." These two items (frequency of play and violence) were multiplied to form an exposure score for each favorite game. The average of the scores for the participants' three favorite games was used as a measure of violent video game exposure. The self-report of violent content in favorite games has been found to perform well on test-retest reliability and

construct validity (Fikkers, Piotrowski and Valkenburg 2017).

Results

Correlation and regression analyses

First, a Pearson's correlation matrix was produced to explore bivariate relationships. Overall amount of time spent playing video games was correlated with amount of time spent playing violent games, in particular, as might be expected, $r = .26$, $p < .001$. Those who were more frequent players of video games, therefore, were also more likely to have self-described violent games among their favorites. Overall amount of time spent playing video games was not associated with endorsement of "traditional" masculine gender role norms, as measured by the full MRNI-R index, $r = .07$, *ns*, thereby providing initial evidence in refutation of H1. On the other hand, amount of time spent with self-described violent games, in particular, was correlated with scores on the MRNI-R, $r = .18$, $p = .005$, providing preliminary support for H2.

When the individual components were examined separately and the aggression and dominance component of the Auburn Differential Masculinity Index (ADMI) was added to the analysis, overall amount of time spent with video games was found to correlate with just one of the 8 individual beliefs about masculinity, a positive correlation with the Aggression and Dominance component of the ADMI, $r = .15$, $p = .02$. On the other hand, time spent with self-described violent games correlated with all but two of the individual components. As seen in Table 1, this type of gaming was positively associated with the belief that masculinity should include Aggression, Dominance, Toughness, Importance of Sex, Anti-feminine Attitudes, and Restrictive Emotionality. The only components not correlated with time spent with violent games were Negativity Toward Sexual Minorities and Self-Reliance. Thus, there is much more preliminary support for H2 than for H1.

Hierarchical linear regression was used to further test the hypothesized relationships under the presence of multiple control variables. Dummy variables were created for gender identification (1 = male, 0 = all others), race (1 = White, 0 = respondents of color), and sexual orientation (1 = heterosexual/straight, 0 = all others). These variables, as well as household income and education, were included in the first block as demographic controls. Average daily video game use was placed in the second block, and amount of exposure to self-described violent video games was placed in the third. Finally, an interaction term created by multiplying the gender identification variable with the self-described violent video game exposure variable was placed in the final block to test for the ability of respondents' gender identity to moderate the relationship between violent video game play and the dependent variables.

The respondents' MRNI-R score was used as the first dependent variable. Results for this model are reported in Table 2. The first step, containing the demographic variables, explained a substantial amount of the variance ($R^2 = .24$, $p < .001$). Gender and sexual orientation were each found to be significant predictors of the MRNI-R score, with men and heterosexual/straight respondents showing stronger endorsement of "traditional" masculine roles and norms, whereas race, income, and education did not reach statistical significance. In the second block, adding daily video game play did not improve the fit of the model, meaning H1 was not supported. In the third block, adding self-described violent video game exposure to the model did improve its fit ($R^2 = .25$, $p = .05$), providing support for H2. In the final block, entering the interaction term did not improve model fit, indicating no evidence for a moderating role of gender identity on the relationship between self-described violent video game exposure and MRNI-R scores. Thus, H3 was not supported. The first regression analysis, therefore, suggests that violent video game use,

rather than overall video game use, is associated with endorsement of “traditional” masculine gender roles among both the men and the women in the sample.

The research questions asked which elements of "traditional" masculine ideologies most strongly correlated with video game use or violent video game use. To assess this, a series of hierarchical linear regressions was computed, using each component of the MRNI-R and the Aggression and Dominance subscale of the ADMI as the outcome variable, respectively. Results that test predictors of the Aggression and Dominance subscale of the ADMI appear in Table 3. Once again, demographic variables explain a significant amount of variance ($R^2 = .29$, $p < .001$), with men in the sample, heterosexual respondents, and respondents with lower levels of income reporting more endorsement of this aspect of masculine gender roles and norms. In the second step, adding daily video game use did not add significantly to the variance in the ADMI items. In the third step, however, adding self-described violent video game use to the model improved the fit, $R^2 = .30$, $p = .05$. Finally, adding the interaction term between gender of respondent and violent video game exposure in the fourth and final step did not improve the fit of the model.

The same pattern occurs for the Dominance, Toughness, and Restrictive Emotionality subscales of the MRNI-R (see Tables 4-6 for regression results). In each of these models, in step one, demographic variables—particularly gender and sexual orientation—were positive predictors. Adding amount of daily video game use to the model in step two fails to improve the fit in each of these cases. Yet, in step three, adding amount of time spent with violent video games does improve the model’s fit for explaining variance in Dominance ($R^2 = .23$, $p = .05$), Toughness ($R^2 = .22$, $p = .03$), and Restrictive Emotionality ($R^2 = .23$, $p = .03$), respectively. In each of these cases, the final step that explores the impact of the interaction between gender and amount of time spent with violent video games does not improve the model further.

For the Self-Reliance, Avoidance of Femininity, Negativity Toward Sexual Minorities, and Importance of Sex components of the MRNI-R, none of the video game-related variables were significant predictors and none of the steps containing those variables added significantly to the variance in these dependent measures in the regression analyses.

In response to RQ1a, therefore, overall amount of video game use appears to be unrelated to endorsement of "traditional" masculine gender roles under the presence of demographic controls. Yet, in response to RQ1b, amount of time spent playing self-described violent games was a significant predictor of endorsement of particular "traditional" masculine gender roles, even amid controls and regardless of respondents' own gender identity.

Discussion

In this study of emerging adults from across the United States, we find that use of self-described violent video games, in particular, rather than overall amount of time spent playing video games stands out for its ability to predict endorsement of "traditional" masculine gender roles and norms. Indeed, in the present results, amount of time spent playing games that the respondents themselves described as violent predicted beliefs that masculinity should entail aggression, toughness, dominance, and restrictive emotionality but not that masculinity should entail negativity toward sexual minorities, self-reliance, avoidance of femininity, or the importance of sex. Interestingly, the gender identity of the respondent did not moderate any of these relationships, suggesting that the ability of violent games to cultivate these conceptions of masculinity occurred consistently for the men and the women in the sample.

As video games have evolved, their narratives have grown in complexity, with the medium now having the potential to fulfill a storytelling role in many players' lives, as television has done for many decades (Morgan et al. 2015). With gaming occupying wide swaths of time

and with character development and game narratives capturing players' attention, cultivation theory is increasingly being applied to explore the ways in which gaming can shape views of the social world. During emerging adulthood, particularly from ages 18 to 25, beliefs regarding masculinity and gender in general take hold (Marcell et al. 2011), and gaming is especially popular during this time, as well (ESA 2017). This study provides preliminary data to suggest that the stories told by games correspond with some of the beliefs that emerging adults hold about how masculinity should be performed.

Yet, just as the television landscape has become increasingly fractured to cater to a diversity of audience preferences, the video game landscape is similarly complex and multifaceted (Newman 2013; Wolf 2001). The current findings support the notion that different types of video game content operate differently in relationships with players' belief systems. Our data join that of others in largely failing to find support for overall amount of game playing predicting outcomes (Breuer et al. 2015; Van Mierlo and Van den Bulck 2004), rather finding that specific forms of video game exposure lead to more robust results (Dill et al. 2008; Fox and Potocki 2016; Stermer and Burkley 2015; Williams 2006). Similar to genre-specific cultivation theory stemming from television, therefore, genres of games appear to have the ability to promote relatively consistent message systems that players take in from cumulative, long-term exposure and use to develop beliefs about the social world (Bilandzic and Busselle 2012).

Just as game content and genres are multidimensional, conceptions of masculinity are similarly complex (Connell 2005; Kimmel 1987; Levant and Richmond 2007). In the present results, under presence of controls, only some of the individual components of the MRNI-R measure were shown to be partially explained by amount of use of games with violence. The pattern in which self-described violent gaming predicted beliefs that masculinity should entail

aggression, toughness, dominance, and restrictive emotionality follows fairly closely with the content analysis research that shows male game characters frequently presented as muscular, physically dominant, and as engaged in aggression (Burgess et al. 2011; Martins et al. 2011; Miller and Summers 2007; Scharrer 2004) and that violent and/or "hardcore" games contain stereotypes regarding masculinity (Beasley and Standley 2002; Haninger and Thompson 2004; Lynch et al. 2016; Scharrer 2004; Webber et al. 2009; Wohn 2011). For the most part, the beliefs about masculine gender role norms that were *not* predicted by time spent playing violent games have to do with traits and characteristics not yet analyzed in game content research (like self-reliance, avoidance of femininity, or the importance of sex) which may indicate that they are not as common in the narratives or other content features of games.

The one exception and perhaps the most surprising result has to do with the negativity toward sexual minorities component. Prior analyses had shown that most widely circulating games assume or explicitly depict heterosexuality among game characters (Shaw 2009; Shaw and Friesem 2016). In our study, therefore, we expected to find an association between playing games in general or violent games in particular and beliefs about masculinity that are negatively biased against gay men. Perhaps the explanation for the lack of such an association in the present data is that the depiction of heterosexual males as the default category for game characters was not as vivid or as impactful (and therefore not as likely to shape views) as explicit stereotypes or negative portrayals of gay male characters would have been.

The reinforcing spirals model that examines individual differences in media selection side by side with media influence "draws from social identity theory (Tajfel and Turner, 1986), suggesting that media use in contemporary society is a principal means by which such social and personal identities are maintained" (Slater 2015, p. 371). Prior research had found that games

that frequently feature violence tend to be played and enjoyed more by male than by female players (Hartmann et al. 2015; Lucas and Sherry 2004; Rehbein et al. 2016), thereby suggesting gender is a salient social identity variable in the phenomenon we have studied. Further, in the closest parallel to the current study in the existing literature, Gabbiadini and colleagues (2016) found that playing a violent and sexist game in the lab led to endorsement of "traditional" masculine norms only among males who showed identification with the main character. There was ample reason to expect that the gender identity of the respondent would moderate the relationships between video gaming and conceptions of masculinity in the present study.

Despite these prior patterns, however, the data from the current study find that the associations between frequency of playing video games self-described as containing violence and beliefs that masculinity should entail aggression, toughness, dominance and restrictive emotionality were consistent across gender of respondent. The divergence from the Gabbadini and colleagues (2016) data may be explained by the wide range of games that formed the basis of the current violent game measure compared to the single stimulus used in that prior study. In the present study, the use of the favorite games technique to derive the measure for exposure to violent games helps ensure ecological validity, as respondents themselves listed the games that had commanded time and attention in their own day-to-day lives. As cultivation theory would predict, perhaps the storytelling features of the narratives in the range of favorite games with violence listed by respondents were sufficiently consistent as to shape the views of men and women players similarly.

Limitations and Future Research Directions

There are a number of limitations to the current study to consider when interpreting its results. First and foremost, given its reliance on cross-sectional survey research design, no claims

can be made about causality. It is just as likely that holding beliefs that result in high scores on the Masculine Roles Norms Index-Revised (MRNI-R) explains exposure to self-described violent video games as that self-described violent video game exposure explains scores on the MRNI-R. Although the associations found between violent game playing and the dominance, toughness, aggression, and restrictive emotionality components of the MRNI-R hold under demographic controls and cultivation theory is a logical explanation, the variance explained is modest and the causal direction remains unknown. Second, although there are many merits to the sample chosen for the study—its focus on emerging adults, reach across the United States, and racial and ethnic composition that parallels national Census statistics—it is not truly a representative sample and therefore the ability to generalize is limited. Next, although we used measures and means derived from the literature and tested for reliability and validity (Fikkers et al. 2017), it is difficult to measure amount of time spent playing video games accurately given various response biases. Indeed, given the interactive and dynamic nature of game content, equivalent amounts of playing time across the sample do not necessarily mean equivalent exposures to messages about gender and masculinity (Lachlan and Maloney 2008; Schmierbach 2009), which further complicates the phenomenon we have explored.

Individuals' beliefs about masculinity are complex, as well, and the MRNI-R is likely to have only captured part of that complexity. Indeed, we placed quotes around the word "traditional" in our study to signify that as a potentially contested term, since one might logically ask, traditional for whom or in what context? Perhaps most importantly, conceptions of masculinity can vary both across and within subgroups and various cultural contexts. In our sample, for instance, although we measured race and Latino ethnicity, we were not able to distinguish between those identifying as Cuban American compared to Mexican American or

those identifying as Caribbean compared to those identifying as African American. Finally, we did make minor adjustments to the wording and/or to the response options for the items we chose to measure endorsement of particular masculine gender roles, as well, which may have threatened the reliability of those scales.

Future research on this topic should attempt to parse the causal sequence of the variables examined here by employing longitudinal survey design. It should also further refine video game use categories and combine that data with new content analysis research in an attempt to better isolate what messages about masculinity, in particular, players of different games may be receiving. It should explore conceptions of masculine gender roles and norms within as well as across particular communities and groups of individuals, better capturing the complexity and potential variation of cultural understandings of gender. Finally, in order to increase confidence in the claim that violent games can help predict views of masculine gender roles and norms among those who identify across the gender spectrum, future research should attempt to replicate the current pattern in which gender of respondent failed to moderate the key relationships tested.

Practice Implications

Despite these limitations, however, the study at hand has a number of implications for industry professionals, activists and policy makers, as well as for young adults and everyday citizens at large. Industry professionals who create games should write in a wider range of depictions across gender so that more female characters appear and have agency and power in video games, but also so that a broader spectrum of expressions of masculinity would be available for players to encounter, as well. If players are looking to games, consciously or otherwise, to help learn what is normative, socially acceptable, and even likely to be admired regarding the performance of masculinity, then game creators have a responsibility to vary the

roles and actions taken up by male characters and avatars in games to better reflect the breadth of performances of gender among those in the real world. As games' narratives evolve toward greater sophistication in storytelling, having a wider range of emotional expression, such as sadness or tenderness or love, exhibited by males in game content would be a positive change, as would having males in games occasionally demur instead of dominate and pursue non-violent resolutions to conflict rather than turn to aggression.

Activists and cultural critics can use the results of this study to strengthen their push toward more diversity of roles and opportunities with games' casts of characters and avatar options. Knowing that time spent with violent games, in particular, has the potential to predict narrow views of masculinity that align in important ways with messages that have been described as "toxic" gives additional support of the mission of cultural critics and non-profit organizations actively involved in a push to reform and reimagine games.

Finally, video game players themselves should think carefully and critically about the messages about gender that games may be sending through the characters that appear, the way those characters look, and the manner in which those characters act as well as interact with others. Given that emerging adults are honing their views of gender and their concepts of themselves, approaching video games with a media literacy lens can inspire a critique or a questioning of the values present in games during a critical time in one's development. Rather than writing off games and gaming as only entertainment or fantasy-based and therefore having no bearing on one's own life, a media literacy approach to media of any sort encourages deep analysis of and reflection on the stories reaching millions through the media.

Conclusion

There are very few quantitative accounts of the ways in which individuals' understandings of masculinity may be associated with and even perhaps partially formed by the video games that they play. Thus, the findings of this study explore a relatively understudied topic that is of strong social significance, given the popularity of video gaming and its claim on players' time. The data drawn here from a racially and ethnically diverse sample of emerging adults from across the United States point tentatively to the ability of particular types of video games—those that respondents themselves listed as favorites and rated as violent—to help cultivate beliefs about masculinity. In a context in which gaming continues to be a major economic and social force and in which masculinity is being imagined and reimagined as gender roles evolve, these data provide a preliminary foundation on which further inquiries into this topic can build.

If individuals are, indeed, learning from society that "manliness is about having power over others" (Black 2018), researchers, parents, policymakers, activists, and media content creators should ask themselves in what locations that message about masculinity resides. From the present study, it appears that perhaps video games that contain violence are one place where limited, stereotypical, and "hegemonic" roles and norms associated with masculinity take shape. Given the potential of this view of masculinity for the marginalization of others (Connell and Messerschmidt 2005) and for a number of risky psychological and physiological outcomes (Levant and Richmond 2007), the topic of media and masculinity is worthy of continued research.

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Table 1. Pearson's correlation coefficients for overall amount of time spent playing video games, time spent with self-described violent games, and endorsement of "traditional" masculine gender role norms.

Variables	Means (*SD*)	Cronbach's α	Correlations										
			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Overall time spent gaming	1.97 (2.65)		--	.26***	.07	.15*	.04	.05	.08	.02	.08	.07	.10
2. Time spent with self-described violent games	9.95 (13.48)			--	.18**	.21**	.17**	.19**	.15*	.16*	.08	.13	.20**
3. MRNI-R	3.32 (1.23)	.98			--	.76***	.92***	.85***	.85***	.91***	.76**	.78***	.85***
4. Aggression	4.07 (1.38)	.84				--	.65***	.77***	.64***	.68***	.47***	.66***	.62***
5. Dominance	3.01 (1.46)	.93					--	.73***	.78***	.80***	.68***	.66***	.79***
6. Toughness	4.33 (1.40)	.83						--	.66***	.72***	.49***	.73***	.70***
7. Importance of sex	3.01 (1.59)	.87							--	.71***	.56***	.58***	.71***
8. Avoidance of femininity	3.23 (1.58)	.93								--	.72***	.66***	.77***
9. Negativity toward sexual minorities	2.41 (1.61)	.95									--	.43***	.59***
10. Self-reliance	4.49 (1.49)	.90										--	.53***

11. Restrictive emotionality	2.73 (1.29)	.90	--

*$p < .05$, **$p < .01$, ***$p < .001$

Note: MRNI-R = full index of Masculine Gender Role Norms- Revised (MRNI-R); A = Aggression and Dominance (Individual component from the ADMI); Individual components from the MRNI-R: D = Dominance, T = Toughness, IS = Importance of Sex, AF = Avoidance of Femininity, NSM = Negativity Toward Sexual Minorities, SR = Self-Reliance, RE = Restrictive Emotionality.

Table 2. Hierarchical regression analysis predicting endorsement of "traditional" masculine gender norms as measured by the MRNI-R weighted average.

	Step 1			Step 2			Step 3			Step 4		
Variables	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*
Gender	.36	1.00	6.19***	.36	1.01	6.02***	.34	.96	5.63***	.34	.95	3.85***
Sexual orientation	.24	.97	4.20***	.24	.97	4.17***	.25	.98	4.26***	.25	.98	4.25***
Race	-.06	-.17	-1.12	-.06	-.17	-1.11	-.07	-.19	-1.27	-.07	-.19	-1.26
Income	-.06	-.02	-1.07	-.06	-.02	-1.09	-.06	-.02	-1.10	-.06	-.02	-1.09
Education	.11	.11	1.85	.10	.11	1.81	.10	.11	1.82	.10	.11	1.81
Avg. Daily Video Game Use				-.02	-.01	-.28	-.04	-.02	-.69	-.04	-.02	-.68
Violent Video Game Use							.12	.01	1.99*	.12	.01	.98
Gender*Violent Video Game Use										.00	.00	.03
F	14.82***			12.32***			11.25***			9.80***		
df	5			6			7			8		

df_{error}	240	239	238	237
R^2	.24	.24	.25	.25
ΔR^2		.00	.01*	.00

Note: Gender: Female = 0, Male = 1, Sexual orientation: Gay/Lesbian/Bisexual = 0, Heterosexual/Straight =1, Race: Respondents of Color = 0, White respondents = 1

Table 3. Hierarchical regression analysis showing predictors of endorsement of the Aggression and Dominance component of the ADMI.

	Step 1			Step 2			Step 3			Step 4		
Variables	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*
Gender	.46	1.40	8.33***	.46	1.39	7.92***	.44	1.33	7.51***	.52	1.59	6.37***
Sexual orientation	.17	.75	3.13**	.17	.76	3.13**	.18	.77	3.22**	.18	.77	3.21**
Race	-.05	-.13	-.81	-.05	-.13	-.82	-.05	-.15	-.98	-.05	-.14	-.89
Income	-.13	-.04	-2.32*	-.13	-.04	-2.28*	-.13	-.04	-2.30*	-.12	-.04	-2.21*
Education	.02	.03	.44	.03	.03	.46	.03	.03	.46	.03	.03	.53
Avg. Daily Video Game Use				.02	.01	.29	-.01	-.00	-.13	.18	.09	1.27
Violent Video Game Use							.12	.01	1.99*	.11	.01	1.97*
Gender*Violent Video Game Use										-.23	-.11	-1.46
F	19.71***			16.38***			14.76***			13.25***		
df	5			6			7			8		

df_{error}	240	239	238	237
R^2	.29	.29	.30	.31
ΔR^2		.00	.01*	.01

Note: Gender: Female = 0, Male = 1, Sexual orientation: Gay/Lesbian/Bisexual = 0, Heterosexual/Straight =1, Race: Respondents of Color = 0, White respondents = 1

Table 4. Hierarchical regression analysis showing predictors of endorsement of the Dominance component of the MRNI-R.

	Step 1			Step 2			Step 3			Step 4		
Variables	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*
Gender	.33	1.08	5.72***	.35	1.12	5.70***	.33	1.06	5.31***	.37	1.20	4.25***
Sexual orientation	.24	1.10	4.07***	.24	1.09	4.02***	.24	1.11	4.11***	.24	1.11	4.10***
Race	-.06	-.19	-1.10	-.06	-.19	-1.07	-.07	-.22	-1.23	-.07	-.21	-1.18
Income	-.03	-.01	-.59	-.04	-.01	-.65	-.04	-.01	-.65	-.04	-.01	-.61
Education	.10	.12	1.69	.09	.12	1.60	.09	.12	1.61	.10	.12	1.64
Avg. Daily Video Game Use				-.05	-.02	-.74	-.07	-.04	-1.14	.02	.01	.15
Violent Video Game Use							.12	.01	1.97*	.11	.01	1.74
Gender*Violent Video Game Use										-.12	-.06	-.70
F	12.85***			10.78***			9.90***			8.71***		
df	5			6			7			8		
df_{error}	240			239			238			237		
R^2	.21			.21			.22			.23		

ΔR^2	.00	.02*	.01

Note: Gender: Female = 0, Male = 1, Sexual orientation: Gay/Lesbian/Bisexual = 0, Heterosexual/Straight =1, Race: Respondents of Color = 0, White respondents = 1

Table 5. Hierarchical regression analysis showing predictors of endorsement of the Toughness component of the MRNI-R.

	Step 1			Step 2			Step 3			Step 4		
Variables	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*
Gender	.35	1.08	5.95***	.36	1.11	5.87***	.34	1.04	5.45***	.45	1.40	5.23***
Sexual orientation	.19	.83	3.19**	.19	.82	3.16**	.19	.84	3.26**	.19	.84	3.26**
Race	-.05	-.14	-.81	-.05	-.13	-.79	-.06	-.16	-.97	-.05	-.14	-.85
Income	-.04	-.01	-.70	-.04	-.01	-.74	-.04	-.01	-.75	-.04	-.01	-.64
Education	.14	.16	2.34*	.13	.16	2.27*	.13	.16	2.29*	.14	.16	2.39*
Avg. Daily Video Game Use				-.03	-.02	-.56	-.06	-.03	-1.01	.19	.09	1.30
Violent Video Game Use							.13	.01	2.19*	.10	.01	1.68
Gender*Violent Video Game Use										-.32	-.15	-1.91
F	12.38***			10.34***			9.69***			9.03***		
df	5			6			7			8		
df_{error}	240			239			238			237		

R^2	.21	.21	.22	.23
ΔR^2		.00	.02*	.01

Note: Gender: Female = 0, Male = 1, Sexual orientation: Gay/Lesbian/Bisexual = 0, Heterosexual/Straight =1, Race: Respondents of Color = 0, White respondents = 1

Table 6. Hierarchical regression analysis showing predictors of endorsement of the Restrictive Emotionality component of the MRNI-R.

	Step 1			Step 2			Step 3			Step 4		
Variables	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*	*β*	b	*t*
Gender	.38	1.11	6.48***	.38	1.10	6.20***	.35	1.04	5.78***	.47	1.37	5.43***
Sexual orientation	.16	.66	2.72**	.16	.67	2.72**	.16	.68	2.82**	.16	.68	2.81**
Race	-.07	-.20	-1.24	-.07	-.20	-1.24	-.08	-.23	-1.42	-.058	-.21	-1.30
Income	-.07	-.02	-1.13	-.07	-.02	-1.12	-.07	-.02	-1.13	-.06	-.02	-1.03
Education	.12	.14	2.16*	.13	.14	2.15*	.12	.14	2.16*	.13	.15	2.26*
Avg. Daily Video Game Use				.00	.00	.05	-.03	-.01	-.41	.22	.10	1.52
Violent Video Game Use							.13	.01	2.20*	.11	.01	1.70
Gender*Violent Video Game Use										-.31	-.14	-1.86
F	13.11***			10.88***			10.17***			9.42***		
df	5			6			7			8		
df_{error}	240			239			238			237		

R^2	.21	.21	.23	.24
ΔR^2		.00	.02*	.01

Note: Gender: Female = 0, Male = 1, Sexual orientation: Gay/Lesbian/Bisexual = 0, Heterosexual/Straight =1, Race: Respondents of Color = 0, White respondents = 1