When Virtual Reality Becomes Simply Reality

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Abstract

This paper explores how war-themed video games may impact gamers' perception of modern warfare. The popularity of violent video games such as *Call of Duty* has prompted researchers to investigate the effects that extensive game play may have on consumers. Due to their high potential for psychological influence, enhanced by military involvement and social networking, there is reason to believe that violent, war-themed video games may have psychological effects on gamers that could negatively impact their decisions regarding war and violence.

In a special report featured last year in *The Economist,* Tim Cross says, "Video games will be the fastest-growing and most exciting form of mass media over the coming decade" ("All the world's a game," 2011). The popularity of these war games today shows in their sales. In *Modern Warfare 3,* the latest installment of *Call of Duty* (COD), the combat-themed video game series featuring online interactive game play from the first-person shooter perspective, set a record sales of $750 million in its first five days. Infinity Ward Studio Head (creators of the COD games) said after its release on November 8th, 2011, "It's like a playable action movie" ("Call of," 2009). The rising popularity of violent video games such as COD has prompted researchers to investigate the effects that extensive game play may have on consumers. In a study on the effects of video game violence on adolescents, when asked to rate how much violence they like to have in video games, only 1% of boys and 16% of girls said they preferred to have no violence in their games (Gentile, Lynch, Linder, & Walsh, 2004). Due to their high potential for psychological effects, further enhanced by military involvement and social networking, there is reason to believe that violent, war-themed video games may have psychological effects on gamers that could negatively impact their decisions regarding war and violence.

Recent technological advancements have led the graphic capability of games from their simplistic, cartoonish origin, to intense graphic gore. For example, the COD series juxtaposes the surroundings of on-going wars with documentary footage of past wars, heightening the realism of the

graphic effects (Gentile, et al., 2004). In addition to these effects, researchers suggest that video games cultivate greater interactivity between the game and the audience than other forms of violent media, increasing their potential for psychological effects. When actively participating in the game, for example, gamers are rewarded for aggressive behavior: more enemies killed translate to more points (Andersen & Kurti, 2009). Because gamers actively control their avatars, video games facilitate more participation than other forms of media such as television. In some games, users can even substitute a photo of their own face for the player's, allowing the gamer to better identify with the avatar. Taken together, these factors help create a gaming environment which can have a psychological impact on users.

Researchers have suggested that a variety of factors contribute to the effects of video game play on aggressive behavior in adolescents (Kirsch, 2003). One correlational study found that associations between violent video game play and aggressive behavior were stronger for those who were characteristically more aggressive (Anderson & Bushman, 2001). Other findings suggest that parental involvement in video game habits act as a protective factor. In particular, parental limits to violent video game play appeared negatively correlated with fights and arguments, and positively correlated with school performance (Gentile et al., 2004, p. 20). In an article concerning the effects of violent video games on adolescents, Kirsch suggests that violent video games may primarily impact the aggressive behavior of adolescents who have a certain number of risk factors associated with aggression. Adolescents without these risk factors may face little to no risk of increasing their aggressive behavior by playing violent video games (Kirsch, 2003). If aggressive behavior is the result of the cumulative influence of a variety of factors, video game violence research needs to reflect that the risk of aggression is contextual, dynamic, and continuous (Gentile et al., 2004).

Unfortunately, the number of different variables to consider and the inability to account for variance makes conducting clear and consistent research on the impact of video games difficult. (Whitetaker & Bushman, 2009) For instance, the same study by Gentile, et al. notes that it is "unclear whether these results are due to parents' monitoring or whether they are due to a broader pattern of more involved parenting styles." Furthermore, despite evidence that physical aggression and violent crimes are typically perpetrated by adolescent boys, the effects of violent video games do not vary consistently by gender. Similarly, research assessing the influence of video game violence as a function of personality has yielded inconclusive results.

Researchers have begun to employ new technologies, such as functional magnetic resonance imaging (fMRI), to show that playing violent video games appears to desensitize players to real-life violence, pain, and the suffering of others (Bastian, Jetten & Radke, 2011). Desensitization theory, moreover, suggests that repeated exposure to

violence causes habituation of the initially negative cognitive, emotional, and physiological responses people experience when presented with violent images. In a recent study by Montag, et al. (2012), gamers and non-gamers showed a difference of activity in the lateral prefrontal cortex, indicating that the two groups might differ in the experienced salience of unpleasant stimuli. Specifically, the lower activity of the lateral prefrontal cortex in gamers can be interpreted as a dampening of experienced empathy elicited by the harm of a third person (Montag, et al.).

In another study in which brain activity was measured in those who played a violent game, a reduction in the P3 component of the event-related brain potential to violent images was oberved, indicating physiological desensitization (Engelhardt, Bartholow, Kerr & Bushman, 2011). The results suggest that the brain had mediated the effect of video game content based on subsequent aggressive behavior. Yet, since virtual warfare games with this level of realism are a new advancement, these studies provide some of the first experimental evidence showing a relationship between violence desensitization and increased aggression (Engelhardt et. al., 2011).

Despite efforts to construct unbiased experiments which precisely measure the effects that violent video games have on habitual gamers, some researchers have argued that the psychological effects have been exaggerated to "inflame an existing moral panic rather than inform the populace" (Ferguson, 2010, p. 70). In a 2010 study conducted by Ward on the connection between video games and adolescent fighting, results revealed that with both parametric and nonparametric estimators accounting for more demographic covariates, the video game effects become progressively weaker. The overall link between video games and fighting then becomes modest and not statistically significant, and the remaining positive association appears only for individuals who play 4 or more hours per day (Ward, 2010). Additionally, critics argue that violent crime data does not match the public and scientific concern; for both youth and adults, violent crimes have decreased substantially since video games have increased in popularity (Ferguson, 2010).

Even further toward the other extreme of the debate, evidence suggests that video games may provide a useful platform for educational initiatives. In one recent study, researchers found that a first-person shooter game *Re-Mission* improved self-efficacy, cancer knowledge, and treatment adherence in teen and young adult cancer patients (Ferguson, 2010). In another study, ten days of training on an action game showed to be sufficient playing time to increase the capacity of visual attention, its spatial distribution, and its temporal resolution. This training also led to speeded perceptual processes and better management of several tasks (Green & Baveller, 2003). Reviews of these findings suggest video games can be used as training platforms for physical and mental skills.

Many of the arguments protesting evidence of negative psychological effects from extensive video game play first refute the statistical

significance of previous studies and then suggest that the same gaming structure can be used to increase visual-spatial acuity or as a training tool. However, these refutations of statistical significance usually rely on controlling for the same "confounding variables" whose interplay may be crucial in understanding the influence of extensive game play. Similarly, the argument that video games can be used for education suggests that these games do indeed have an effect on the gamers, whether it is positive or negative (Anderson & Bushman, 2001). Training and education through video games implies their influential nature, and begs for further research of what these effects may be.

In comparison to the amount of research that has been conducted on violent video games' influence on adolescent aggression, military influence over gaming has been given a small amount of attention. Some researchers have touched on the topic of desensitization caused by violent video games, but few have discussed the psychological ramifications that desensitization may have on the perceived realism of violence with respect to war. Furthermore, what is now referred to as the "military entertainment complex" has begun using online social networking to enhance their exposure to a target audience of adolescent men. Consequently, the potential video games have for psychological influence not only applies to games condoned by the military as recruitment tools, but is also facilitated by the formation of social communities around the game.

Since it launched its first official video game recruitment tool, *America's Army,* in 2002, the US Army has utilized video games for recruitment and training tools on the premise that these games do facilitate desensitization. The military entertainment complex is the term now used to describe the increased cooperation between the entertainment industry and the military. Specifically, it refers to the interactions and co-productions between the video game industry and the US Army. Not only is *America's Army* played in a first-person shooter format strikingly similar to COD, but the military has also directly collaborated with Infinity Ward on the latest installments of COD. Furthermore, advertisements featuring Hollywood stars including comedian Jonah Hill (Superbad) and action-man Sam Worthington (Avatar) explicitly mark the clear connection between the military and American entertainment. These games, functioning as recruitment tools, lure adolescent men into the delusion that joining the military will be like engaging in one long game of COD.

The military entertainment complex employs war-themed video games as an active, cost-effective recruitment technology which reduces the complexity of war by blurring the lines between civilian and soldier and relieving killing of its tragic responsibilities (Graham & Shaw, 2010). As a retired Army Major reveals: "We want to reach young people to show them what the Army does, and we're obviously proud of that. We can't reach them if we are over the top with violence and other aspects of war that might not be appropriate" (qtd. in Graham & Shaw, 2010). For

example, the "Death from Above" sequence in *COD: Black Ops* (the fourth installment in the COD series) allows the player to bomb moving targets. Soldiers are heard shouting, "Ooh, that's gotta hurt," "Hot damn!" and "Go ahead, smoke 'em out!" These comments not only downplay the significance of killing another human being, but also emphasize the conception of war as entertainment.

In COD, real videos and pictures from past wars are used as visual cut-ins, combined with complex plots, which mentally blur the distinction between actual warfare and games. For example, in *COD5: World at War,* one scene is a 3-second clip of an assassination by a firing squad of a blindfolded German officer tied to a pole. The graphic clip shows bullets entering the condemned man's chest. One gamer observed, "This scene of a real war merely passes by without a second thought or emotional reaction" (Andersen & Kurti, 2009). These clips pass unnoticed, masked by the ultra-realistic graphics of the rest of the game, and by the game's intricate plot and character development. In *Modern Warfare 3*, the later part of the game focuses on the civil war in Russia, in which a main character, Al-Asad, is found hidden by the Russian "Ultranationalists" and executed by a fellow squad-mate, Captain Price. This violence is justified in the game because Al-Asad is supposedly responsible for detonating a nuclear warhead. Due to its complexity of plot and character development, COD is truly like an action movie (Lewis-Hasteley, 2011). The appeal of war-games as entertainment comes from their disguise of the emotional truth of war in favor of a realistic, complex, and engaging form of entertainment.

Furthermore, the recent establishment of online game play facilities may perpetuate the mentality that war is a game. Players of first-person shooter games can play against and/or in cooperation with other players online. This allows for the development of large online social communities with complex interactions within the game world (Ferguson, 2010). The most recent installment of Call of Duty, *Elite*, is essentially a social network site for gamers. Each gamer may join the Elite club and post a profile of their player statistics. They can then view other players' profiles and form teams called "clans." This social networking structure, similar to Facebook, enables communication, relationship formation, and group conformity, which each compound the influence of violent video games, possibly increasing changes in a gamers' perception of the realism of violence.

Although in the context of COD, this behavior is "only a game," it is also a realistic representation of *modern warfare* as it exists today in the conflicts in the Middle East. Global positioning satellite, computer-based weapons systems, and unmanned aerial vehicles (UAVs) allow for bombs to be deployed at distant locales far from the "carnage" they inflict (Andersen & Kurti, 2009). Consequently, from drones hovering in Pakistan to those in *Modern Warfare 2*, the way that war is known is becoming increasingly playful. A special forces veteran who produced

Army 360, a virtual war-simulation training system for soldiers which shares many qualities with first-person shooter video games, eloquently outlines the significance of a changing perception of violence realism, "You lose an avatar; just reboot the game. In real life, you lose your guy; you've lost your guy. And then you've got to bury him, and then you've got to call his wife" (qtd in Singer, 2010).

The blurring between reality and virtuality makes it difficult to determine whether video games are becoming more like war, or war is becoming more like video games (Graham, 2010). Yet, as modern warfare tactics develop, the moral consequences of violence become no less serious. Thus, the combination between the goals of the multi-million dollar military entertainment complex and the susceptibility video games have for psychological influence deserves exploration of how war-themed video games may impact gamers' perception of modern warfare and its consequences.

References

All the world's a game (2011, December 10). *The Economist,* pp. *3*-5.
    Andersen, R. & Kurti, M. (2009). From 'America's Army' to 'Call of
    Duty': Doing battle with the military entertainment complex.
    Democratic Communiqué, 23(1), 45-65.

Anderson, C.A., & Bushman, B.J. (2001). Effects of violent video games
    on aggressive behavior, aggressive cognition, aggressive affect,
    physiological arousal, and prosocial behavior: A meta-analytic review
    of the scientific literature. *Psychological Science,* 12(5), 353-359.

Bastian, B., Jetten, J., & Radke, H. (2011). Cyber-dehumanization: Violent
    video game play diminishes   our humanity. *Journal of Experimental
    Social Psychology* doi:10.1016/j.jesp.2011.10.009.

Call of Duty: Modern warfare 2 (2009, November 12). *Rolling Stone,* p.
66.

Engelhardt, C.R., Bartholow, B.D., Kerr, G.T., Bushman, B.J. (2011). This
    is your brain on violent video games: Neural desensitization to
    violence predicts increased aggression following violent video game
    exposure. *Journal of Experimental Social Psychology,* 47, 1033-1036.

Ferguson, C. J. (2010). Blazing angels or resident evil? Can violent video
    games be a force for good? *Review of General Psychology, 14*(2), 68-
    81.

Gentile, D. A., Lynch P.J., Linder, J.R., Walsh, D.A. (2004). The effects of
    violent video game habits on adolescent hostility, aggressive
    behaviors, and school performance. *Journal of Adolescence*, 27, 5-22.

Graham, I. & Shaw, R. (2010). Playing war. *Social & Cultural Geography,*
11(8), 790-803.

Green, Shawn C. & Baveller, Daphne (2003). Action video game modifies
    visual selective attention. *Nature*, 423(May 29), 534.

Kirsch, Steven J. (2003). The effects of violent video games on
    adolescents: The overlooked influence of development. *Aggression
    and Violent Behavior*, 8, 377-389.

Lewis-Hasteley, H. (2011, August 8). Violent games might be tasteless,
    but are they dangerous? *New Statesman,* Back Pages.

Montag, C., Weber, B., Trautner, P., Reuter, M. (2012). Does excessive
    play of violent first-person-shooter-video-games dampen activity in
    response to emotional stimuli? *Biological Psychology,* 89, 107-111.

Singer, P. W. (2010). Meet the Sims... and Shoot Them. *Foreign Policy,*
Mar/Apr 2010(178), p1.

Ward, M. R. (2010). Video games and adolescent fighting. *Journal of Law
    and Economics, 53*(3), 611-628.

Whitetaker, J.L. & Bushman, B.J. (2009). A review of the effects of
    violent video games on children and adolescents. *Washington and Lee
    Law Review,* Summer 2009, 66(3), 1033.