Defending the Doomed: Implicit Strategies Concerning Protection of First-Person Shooter Games

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Abstract

Censorship of violent digital games, especially first-person shooter (FPS) games, is broadly discussed between generations. While older people are concerned about possible negative influences of these games, not only players but also nonplayers of the younger net-generation seem to deny any association with real aggressive behavior. Our study aimed at investigating defense mechanisms players and nonplayers use to defend FPS and peers with playing habits. By using a lexical decision task, we found that aggressive concepts are activated by priming the content of FPS but suppressed afterward. Only if participants were instructed to actively suppress aggressive concepts after priming, thought suppression was no longer necessary. Young people still do have negative associations with violent video games. These associations are neglected by implicitly applying defense strategies—independent of own playing habits—to protect this specific hobby, which is common for the net-generation.

Introduction

THE INTENSE PUBLIC debate about the connection between digital video gaming and antisocial behavior seems to cut a roadside ditch between generations. While the older generation is concerned about an increase of aggressive behavior due to these games, the younger tend to deny any negative effects. Especially games with violent content—the so-called violent digital video games—are discussed by older generations to have a negative impact on youth behavior, while the younger ones argue that the term *violent* is completely misleading. They do not connect these games with violence but with positive aspects like fun and joy.

Recent research seems to mirror the controversy. Numerous studies found associations between playing violent digital games and aggression,^{1–3} but quite a number of others failed to do so.^{4–6}

In fact, many journalists, politicians, and some researchers agree that the relationship between violent video games and violent behavior in real life is so obvious that it needs no further research but immediate political or legal action. Supporters of this position often refer to the assailants' playing habits in extreme cases of violence, such as the German school shootings in Erfurt, Emsdetten, and Winnenden—who all had spent much of their time playing violent video games, in particular, first-person shooter (FPS) games.

It does not come as a surprise that digital players and player communities strictly distance themselves from school shootings or any real-life aggressive or violent behavior. They claim that the causalities are imposed by the older generation, who enjoyed different (media) socialization, and who simply “do not know what they are talking about at all.”

What could be seen as a defense mechanism to preserve self-esteem and to avoid stigmatization, however, seemingly finds a much broader basis in the juvenile population. Surprisingly, not only hardcore players but also their peers and other members of the net-generation⁷ who play little or do not play video games at all doubt the causal relation between violence in games and real life. They all grew up as part of a generation seeing digital games as a normal leisure activity, as part of their culture, and as a common practice in their reference group. Even if not playing themselves, there are at least some chums, school mates, or friends who do. Playing or not playing video games thus is not a criterion for inclusion or exclusion, or a matter of in-group or out-group, but a ubiquitous contemporary phenomenon and a matter of personal interests and preferences.

It is, however, questionable whether nonplayers really share the worldview of players in the sense of deeply rooted, experience-based concepts and cognitive structures or whether they only show socially desirable support for their peers. Do the nonplayers defend themselves or the others? Or in other terms: Are nonplayers simply attorneys of their peers or

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is there a private psychological need for defense, because of an established group identity? What is the salient aspect of the self-concept when young people are asked about violent games and aggressive behavior? Is it the personal experience with games, that is, the identity as player or nonplayer, or is it rather the experience with the relevant social group, that is, the identity as a member of the net-generation?

Up to now, these questions did not receive mentionable attention in gaming research, which narrowed its view on the players' community, risking to mistake concepts and cognitive structures typical for a whole generation as characteristics of a sub-group suffering from extensive gaming.

The current study aimed to identify the cognitive structures that govern potential defense reactions of players and nonplayers when confronted with associations between violent games and aggressive/violent behavior. Questionnaire data are not suitable for this purpose as they do not give access to the psychological mechanisms underlying the defense reactions. Consequently, the current study refers to concepts and methodology of experimental priming research.

Theoretical Background

Differences concerning attitudes toward possible negative influences of violent video games can result in different knowledge structures about these games. Knowledge structures can be seen as semantic concepts and corresponding associations between different concepts. These associations are interpreted as cognitive links that are developed by processing two concepts at the same time.^{8,9} Therefore, concepts can be activated by priming related concepts. Priming the concept "violent video games," for instance, via pictures of these games, results in a spreading activation via cognitive links to associated concepts.

Developed concepts and associations can differ concerning individual knowledge and experience.⁹⁻¹¹ Besides, personal experience concepts and association between concepts can also derive from reports of others as media reports. People's understanding of events is massively influenced by presentation of events in the media.^{12,13} The broad discussion about the possible relationship of recent school shootings and violent digital gaming habits is frequently emphasized by media reports.¹⁴ Media reports may influence people who play violent digital games regularly as well as people who lack any experience with these games resulting in the development of stereotypic knowledge about these games, for example, their association with aggression, but real aggressive behavior is socially unacceptable. If the self is affected by this connection between violent video games and aggression, defense processes are required.

In terms of violent video games, Glock and Kneer¹⁵ tested if gaming experience influences the association between violent digital games and aggression. They primed male participants with the concept "first-person-shooter-game" and assessed accessibility of aggressive cognitions via a lexical decision task. They found that players showed higher response latencies for aggressive words after being primed than did nonplayers and the control group without priming. This might have been a defense reaction due to the priming of negative concepts linked to violent video games that are also linked to their self-concept because of their own gaming habits.

Individual affection concerning violent video games might be interpreted not only as being an active player but also as being part of a digital video gaming generation. Recent research has shown that the number of children and young adults who like to play digital video games has massively grown¹⁶ and that they play video games as often as they watch TV.¹⁷ In addition, Griffiths et al.¹⁸ showed for online games that the player stereotype as socially withdrawn young male is misplaced.

Even if young people do not have any digital playing habits, they might have friends who play regularly. These bonds need protection if attacked by negative prejudice; otherwise, friendships and therefore in-group membership is at risk. When confronted with associations between violent video games and aggression, protection and resulting defense strategies might be applied by young adults without any playing experience, due to their affiliation to a specific generation. Therefore, violent digital games and associations to aggression may exist for young adults even if they do not play themselves but may be suppressed to protect their generation.

Research on the success of thought suppression is ambiguous.^{19,20} Many studies have shown that attempting to suppress thoughts results in their increased activation what is known as a rebound effect.²¹ Thought suppression needs motivation and massive cognitive effort that is mediated by personal affection.²² Only if young adults without any playing habits are personally concerned in a negative way when confronted with violent video games, they should apply defense strategies that should result in thought suppression. In this case, priming the concept "violent video games" should activate aggressive concepts that are suppressed due to protection and defense strategies of the specific generation membership.

Activation and proximate suppression regarding negative concepts can be motivated by two different strategies: Persons either try to protect themselves, meaning personal mood, or try to protect the affected concept, namely, violent video games. Players should be motivated to choose the protection of their favorite games since this includes protection of their personal affairs. In contrast, nonplayers might show defense strategies to avoid negative feelings induced by violent video games and not to protect the playing habits of peers.

The following questions arise at this point: (i) Does FPS priming affect players and nonplayers in the same way? (ii) Do players protect their gaming habits by suppressing negative associations? (iii) Do young people without gaming habits suppress aggressive concepts too? Do they initiate defensive strategies concerning their generation or do they simply try to avoid negative feelings induced by violent video games? (iv) If young adults with or without playing experience were actively instructed to suppress aggressive concepts, is there no further need for defensive strategies?

We designed our study to answer these questions. We used screenshots of violent video games instead of playing one to avoid frustration due to excessive demands concerning gaming skills for inexperienced persons. To count for content relevant stimulus material for priming the concept "violent digital video game," screenshots of typical FPSs were chosen. FPSs are seen as the most dangerous violent video games due to their specific first person perspective.

We used response latencies as an implicit measure to investigate our test subjects' concept activation. Participants had to respond to aggressive, neutral words, and nonwords in a lexical decision task.

In sum, we expected the following results concerning response latencies: (i) As thought suppression needs cognitive effort, response latencies should increase for aggressive words in case participants were primed with FPS. (ii) Due to protection of the own net-generation, playing experience should not influence response latencies. Response latencies for aggressive words for nonplayers should not differ from response latencies of players. (iii) If primed with FPS and asked to suppress aggression, response latencies for aggressive words should not differ from any other condition.

Methods

Participants and design

We recruited 80 male participants at the University of Cologne. Half of the participants had playing experience concerning FPS, while the other half had no playing experience with these games. Mean age of players was 23.30 ($SD=3.57$) years and of nonplayers was 24.68 ($SD=3.71$) years. Players played 5.04 hours a day ($SD=6.64$) on average.

A $2 \times 4 \times 2$ mixed design was chosen, combining Playing Experience (player vs. nonplayer) with four Experimental Conditions as between-subject factor (no-suppression = FPS without suppression of aggression vs. suppression = FPS with suppression of aggression vs. no priming = no priming of FPS vs. bicycle = FPS with control task) and each of two Word Type as within subject factor (aggressive vs. neutral words).

The bicycle condition was included to account for the influence of time delay concerning thought suppression. If this condition differs from the no-suppression condition, which has no time delay after priming, differences in response latencies cannot be interpreted in terms of defense strategies but in terms of time effects on thought suppression.

Assessments and Measures

Stimulus materials

Items for Word Type were taken from the Glock and Kneer study. To construct priming material, 96 screenshots from the game *Left for Dead*²³ and 161 screenshots from the game *Call of Duty: Modern Warfare 2*²⁴ were taken. To pretest the resulting 257 pictures for activation of aggressive concepts, we used a 9-point-Self-Assessment-Manikin scale to assess ratings for valence and arousal. Mean age (M) of the 51 male participants was 25.18 ($SD=4.07$). Valence ratings reached an average close to the scale mean, $M=5.34$ ($SD=0.64$). A similar average rating was found for arousal, $M=5.53$ ($SD=0.64$). The 10 screenshots with lowest ratings concerning valence and highest ratings concerning arousal were chosen for experimental priming.

Procedure and dependent variables

Participants in the no-suppression, the bicycle, and the suppression conditions were instructed to watch a series of screenshots taken from a video game. The order of the FPS screenshots was chosen according to the results from our prestudy concerning valence from highest to lowest and ac-

cording to arousal from lowest to highest ratings. On the basis of the IAPS, this procedure induces the activation of aggressive concepts and increases this activation during priming.

After presentation of the 10 screen shots, participants in the suppression condition were requested to write an essay about a person who plays FPS games as free time activity. In their essay they should avoid any negative associations especially aggression. Participants in the bicycle condition were instructed to write an essay about riding a bicycle. This task was chosen to control for the influence of time delay concerning suppression mechanisms.

In the following lexical decision task, all participants had to decide as quickly and accurately as possible if the shown words were German words or not. To prevent effects due to practice, the first four items shown were fixed in place and excluded from further analyses, whereas the following items were presented randomly.

Data preparation

We computed two mean latencies for each participant, one for aggressive and one for neutral words. Before computation of mean latencies, data were checked for extreme outliers: responses were excluded if they deviated more than three standard deviations. Furthermore, we checked data for extremely high error rates. Participants' performance on the lexical decision task was over 95% accurate.

We analyzed the response latencies in milliseconds (ms) using a 2 (Playing Experience: players vs. nonplayers) $\times$ 4 (Experimental Condition: no-suppression vs. suppression vs. no priming vs. bicycle) $\times$ 2 (Word Type: aggressive vs. neutral) mixed ANOVA, with repeated measures on the last factor. The interaction between Experimental Condition and Word Type reached significance: $F(3, 72)=3.98$, $p<0.01$, $\eta^2_p=0.14$ (see Fig. 1 for all means of the experimental conditions).

As assumed, response latencies for aggressive words in the no-suppression condition were slower than in the suppression condition, $t(38)=2.83$, $p<0.007$, $d=1.35$, and than in the no-priming condition, $t(38)=3.40$, $p<0.001$, $d=2.83$. No differences for response latencies for aggressive words between the suppression and the bicycle condition were found, $t(38)=0.38$, not significant (n.s. all $p>0.25$).

According to our assumptions, participants in the no-suppression condition showed higher response latencies for aggressive words than for neutral words, $t(19)=4.09$, $p<0.001$, $d_z=0.91$. The same difference was found in the bicycle condition, $t(19)=3.49$, $p<0.002$, $d_z=0.78$. We did not find any differences concerning aggressive versus neutral words in the no-priming condition, $t(19)=0.97$, n.s., and the suppression condition, $t(19)=1.15$, n.s.

We did not find an interaction effect for Playing Experience with Priming Condition and Word Type, $F(3, 72)=0.40$, n.s. (see Table 1 for all means of players and nonplayers).

Discussion

Young adults—if not playing digital video games themselves—almost all have friends who play as a leisure activity.²⁵ They identify themselves with a computer-using generation and grew up amidst prejudice against this medium. Especially, FPSs are extremely prejudiced so that intense defensive reactions are unsurprising.

FIG. 1. Response latencies for aggressive and neutral words as a function of experimental condition.

We asked if FPS priming affects players and nonplayers in the same way and if young people try to defend their generation's playing habits by suppressing negative associations. By using a lexical decision task, we found that young adults suppressed aggressive concepts when being primed with FPS content. Independent of own playing habits, this defense reaction still occurred. Psychological experimental settings might lead young adults to extreme cautiousness when confronted with FPS content. Our specific instruction to avoid negative associations in the suppression condition lead to relaxation and confidence that our study might not aim to investigate negative consequences of video games, especially violent ones.

Interestingly, young adults with and without playing experience suppressed aggressive concepts in an implicit way. Implicit reactions indicate internalized processes. For players, this effect is not surprising. The question arises what motive nonplayers have for suppressing negative associations when being primed with FPS. It could be argued, that activated aggressive concepts are suppressed to block negative content

and not to protect generational gaming habits. Therefore, the missing differences for the suppression condition for nonplayers could be based on time-delay and not on relaxation processes. In this case, response latencies for aggressive and neutral words in the bicycle condition should not differ either. Our results contradict this assumption: suppression of aggressive concepts still worked in the bicycle condition. This speaks for ongoing defense strategies if the experimental setting is not relaxing concerning the net-generation gaming habits. Belonging to the net-generation seems to result in internalized defense strategies if it comes to violent video games independent of own playing habits.

But how do defense strategies work? One way of suppressing negative thoughts is to emphasize positively related concepts. As research suggests, video game enjoyment is not due to violence but mainly due to the interactivity of this medium.²⁶ Sherry et al.²⁷ argue that persons who play video games regularly associate positive concepts like fun and competition rather than aggression. This might be true for young adults without playing experience as well.

TABLE 1. RESPONSE LATENCIES OF PLAYERS AND NONPLAYERS OF THE FOUR EXPERIMENTAL CONDITIONS

	Players		Nonplayers	
	M	SD	M	SD
No suppression of aggression after FPS priming				
Aggressive words	816.63	159.75	728.70	62.77
Neutral words	722.34	103.07	692.79	99.97
Suppression of aggression after FPS priming				
Aggressive words	696.09	122.58	751.29	158.49
Neutral words	692.43	156.13	697.13	148.11
No priming				
Aggressive words	670.83	85.72	898.85	153.47
Neutral words	668.74	107.41	736.75	119.42
No suppression of aggression after FPS priming (bicycle)				
Aggressive words	861.02	220.48	816.62	129.14
Neutral words	764.25	105.35	729.05	78.02

FPS, first-person shooter.

If young people really try to protect violent video games, how do they suppress negative associations? One way to do this is to emphasize positively related concepts.^{20,28,29} Therefore, response latencies for positive words should decrease compared to aggressive ones. Recent research^{30,31} supports this assumption.

Our stimulus material did not include words that concerned the specific positive concepts associated with video games. As mentioned above, Ladas³² found that players associate digital video games with enjoyment, fun, action, and competition. Yee³³ found social reasons, achievement, and immersion as motivational reasons for online gaming. Further research should focus on typical positive concepts related with video games and chose words from these categories to investigate if young adults with and without gaming experience activate these concepts as a strategy for thought suppression.

Our study is not concerned with playing violent video games and aggression but priming their content. We cannot answer the question if actively playing might have had a different impact on thought suppression. As the results from Glock and Kneer¹⁵ suggest, playing compared to simple priming has a different influence on concept activation. Further studies should compare playing and simple priming on the activation of connected concepts, especially on differences on the activation of neutral, positive, and negative concepts.

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References

- Anderson CA, Dill KE. Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology* 2000; 78:772–790.
- Bushman BJ, Huesmann LR. Short-term and long-term effects of violent media on aggression in children and adults. *Archives of Pediatrics and Adolescent Medicine* 2006; 160:348–352.
- Sestir MA, Bartholow BD. Violent and nonviolent video games produce opposing effects on aggressive and prosocial outcomes. *Journal of Experimental Social Psychology* 2010; 46:934–942.
- Anderson CA. An update on the effects of playing violent video games. *Journal of Adolescence* 2004; 27:113–122.
- Ferguson CJ, Rueda SM, Cruz AM, et al. Violent video games and aggression: causal relationship or byproduct of family violence and intrinsic violence motivation? *Criminal Justice and Behavior* 2008; 35:311–332.
- Williams D, Skoric M. Internet fantasy and violence: a test of aggression in an online game. *Communication Monographs* 2005; 72:217–233.
- Leung L. Net-generation attributes and seductive properties of the internet as predictors of online activities and internet addiction. *CyberPsychology and Behavior* 2004; 7:333–348.
- Bargh JA, Raymond P, Pryor JB, et al. Attractiveness of the underling: an automatic power = > sex association and its consequences for sexual harassment and aggression. *Journal of Personality and Social Psychology* 1995; 68:768–781.
- Mussweiler T, Förster J. The sex = > aggression link: a perception-behavior dissociation. *Journal of Personality and Social Psychology* 2000; 79:507–520.
- Bartholow BD, Anderson CA, Carnagey NL, et al. Interactive effects of life experience and situational cues on aggression: the weapons priming effect in hunters and non-hunters. *Journal of Experimental Social Psychology* 2005; 41:48–60.
- Higgins ET, King GA, Mavin GH. Individual construct accessibility and subjective impressions and recall. *Journal of Personality and Social Psychology* 1982; 43:35–47.
- Entman RM. Framing: towards a clarification of a fractured paradigm. *Journal of Communication* 1993; 43:51–58.
- Price V, Tewksbury D, Powers E. Switching trains of thought: the impact of news frames on readers' cognitive responses. *Communication Research* 1997; 24:481–506.
- Fettig A. (2005) Eltern sind oft ahnungslos [Parents are clueless]. In Meyer H, ed. *NRZ-Neue Ruhr Zeitung*. Essen: Zeitungsverlag Niederrhein GmbH & Co, p. 22.
- Glock S, Kneer J. Game over? The impact of knowledge about violent digital games on the activation of aggression-related concepts. *Journal of Media Psychology* 2009; 21:151–161.
- Grüsser SM, Thalemann R, Griffiths MD. Excessive computer game playing: evidence for addiction and aggression? *CyberPsychology and Behavior* 2007; 10:290–292.
- Medienpädagogischer Forschungsverbund Südwest. JIM-Studie 2009. Jugend, Information, (Multi-) Media. www.mpfs.de/fileadmin/JIM-pdf09/JIM-Studie2009.pdf (accessed Jan. 1, 2010).
- Griffiths MD, Davies MN, Chappell D. Breaking the stereotype: the case of online gaming. *CyberPsychology and Behavior* 2003; 6:81–91.
- Beevers CG, Wenzlaff RM, Hayes AM, et al. Depression and the ironic effects of thought suppression: therapeutic strategies for improving mental control. *Clinical Psychology: Science and Practice* 1999; 6:133–148.
- Wenzlaff EM, Wegner DM. Thought suppression. *Annual Review of Psychology* 2000; 51:59–91.
- Macrae CN, Bodenhausen GV, Milne AB, et al. Out of mind but back in sight: stereotypes on the rebound. *Journal of Personality and Social Psychology* 1994; 67:808–817.
- Monteith JM, Spicer CV, Tooman GD. Consequences of stereotype suppression: stereotypes on and not on the rebound. *Journal of Experimental Social Psychology* 1998; 34:355–377.
- Valve Corporation (2008). *Left 4 Dead*. Electronic Arts: Los Angeles.
- Infinity Ward (2009). *Call of Duty: Modern Warfare 2*. Activision: Santa Monica, CA.
- Beskes S. Is doom over? Die Net generation und die aktivierung positiver und negativer konzepte durch gewalthaltige computerspiele [Is doom over? The Net generation and the activation of positive and negative concepts by violent video games]. Diploma Thesis, University of Cologne, 2011.
- Klimmt C, Hartmann T, Frey A. Effectance and control as the determinants of video game enjoyment. *CyberPsychology and Behavior* 2007; 10:845–848.
- Sherry L, Lucas K, Greenberg BS, et al. (2006) Video game uses and gratifications as predictors of use and game preference. In Vorderer P, Bryant J, eds. *Playing video games. motives, responses, and consequences*. Mahwah, NJ: Lawrence Erlbaum Associates, pp. 248–262.

28. Wegner DM. (1992) You can't always think what you want: problems in the suppression of unwanted thoughts. In Zanna M, ed. *Advances in experimental social psychology*. San Diego, CA: Academic Press, pp. 193–225.
29. Wenzlaff RM, Wegner DM, Roper DW. Depression and mental control: the resurgence of unwanted negative thoughts. *Journal of Personality and Social Psychology* 1988; 55:882–892.
30. Bösche W. Violent video games prime both aggressive and positive cognitions. *Journal of Media Psychology* 2010; 22:139–146.
31. Chumbley J, Griffiths M. Affect and the computer game player: the effect of gender, personality, and game reinforcement structure on affective responses to computer game-play. *CyberPsychology and Behavior* 2006; 9:308–316.
32. Ladas M. (2003) Eine Befragung von 2141 Computerspielern zu Wirkung und Nutzung von Gewalt [A survey of 2141 computer game players on effect and use of violence]. In Rötzer F, ed. *Virtuelle Welten—reale Gewalt* [Virtual worlds—real violence]. Hannover: Hans Heise Verlag, pp. 26–35.
33. Yee N. Motivation for Play in online games. *CyberPsychology and Behavior* 2006; 9:772–775.

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