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## 1 ORIGINAL ARTICLE 1

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**It's Okay to Shoot a Character: Moral Disengagement in Violent Video Games**

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AQ1

Playing video games has become one of the most popular leisure activities among youth (Smith, 2006). Violent video games, particularly first-person-shooters like *Half-Life II* or *Doom3*, are among the best-selling video games. Male adolescents are especially prone to play violent video games (Hartmann & Klimmt, 2006; Jansz, 2005).

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Violent games have been criticized and praised both in society and in science. Critics' biggest concern is that violent games could make their user more aggressive. Indeed, abundant research finds evidence that playing violent games increases short-term aggressive cognitions, feelings, and behavioral intentions (Anderson, 2004). Users easily perceive computer-mediated characters as social beings (Scholl & Tremoulet, 2005). Accordingly, research finds that aggressive video game play stimulates the same brain activity as real-life aggression does (Weber, Ritterfeld, & Mathiak, 2006).

AQ3

With this in mind, it seems immoral to play violent games, as the virtual violence appears to have serious consequences (Elton, 2000). Those who enjoy playing violent video games, however, often say that they feel no wrong committing virtual violence (Ladas, 2002). Rather, they highlight their enjoyment from playing violent games (Jansz, 2005).

Little past research has tried to examine both sides of the debate together, determining the circumstances under which virtual violence produces enjoyment rather than moral distress and distaste. The present studies pursue this goal by studying the psychological processes of moral disengagement in violent video games. We assume that violent games are generally enjoyable when players consider shooting virtual characters to be justifiable.

Little past research has tried to examine both sides of the debate together, determining the circumstances under which virtual violence produces enjoyment rather than moral distress and distaste. The present studies pursue this goal by studying the psychological processes of moral disengagement in violent video games. We assume that violent games are generally enjoyable when players consider shooting virtual characters to be justifiable.

**The puzzle of enjoyable virtual violence**

Drawing on Baron and Richardson's (1994) definition of aggression, virtual violence can be defined as any user behavior that follows the intention to do harm to other social characters in a video game, while the game characters are motivated to avoid

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1 the harm-doing. One could argue that the concept of doing harm does not apply to 1  
2 video games at all, because game characters are not living beings and thus do not 2  
3 fall into the “scope of justice” (Opotow, 1990, p. 3). In fact, users of violent games 3  
4 argue that shooting opponents in a video game does not constitute the elimination 4  
5 of social entities but rather the removal of objects or obstacles (Ladas, 2002). If so, 5  
6 the term “virtual violence” would be inappropriate, because such acts lack another 6  
7 living being against whom the violence is committed. 7

8 The present approach, however, presumes that users perceive video game charac- 8  
9 ters not as objects, but as social entities. Three arguments support this assumption. 9  
10 First, mediated cues easily trigger our automatic social perceptions, creating the sense 10  
11 that another social entity is present. As Heberlein and Adolphs (2004) summarize: 11  
12 “Anthropomorphizing [. . .] occurs when we attribute social meanings to stimuli that 12  
13 are not social, such as computers or clouds, presumably based on cues that signal 13  
14 the presence of agency or emotion. That we do so universally and automatically is a 14  
15 hallmark of human cognition” (p. 7490). Also, according to Mar and Macrae (2006), 15  
16 “[Humans] routinely view quite abstract nonliving representations as if they were 16  
17 intentional agents” (p. 110, see also “Ethopoeia” in Nass & Moon, 2000). Related 17  
18 research from various scientific domains indicates that people automatically identify 18  
19 social entities once they detect biological motion (Ahlstrom, Blake, & Ahlstrom, 1997; 19  
20 Morewedge, Preston, & Wegner, 2007), readily perceive simple action-sequences with 20  
21 artificial objects as social (Heider & Simmel, 1944; Oatley & Yuill, 1985), easily anthro- 21  
22 pomorphize nonhuman characters (Epley, Waytz, & Cacioppo, 2007; Mar & Macrae, 22  
23 2006), automatically behave toward computers and computer-animated agents as if 23  
24 they were human (Bente, Kraemer, Petersen, & deRuiter, 2001; Scholl & Tremoulet, 24  
25 2000; Yee, Bailenson, Urbanek, Chang, & Merget, 2007) or social actors (Nass & 25  
26 Noon, 2000; Reeves & Nass, 1996), are inclined to feel empathy toward animated 26  
27 characters (Morrison & Ziemke, 2005), and consequently tend to feel as though 27  
28 they are in a social situation if a computer-animated character is displayed (Garau, 28  
29 Slater, Pertaub, & Razaque, 2005; Hartmann, 2008). Thus, multiple strands of 29  
30 research provide compelling evidence that users readily perceive mediated objects as 30  
31 social beings, primarily due to automatic social perception processes. Recent research 31  
32 also started to reveal the neuropsychological functions behind humans’ tendency 32  
33 to anthropomorphize things (Heberlein & Adolphs, 2004; Mar & Macrae, 2006). 33  
34 Computer game engineers and visual artists use this knowledge to create believable, 34  
35 human-like, anthropomorphic game characters. Contemporary design of computer 35  
36 characters applies the cues that researchers have suggested provoke automatic social 36  
37 responses. Such indicators include eye-gazing, biological motion, display of natural 37  
38 facial activity, display of emotions, as well as breathing, natural vocal tones, and 38  
39 display of intelligence (Gratch & Marsella, 2004; Holtgraves, Ross, Weywadt, & Han, 39  
40 in press; Morrison & Ziemke, 2005; Shapiro, Peña, & Hancock, 2006). 40

41 Second, growing consensus among Communication Researchers and Media 41  
42 Psychologists suggests that users tend to approach media, including video games, 42  
43 as “believers.” Also likely to be the result of automatic processes, users’ default 43

1 mode of reception seems to perceive things as real, whereas it takes irritating media 1  
2 cues or motivational efforts to suspend the belief in an “apparent reality” (Green, 2  
3 Garst, & Brock, 2004; Wirth et al., 2007; Zillmann, 2006). If the media stimulus is 3  
4 well designed and displays social cues appropriately, it takes effort to recall that a 4  
5 character “is not real,” because automatic social perceptions suggest otherwise. For 5  
6 similar reasons, media users may respond to displayed characters affectively, even if 6  
7 it does not seem rational to do so (Morrison & Ziemke, 2005). As Zillmann (2006, 7  
8 p. 218) suggests, “the sequence of events, therefore, is not that cognizance of the 8  
9 pseudo reality of presentations has to be suppressed before emotions can occur, but 9  
10 that emotions are first induced by apparent reality, which then may be discounted 10  
11 as artificial.” Therefore, it seems likely that users tend to believe in displayed video 11  
12 game characters as well. 12

13 Third, even if users of a video game occasionally discount the perception of an 13  
14 “apparent reality,” it seems unlikely that they are continuously motivated to do so. 14  
15 Constant consideration that “this is not real” would distance the media user from 15  
16 the narrative and could eventually lead to emotional detachment (Cupchik, 2002; 16  
17 Vorderer, 1993). Video gamers, however, strive for entertainment, and heightened 17  
18 involvement or transportation into the mediated world increases their enjoyment 18  
19 (e.g., Sherry, 2004; Skalski, Lange, & Tamborini, 2006). If users continuously 19  
20 reminded themselves that “this is just a game,” the game would hardly be enjoyable 20  
21 (cf., Sheppes & Meiran, 2007, p. 1522). Therefore, because video gamers may be 21  
22 motivated to maintain belief in an apparent reality for self-serving reasons (unless 22  
23 strong aversive experiences urge them to do distance themselves; see below; see also 23  
24 Cantor, 2002; Schramm & Wirth, 2008), they may also be motivated to perceive 24  
25 video game characters as real social entities rather than artificial objects. 25

26 In the light of the above arguments, it seems reasonable to assume that users 26  
27 do confront “some sort of ” social entities, not simply objects, when they shoot 27  
28 video game characters. The knowledge that virtual characters are mediated and 28  
29 do not really exist is not completely forgotten. Rather, automatic processes and 29  
30 users’ motivational disposition ignore that information for the moment, so that 30  
31 users temporarily forget that their experience is mediated (International Society for 31  
32 Presence Research [ISPR], 2000). Lacking an existing term, we suggest that players 32  
33 perceive video game characters as quasi-social (Hartmann, 2008). Virtual violence 33  
34 thus involves harm to quasi-social characters that potentially fall into “the scope of 34  
35 justice” and have a “moral status” (Olthof et al., in press; Pizarro, Detweiler-Bedell, 35  
36 & Bloom, 2006; see Elton, 2000, for a philosophical discussion of the topic). 36

37 The question is why virtual violence obviously is enjoyable for many players. Our 37  
38 suggestion contains two parts. First, virtual violence may be enjoyable because it offers 38  
39 pleasurable gratifications. For example, players could perceive their effective harm- 39  
40 doing as a proof of their own superiority. Researchers have argued that virtual violence 40  
41 makes users feel effective and powerful (Klimmt & Hartmann, 2006), and allows 41  
42 them to enact a male gender role (Jansz, 2005; Kirsh, 2003). Second, gratification 42  
43 may be mood-regulation. Violent games offer pleasurable aesthetics of destruction 43

1 (Sparks & Sparks, 2000) and stimulate excitement (Raney, Smith, & Baker, 2006) 1  
2 that can become pride or euphoria if the user experiences success (Grodal, 2000). 2

3 However, we assume that virtual violence is only enjoyable if it comes with no or 3  
4 minimal *costs*, that is, if it does not violate inner moral standards and cause aversion 4  
5 or dissonance (Bandura, 1990, 2002; Tangney, Stuewig, & Mashek, 2007). In general, 5  
6 violence that conflicts with one's inner moral standards triggers distressful concern 6  
7 (cf., Bandura, 2002; Opatow, 1990). Guilt, for example, is defined "as the dysphoric 7  
8 feeling associated with the recognition that one has violated a personally relevant 8  
9 moral or social standard" (Kugler & Jones, 1992, p. 218). If a user violates his or her 9  
10 internal moral standards by doing harm to video game characters, dissonant feelings 10  
11 like guilt and disgust are likely to emerge (cf., Klimmt, Schmid, Nosper, Hartmann & 11  
12 Vorderer, in press; Tangney et al., 2007). Feelings of guilt or remorse, in turn, should 12  
13 hinder enjoyment. 13

14 Interviewing heavy users of first-person shooters, Klimmt, Schmid, Nosper, 14  
15 Hartmann, and Vorderer (2006) found that respondents are able to recall situations 15  
16 of moral concern from video games, even though it was "just a game" (p. 322). 16  
17 Players also reported that disturbing situations interfered with their enjoyment. For 17  
18 example, one respondent mentioned that "if people [enemies] are not dead at once, 18  
19 but somehow lie on the ground and are still moving and so on. That reaches a limit." 19  
20 Another respondent reasoned that "If I think that I turn around a corner, and a child 20  
21 is standing in front of me and as soon as he moves I, because I have this tunnel vision 'if 21  
22 it moves, shoot it', would shoot him, [. . .] that would counteract my fun very much." 22

23 Accordingly, the overall enjoyment of virtual violence in games may depend on 23  
24 maximizing pleasurable gratifications and minimizing aversive costs. The current 24  
25 studies focus on how violent games may minimize aversive costs by shaping their 25  
26 users' moral processing. Such games may reduce negative affect, particularly guilt, 26  
27 and promote overall enjoyment of virtual violence. 27  
28

### 29 **Moral disengagement in violent video games** 29 30

31 A recent approach in communication research aims to explain the conditions of 31  
32 enjoyable versus aversive aspects of virtual violence through the study of moral 32  
33 disengagement in violent video games (Klimmt et al., in press; see also Raney, 2004). 33  
34 This perspective argues that players try to avoid moral concern and related aversive 34  
35 feelings to maintain their entertainment experience. Moral disengagement supports 35  
36 this motivation. Moral disengagement can follow if the violent action is justifiable or 36  
37 if "considerations of fairness do not [seem to] apply to the other" (Opatow & Weiss, 37  
38 2000, p. 479; i.e., the action is not considered harm-doing due to judgements about 38  
39 the target of harm). Moral disengagement requires that the aggressor cognitively 39  
40 remove the potential victim from his or her "scope of justice" (Opatow, 1990, p. 3; 40  
41 see also "moral status," Olthof et al., in press; "human essence," Castano & Giner- 41  
42 Sorolla, 2006, p. 805; "dehumanization," Haslam, 2006; "moral circle"; Pizarro et al., 42  
43 2006, p. 82). Moral disengagement results in dehumanization of a character and 43

1 neglect of a character's moral status and human essence (Haslam, 2006). Thus moral 1  
2 disengagement eases harm-doing: "Those who are morally excluded are perceived as 2  
3 undeserving, expendable, and therefore eligible for harm" (Opatow, 1990, p. 13). 3

4 This notion of moral disengagement in video games shares many similarities 4  
5 with the moral-sanction theory of delight and repugnance (Zillmann, 2000) and 5  
6 the disparagement/disposition theory of drama (see also Raney, 2004; Zillmann & 6  
7 Cantor, 1976, 1983). Both disposition theories argue that users are counterempathetic 7  
8 toward characters they dislike. According to both theories, characters are disliked if 8  
9 they display immoral behavior (Raney & Bryant, 2002). Depending on the severity 9  
10 of a character's misconduct, users deem a certain punishment of the character 10  
11 appropriate (and even enjoyable) if it restores justice (Raney, 2002, 2004; Zillmann 11  
12 & Bryant, 1975; Zillmann, Bryant, & Cantor, 1974). Rephrased in the light of the 12  
13 present approach, a character's misconduct defines the extent to which it falls within 13  
14 or beyond the "scope of justice." The more severe a character's misconduct, the 14  
15 harsher the punishment that is still considered just. 15

16 The moral-disengagement approach proposes that most people who play violent 16  
17 video games do not enjoy behaving aggressively in *normal* real-world situations, 17  
18 because actual social entities fall into their "scope of justice." Therefore, it is not due 18  
19 to dysfunctional personality traits that players enjoy virtual violence. Rather, the game 19  
20 creates a situation that *automatically* leads to cognitive disengagement from inner 20  
21 moral standards (cf., Bandura, 2002; Haidt, 2001; Opatow, 1990). Like real people, 21  
22 quasi-social video game characters may trigger social perception, display humane 22  
23 emotions, and even evoke empathetic feelings. Thus, they have the potential to be 23  
24 considered part of the moral community. As a result, harming quasi-social characters 24  
25 could be perceived as wrongdoing. But, according to the moral disengagement 25  
26 perspective, features of the game ensure that it is not. Instead, as in other contexts 26  
27 that spur violence in real life, because of cues within video games, "behavior that 27  
28 is ordinarily viewed as unacceptable (killing social beings) is redefined as justified 28  
29 and desirable" (Klass, 1990, p.403). Due to its automaticity, moral disengagement is 29  
30 not necessarily a conscious process. Indeed, the significant phenomenology for users 30  
31 may be that virtual violence just does not feel wrong—instantaneously and without 31  
32 elaborate moral reasoning (Haidt, 2001). We propose two underlying mechanisms of 32  
33 moral disengagement that, we believe, are not mutually exclusive, but may function 33  
34 simultaneously in a given situation. 34

35 The first mechanism argues that specific *moral disengagement cues* the game 35  
36 provides may automatically separate users' harm-doing from their inner moral 36  
37 standards (Bandura, 1990, 2002; Opatow, 1990). For example, moral disengagement 37  
38 cues, such as a good reason to fight (e.g., to save the world), particularly against 38  
39 nonanthropomorphic creatures (e.g., aliens), may frame violence against game 39  
40 characters as acceptable even though those characters are perceived as quasi-social 40  
41 entities (Haslam, 2006). Contemporary violent video games may incorporate moral 41  
42 disengagement cues (cf., Dill, Gentile, Richter, & Dill, in press) so that players can 42  
43 enjoy virtual violence without moral concerns. Content analyses by Smith (2006) 43

1 and Smith, Lachlan, and Tamborini (2003) revealed that the typical narrative in 1  
2 violent games is “a human perpetrator engaging in repeated acts of *justified* violence 2  
3 involving weapons that result in some bloodshed to the victim” (p. 60; emphasis by 3  
4 the authors). Although violent video games entertain users with increasingly realistic 4  
5 graphics (Krahé & Moeller, 2004), game designers seem to design violent game play 5  
6 to be enjoyably guilt-free. 6

7 The second mechanism that facilitates users’ moral disengagement during violent 7  
8 video game play involves processes that are more elaborate and reflective. If users’ 8  
9 automatic protections against violations of internal moral standards occasionally 9  
10 fail and guilty or remorseful feelings arise (cf., Haidt, 2001), they can still reframe 10  
11 their wrongdoing and regulate their dissonant state. To fuel this conscious moral 11  
12 rationalization (Tsang, 2002), users can actively recall that they are merely playing 12  
13 a game or that they are fighting for justice. Research by Ladas (2002) and Klimmt 13  
14 et al. (2006) suggests that players do engage in such processes to minimize unpleasant 14  
15 feelings that may emerge during play. 15

16

## 17 **The current research** 17

18

19 The nascent study of moral disengagement in violent video games largely consists of 19  
20 literature reviews and plausible assumptions, and thus requires empirical research. 20  
21 Exploratory interviews conducted by Klimmt et al. (2006) have shed some light on 21  
22 the second mechanism of conscious moral rationalization proposed. But the first 22  
23 mechanism proposed, that is, automatically induced moral disengagement, needs 23  
24 testing. The present studies investigate this mechanism of moral disengagement 24  
25 in violent video games by examining how specific game-based cues may frame 25  
26 aggression against quasi-social characters as justifiable. 26

27 Research suggests a variety of cues a situation may provide to frame violent acts as 27  
28 unproblematic (Bandura, 1990, 2002; Haslam, 2006; Opatow, 1990). These include 28  
29 (a) the severity of opponents’ misconduct (violence may be appropriate if it follows 29  
30 condemnable misconduct by opponents), (b) dehumanization of victims (targets 30  
31 of violent actions are declared to lack human qualities), (c) moral justification 31  
32 (violence is considered as a necessary means to achieve a higher calling), and 32  
33 (d) disregard for or distortion of the consequences of violence (e.g., harsh and 33  
34 potentially disturbing consequences of violence are not portrayed or are visually 34  
35 masked). Two 2 × 2-experiments examined the effect of these moral-disengagement 35  
36 cues in contemporary violent video games on users’ feelings of guilt, general negative 36  
37 affect, and game enjoyment. Experiments took place in a lab at a university in the 37  
38 Western United States. 38

39

## 40 **Experiment 1** 40

41

### 41 **Hypotheses** 41

42 The first 2 × 2-experiment examined the effects of dehumanization (human 42  
43 opponents vs. creatures) and condemnable misconduct (condemnable vs. less 43

condemnable actions of opponents) on emotional outcomes from playing a violent video game. Dehumanized entities do not fall into the perpetrator's scope of justice (Haslam, 2006; Opatow, 1990; Raney, 2002; Zillmann, 2000), which is why harming them is not perceived as a problematic violation of norms (Bandura, 1990, 2002). For example, if an opponent appears to be nonhuman, moral concern should be diminished. Condemnable misconduct allows the user to justify aggression against a deserving target (self-righteous, advantageous comparison; Opatow, 1990). Accordingly, we hypothesized the following effects:

**H1:** Video game players whose opponents are nonhuman will (a) feel less guilty, (b) have less negative affect, and (c) enjoy the game more than players with human opponents.

**H2:** Video game players whose opponents display condemnable misconduct will (a) feel less guilty, (b) have less negative affect, (c) enjoy the game play more than players whose opponents display only a minor misconduct.

## Method

### Participants

Undergraduate students enrolled in a class on media entertainment were recruited as participants. Students received course credit for their participation. Overall, 84 students participated in the experiment (51 females, 33 males; ages ranged between 17 and 25,  $M = 19.82$ ). On average, students in the sample reported playing video games for .82 hours during the week ( $SD = 1.22$ ) and 1.83 hours on the weekend ( $SD = 2.2$ ). Among the participants' favorite genres were role-playing games (29.8%), followed by action-adventure (21.4%), and puzzle games (19%). Shooting-, war-, and combat-games were favorites of only a minority (3.6%).

### Materials

In the experiment, subjects played an edited level of a first-person-shooter. Shooters are a typical genre of violent video games (Smith, 2006). The current study used a level from the popular shooter *Half-Life II* (Valve Software). However, the game was modified substantially for the experimental manipulation (cf., "modding," cf. Postigo, 2007).

First, a new cover story was applied. Before the game play started, subjects saw an animated picture of their opponents (either a human soldier or a nonhuman creature). A cover story informed them that the opponents had invaded the streets of a midsize city. The story explained that opponents had either shot civilians and behaved aggressively (condemnable misconduct) or conducted a passive, defensive protest (minor misconduct). Finally, players learned that their job was to patrol the streets to restore order.

Processes of (de)humanization are affected by both an entity's inner and outer human nature (cf., Loughnan & Haslam, 2007). To manipulate dehumanization

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1 in the present study, only the outer appearance of opponents was changed. 1  
2 While playing the video game, users either fought against soldiers with weapons 2  
3 (human opponents) or zombie-like creatures (nonhuman opponents). Opponents 3  
4 either behaved aggressively, killing civilians in the streets and attacking the user 4  
5 unprovoked (condemnable misconduct), or behaved more passively, by peacefully 5  
6 coexisting alongside civilians and only attacking if the player opened fire first (minor 6  
7 misconduct). 7

8 Video games are not enjoyable if they are too difficult or too easy (Klimmt, 8  
9 Hartmann, & Frey, 2007). The complicated game play originally present in *Half Life* 9  
10 *II* was modified to produce a game stimulus that was easy enough for inexperienced 10  
11 users, but also challenging enough for experienced ones. Users (a) could only 11  
12 shoot with one weapon (a gun), (b) had unlimited ammunition but needed to reload 12  
13 occasionally, and (c) could not die. Only the number of opponents shot (kill-counter) 13  
14 appeared on the screen. 14  
15

### 16 Procedure 16

17 After entering the lab, participants read and signed an informed consent form and 17  
18 were randomly assigned to one of the four experimental conditions. After sitting in 18  
19 front of a computer, they watched the introductory sequence and played the game 19  
20 for 10 minutes before the game automatically stopped. Subjects wore headphones 20  
21 while playing. After the game ended, a lab assistant noted the number on the kill- 21  
22 counter and switched the screen to an online questionnaire that assessed dependent 22  
23 constructs, treatment variables, control factors, and sociodemographic data (in this 23  
24 order). After completing the questionnaire, participants continued with the second 24  
25 experiment. Then, they received a debriefing and left. Overall, the lab session took 25  
26 about 45 minutes. 26  
27

### 28 Measures 28

29 Dependent variables included sense of guilt, general negative affect, and game 29  
30 enjoyment. 30

31 *State guilt* was measured by applying three items of the Differential Emotions 31  
32 Scale (DES-IV; Izard, 1977; Kotsch, Gerbing, & Schwartz, 1982). Similar to most 32  
33 assessments of guilt, the scale was originally developed to measure enduring emotion- 33  
34 tendencies (cf., Kugler & Jones, 1992). The original scale asks people about how often 34  
35 in their daily life they “feel regret, sorry about something you did,” “feel like you 35  
36 did something wrong,” and “feel like you ought to be blamed for something” (1, 36  
37 rarely or never; 2, hardly ever; 3, sometimes; 4, often; 5, very often). By rephrasing 37  
38 the questionnaire to ask, “While playing the game, how often did you. . .,” the same 38  
39 items could be retained to assess state guilt. Kugler and Jones (1992) found that the 39  
40 three items correlate well with other measures of state guilt. Still, to select the best 40  
41 measure, existing scales that measure state guilt were reviewed and compared to the 41  
42 three DES-IV items. Kugler and Jones (1992) review two alternative scales that assess 42  
43 state guilt, the Guilt Inventory (Jones, Schratte, & Kugler, 2000) and the Perceived 43

1 Guilt Index (Otterbacher & Munz, 1973). The Perceived Guilt Index has rarely been 1  
2 used in the past, and psychometric data to assess the quality of the measure is 2  
3 scarce. In contrast, the psychometric quality of the Guilt Inventory has been proven. 3  
4 However, most of the 10 items of the state-subscale were not easily modifiable for the 4  
5 current setting (e.g., “Recently, my life would have been much better if only I hadn’t 5  
6 done what I did”). Thus the DES-IV items seemed most appropriate for assessing 6  
7 state guilt in the present studies. Items were compiled into a mean index,  $\alpha = 0.93$ ; 7  
8  $M = 1.71$ ;  $SD = 1.09$ . 8

9 The popular, short version of the Positive and Negative Affect Scale (PANAS, 9  
10 Watson, Clark, & Tellegen, 1988) was applied to assess users’ *negative affect*. 10  
11 The short version of the PANAS consists of 20 attributes. The 10 items that 11  
12 assess negative affect were further analyzed in this study (distressed, upset, guilty, 12  
13 scared, hostile, irritable, ashamed, nervous, jittery, afraid; all from 1 very slighty 13  
14 or not at all  $-5$  extremely). Items were summed to an index,  $\alpha = 0.93$ ;  $M = 15$   
15  $19.46$ ;  $SD = 9.31$ .<sup>1</sup> Negative affect was positively correlated with guilt ( $r = 0.64$ ; 16  
16  $p < .01$ ). 17

18 *Enjoyment* was measured with a five-item scale developed by Tauer and Harack- 18  
19 iewicz (1999) to assess intrinsic game enjoyment. Subjects reported how much they 19  
20 thought playing the video game was “very interesting,” “a boring activity” (rev), 20  
21 “enjoyable,” “a waste of time” (rev), and “fun” (1, totally disagree; 5, totally agree). 21  
22 Items were compiled into a mean index,  $\alpha = .91$ ;  $M = 2.99$ ;  $SD = 1.09$ . Enjoy- 22  
23 ment did not significantly correlate with guilt ( $r = -1.9$ ;  $p = .09$ ), nor with general 23  
24 negative affect ( $r = -1.8$ ;  $p = .11$ ). 24

25 One question assessed the effectiveness of each *manipulated factor*. However, 25  
26 according to the theoretical approach, moral disengagement cues may trigger uncon- 26  
27 scious effects. Therefore, the treatment questions were considered not to be sufficient 27  
28 proof but additional information about the treatment’s effectiveness. To check the 28  
29 condemnable misconduct manipulation, subjects were asked to rate the behavior 29  
30 of opponents, ranging from (1) very defensive to (5) very aggressive ( $M = 3.35$ ; 30  
31  $SD = 1.44$ ). To assess the dehumanization manipulation, subjects were asked to 31  
32 indicate how much they agreed that they fought against nonhuman creatures 32  
33 rather than against human beings (1, do not agree; 5, totally agree;  $M = 2.98$ ; 33  
34  $SD = 1.45$ ). 34

35 Subjects’ familiarity with *Half Life II* (1 not at all–5 very much;  $M = 2.07$ ; 35  
36  $SD = 1.4$ ) and the number of opponents shot (kill-counter;  $M = 40$ ;  $SD = 12.48$ ) 36  
37 were assessed as *control factors*. Two additional control factors were derived on the 37  
38 basis of the second mechanism suggested in the theoretical approach (i.e., conscious 38  
39 rationalization). Participants were asked how much they thought that “this is just a 39  
40 game” (1, not at all; 5, very much;  $M = 3.29$ ;  $SD = 1.44$ ) and their belief that “this 40  
41 is just an experiment in which they need to follow instructions” (1 not at all–5 very 41  
42 much;  $M = 2.7$ ;  $SD = 1.23$ ).<sup>2</sup> 42  
43 43

## 1 Results 1

### 2 Treatment check 2

3 Players who fought against nonhuman creatures did perceive the opponents to be 3  
4 less human ( $M = 3.38$ ;  $SD = 1.61$ ) than players who fought against human soldiers 4  
5 ( $M = 2.7$ ;  $SD = 1.34$ ;  $t(82) = 2.1$ ;  $p < .05$ ). Also, players in the “condemnable 5  
6 misconduct” condition perceived the opponents to be significantly more aggressive 6  
7 ( $M = 3.54$ ;  $SD = 1.38$ ) than users in the “minor misconduct” condition ( $M = 3.16$ ; 7  
8  $SD = 1.5$ ). However, this difference did not reach significance;  $t(82) = 1.19$ ; *ns.* 8  
9

### 10 Control factors 10

11 Control factors were analyzed if they (a) correlate with at least one of three dependent 11  
12 measures and (b) significantly differ among at least two experimental groups (which 12  
13 would tell about confounding factors that violated the random assignment principle). 13  
14 The more familiar subjects were with Half Life II, the less they felt guilty ( $r = -0.28$ , 14  
15  $p < .05$ ), the weaker their negative affect ( $r = -0.33$ ;  $p < .01$ ), and the more they 15  
16 enjoyed the game ( $r = 0.39$ ;  $p < .01$ ). Also, the more players thought that “this 16  
17 is just a game” ( $r = -0.24$ ;  $p < .01$ ), and the more they thought “this is just an 17  
18 experiment” ( $r = -0.34$ ;  $p < .01$ ), the lower their enjoyment. Despite the random 18  
19 assignment, experimental groups unfortunately significantly differed in how much 19  
20 they thought that “this is just an experiment.” Apparently, awareness was confounded 20  
21 with the experimental manipulation: Participants assigned to the condemnable 21  
22 misconduct conditions reported significantly higher levels of awareness that “this 22  
23 is just an experiment” than participants in the “minor misconduct” conditions 23  
24 ( $F(1, 84) = 5.35$ ;  $p < .01$ ). 24  
25

### 26 Data analyses 26

27 The treatment check did not support an effective manipulation of opponents’ 27  
28 misconduct. Therefore, hypotheses testing was conducted as follows: First, a 2 28  
29 (condemnable misconduct vs. minor misconduct)  $\times$  2 (nonhuman opponents vs. 29  
30 human opponents) multivariate analysis of variance (MANOVA) was conducted 30  
31 with the original experimental groups as the independent factor, and guilt, negative 31  
32 emotions, and enjoyment as dependent variables. Second, the same MANOVA 32  
33 was calculated, but this time with a quasi-experimental misconduct factor (i.e., 33  
34 median split of “perceived aggressiveness of opponents” at 4) instead of the original 34  
35 factor.<sup>3</sup> 35

36 A 2 (condemnable misconduct vs. minor misconduct)  $\times$  2 (nonhuman oppo- 36  
37 nents vs. human opponents) MANOVA revealed no significant effects on guilt and 37  
38 enjoyment, and a small but significant effect of opponents’ misconduct on negative 38  
39 affect ( $F(1, 83) = 4.18$ ;  $p < .05$ ;  $\eta^2_{\text{part}} = 0.05$ ). Subjects shooting defensive opponents 39  
40 that only committed minor misconduct reported more negative affect ( $M = 21.51$ ; 40  
41  $SD = 10.23$ ) than subjects shooting aggressive opponents in the condemnable mis- 41  
42 conduct condition ( $M = 17.32$ ;  $SD = 7.8$ ). An exploratory MANOVA analysis of the 42  
43 10 negative affect items revealed that users fighting against opponents in the minor 43

1 misconduct condition reported to be more guilty, ashamed, nervous, and irritable 1  
 2 than players fighting against opponents in the “condemnable misconduct” condition 2  
 3 (all  $p < .05$ ). 3

4 A second MANOVA with the original misconduct factor replaced by the quasi- 4  
 5 experimental perceived aggressiveness factor yielded similar results. 5  
 6 6  
 7 7

## 8 **Discussion** 8

9 Overall, Study 1 suffered from some flaws. One of the two experimental factors, that is, 9  
 10 opponents’ misconduct, was not successfully manipulated. In addition, participant’s 10  
 11 awareness “that this is just an experiment where I have to follow instructions” did 11  
 12 not only affect game enjoyment, but also differed significantly between conditions, 12  
 13 suggesting a confounding factor that was affected by the manipulation. Therefore, 13  
 14 the results obtained in Study 1 have rather exploratory value. 14  
 15 15

## 16 **Dehumanization** 16

17 The data did not support H1: In the study, players who fought against nonhuman 17  
 18 creatures did not feel less guilty, did not have less negative affect, and did not enjoy the 18  
 19 game more than players who fought against human opponents. Thus, fighting against 19  
 20 either virtual human soldiers or virtual creatures caused no difference in users’ moral 20  
 21 perception. One explanation is that users may have always found opponents aggressive 21  
 22 enough to deserve a violent response, and such a perception may have overruled 22  
 23 any effect of the opponents’ human or nonhuman appearance (see “manipulation 23  
 24 of misconduct,” below). An alternative and more general explanation could be that 24  
 25 players lacked automatic social perception and did not consider any of the virtual 25  
 26 opponents to fall within their scope of justice. Both mechanisms could explain why 26  
 27 low sample means in guilt and negative affect were found, both in the group that 27  
 28 fought against human soldiers and the one that fought against creatures. Overall, 28  
 29 subjects barely felt guilty or experienced any negative affect. Due to this floor effect, 29  
 30 the manipulation of opponents’ outer appearance had little variance to explain. 30  
 31 A third possibility is that the manipulation of dehumanization may have failed. 31  
 32 Only the outer appearance of opponents differed, but all opponents may have been 32  
 33 sufficiently human-like. Although the applied treatment check suggests a successful 33  
 34 manipulation, a more rigid test of “human essence” (Loughnan & Haslam, 2007) 34  
 35 may have indicated that the social perception of creatures did not differ much from 35  
 36 that of human opponents. 36  
 37 37

## 38 **Condemnable misconduct** 38

39 H2 received only marginal support: Players who shot opponents that committed 39  
 40 condemnable misconduct did not feel less guilty (measured by the DES-IV subscale), 40  
 41 and did not enjoy the game more than players that shot less blameworthy oppo- 41  
 42 nents. However, players experienced more negative affect if they shoot opponents 42  
 43 43

1 that can only be blamed for a minor misconduct. Players who shot less blamewor- 1  
2 thy characters felt more guilty, ashamed, nervous, and irritable (measured by the 2  
3 PANAS). One explanation is that this negative affect indeed resulted from a viola- 3  
4 tion of moral standards, which was too insignificant, however, to induce stronger 4  
5 feelings of guilt that would have been detected by the applied multi-item DES-IV 5  
6 measure. 6

### 7 8 **Manipulation of misconduct** 8

9 The failed treatment check of the manipulated opponents' misconduct may point to 9  
10 a limitation of the experiment. The applied manipulation may have been ineffective. 10  
11 In the game, even the opponents envisioned to be defensive and subject to less 11  
12 blame were equipped with weapons, which they used after subjects opened fire. 12  
13 These counterattacks probably provided enough misconduct for players to perceive 13  
14 the opponents as aggressive and worthy of blame (cf., Bandura, 1990; Castano & 14  
15 Giner-Sorolla, 2006). Quasi-social entities that display some misconduct and even 15  
16 attack the user with weapons may also be easily categorized as a threatening outgroup 16  
17 (i.e., the enemy). Research shows that people perceive outgroups as less humane, 17  
18 and more animal-like and automata-like than their ingroups (Leyens et al., 2001; 18  
19 Loughnan & Haslam, 2007). However, because every opponent deserved blame, 19  
20 users across all groups may have felt justified in shooting characters (cf., Raney, 20  
21 2002). This may have reduced potential differences in guilt, negative affect, and 21  
22 enjoyment. 22

23 Indeed, qualitative interviews have found that users of violent games feel displea- 23  
24 sure after accidentally killing game characters who are actually innocent, for example, 24  
25 bystanders who tried to avoid harm and did nothing wrong in the first place (like 25  
26 children or fleeing civilians; Klimmt et al., 2006). Future studies should, therefore, 26  
27 distinguish more carefully between opponents that are or are not deserving of blame 27  
28 (cf., Pizarro et al., 2006). 28

### 29 30 **Familiarity of game** 30

31 Zero-order correlations showed that familiarity with the game determines guilt, 31  
32 negative affect, and enjoyment when shooting quasi-social characters. The more 32  
33 familiar players were with the violent game *Half Life II*, the weaker their experience 33  
34 of guilt and negative affect, and the greater their enjoyment. Two explanations may 34  
35 account for this effect. Players who are familiar with *Half Life II* have probably 35  
36 played it before. Through repeated use of the game, players could have learned how 36  
37 to regulate their emotions and deal with potential violations of moral standards. It 37  
38 seems reasonable that experienced users of violent games develop and apply cognitive 38  
39 strategies that help to reduce negative affect and make violent conduct more gratifying 39  
40 (cf. "desensitization," Carnagey, Anderson, & Bushman, 2006; Raney, 2004). Moral 40  
41 disengagement may be one such strategy. Cues the game provides, such as nonhuman 41  
42 characters, could promote users' learning processes, but lose their former impact 42  
43 once players incorporate moral disengagement. A second and related explanation is 43

1 that users' personality factors, for example, low trait empathy (Davis, 1983) or low  
 2 susceptibility to guilt (Tangney, Wagner, & Gramzow, 1992) jointly led to familiarity  
 3 with *Half Life II*, diminished guilt and negative affect, and increased enjoyment of  
 4 virtual violence. From this perspective, any correlation found would be completely  
 5 mediated by personality factors. Moral disengagement cues from the game, such as  
 6 nonhuman opponents, would have had little or no importance for the formation of  
 7 guilt and negative affect. Instead, enduring personality factors may have determined  
 8 whether a player perceived quasi-social characters to fall into the scope of justice  
 9 (Opatow, 1990). The explanation of the link found between familiarity and guilt,  
 10 negative affect, and enjoyment is challenging. Future studies are needed to illuminate  
 11 the link between users' familiarity with a violent game and positive and negative  
 12 affect.<sup>4</sup>

13

## 14 Experiment 2

15

### 16 Hypotheses

17 A second 2 × 2-experiment focused on the effects of moral justification (justified  
 18 vs. unjustified) and disregard or distortion of consequences (no consequences vs.  
 19 consequences) on emotional outcomes of playing a violent video game. Justification is  
 20 a key determinant of moral disengagement (Bandura, 2002; Zillmann, 2000). Fighting  
 21 for a just purpose or for a moral authority frames harm-doing as appropriate and thus  
 22 suppresses dissonance (Opatow, 1990; Raney, 2002). Also, if the consequences of  
 23 doing harm to social entities are neglected (i.e., not named, not visible, not discussed)  
 24 or distorted (i.e., labeled in a euphemistic way or portrayed in a funny or aesthetic  
 25 way), perpetrators perceive less or no mayhem, and aversive feelings of wrongdoing  
 26 are reduced (Bandura, 2002; Zillmann, 1983). Accordingly, the second experiment  
 27 tested the following hypotheses:

28

29 **H1:** If a video game frames virtual violence as justified, players (a) feel less guilty, (b) have less  
 30 negative emotions, (c) enjoy the game play more than if the same game frames the action as  
 31 unjustified.

32

33 **H2:** If a violent video game does not portray (or distorts) the consequences of virtual  
 34 violence, players (a) feel less guilty, (b) have less negative emotions, (c) enjoy the game play  
 35 more than if the game portrays the consequences of violent actions.

36

## 36 Method

37

### 37 Participants and procedure

38 Subjects participated in both experiments in consecutive order. The sample and  
 39 procedure was similar to those of the first experiment.

40

### 41 Material

42 For the second experiment, a new level of the popular ego-shooter *Operation*  
 43 *Flashpoint* (Bohemia Interactive) was developed by modifying the original software.

1 A modified cinematic introduction established a new narrative. The audiovisual 1  
2 movie-sequence showed a torture camp in the (fictional) Oka region where innocent 2  
3 people were murdered by paramilitary forces. In the remainder of the introduction 3  
4 and depending on the experimental condition, subjects either learned that they would 4  
5 play a soldier of the United Nations (UN), about to attack the torture camp to restore 5  
6 humanity (justified action), or to play a soldier of the paramilitary forces that would 6  
7 continue their cruelty and defend the camp (unjustified action). 7

8 Actual game play followed. As a UN soldier players started the game in a quiet 8  
9 forest just before the torture camp, as a paramilitary soldier in a quiet section of the 9  
10 camp. In this sequence, players received instructions about how to navigate through 10  
11 the environment and how to shoot and reload their weapon. The torture camp itself 11  
12 consisted of an insolated area surrounded by walls so that subjects could not get 12  
13 lost during the game. Either UN soldiers or paramilitary forces were positioned as 13  
14 opponents, and they only made use of a single weapon, a gun. Shooting opponents 14  
15 either resulted in bloodshed and a dying character screaming and tumbling to the 15  
16 ground (consequences) or in a mundane “ping” sound and a character who simply 16  
17 vanished (no consequences). Every 2 minutes, a walkie-talkie voice (introduced as the 17  
18 commander) commented on the action, either in a harsh, realistic way (consequences) 18  
19 or in a euphemistic way (no consequences). 19

20 As in the first experiment, game play was modified so that users (a) could only 20  
21 shoot with one weapon (a gun), (b) had unlimited ammunition but occasionally 21  
22 needed to reload, (c) could not die. Also, only the number of opponents shot 22  
23 (kill-counter) appeared on the screen. 23

24

## 25 Measures

26 Measures were the same as in the first experiment. Again, dependent measures 26  
27 included the feeling of guilt ( $\alpha = 0.93$ ;  $M = 1.89$ ;  $SD = 1.18$ ), general negative 27  
28 affect ( $\alpha = 0.92$ ;  $M = 17.54$ ;  $SD = 7.93$ ), and game enjoyment ( $\alpha = .88$ ;  $M = 2.65$ ; 28  
29  $SD = 1.02$ ). Guilt and negative affect were strongly correlated ( $r = 0.76$ ;  $p < .01$ ). 29  
30 Enjoyment had a significant negative correlation to guilt ( $r = -0.27$ ;  $p < .05$ ), but 30  
31 not to general negative affect ( $r = -0.17$ ;  $p = .13$ ). 31

32 One question checked for the effectiveness of each *manipulated factor*. To assess the 32  
33 justification manipulation, subjects were asked how much they supported/opposed 33  
34 the motives of the authority for whom they fought (1, strongly oppose; 5, strongly 34  
35 support;  $M = 2.87$ ;  $SD = 1.08$ ). To assess the portrayed consequences manipulation, 35  
36 subjects were asked to indicate the degree of mayhem that was shown in the game 36  
37 (1, hardly any; 5, extensive;  $M = 2.49$ ;  $SD = 1.01$ ). 37

38 As in the first experiment, *control factors* included subjects' previous familiar- 38  
39 ity with the game *Operation Flashpoint* (1, not at all; 5, very much;  $M = 1.86$ ; 39  
40  $SD = 1.02$ ), the number of shot opponents (kill-counter;  $M = 42.21$ ;  $SD = 19.68$ ), 40  
41 the degree participants thought that “this is just a game” (1, not at all; 5, very much; 41  
42  $M = 3.93$ ;  $SD = 1.16$ ) and that “this is just an experiment where I have to follow 42  
43 instructions” (1, not at all; 5, very much;  $M = 3$ ;  $SD = 1.32$ ). 43

## 1 Results 1

### 2 Treatment check 2

3 Players of the justified violence condition supported the motives of their author- 3  
 4 ity (UN soldiers) more ( $M = 3.39$ ;  $SD = 0.86$ ) than players that fought for the 4  
 5 paramilitary forces in the unjustified violence condition ( $M = 2.43$ ;  $SD = 1.07$ ; 5  
 6  $t(81, 94) = 4.57$ ;  $p < .01$ ). However, players confronted with no (or distorted) con- 6  
 7 sequences did not report significantly less mayhem ( $M = 2.37$ ;  $SD = 1$ ) than players 7  
 8 whose shot opponents screamed and died ( $M = 2.57$ ;  $SD = 1.02$ ;  $t(82) = 0.89$ ; *ns*). 8  
 9 9

### 10 Control factors 10

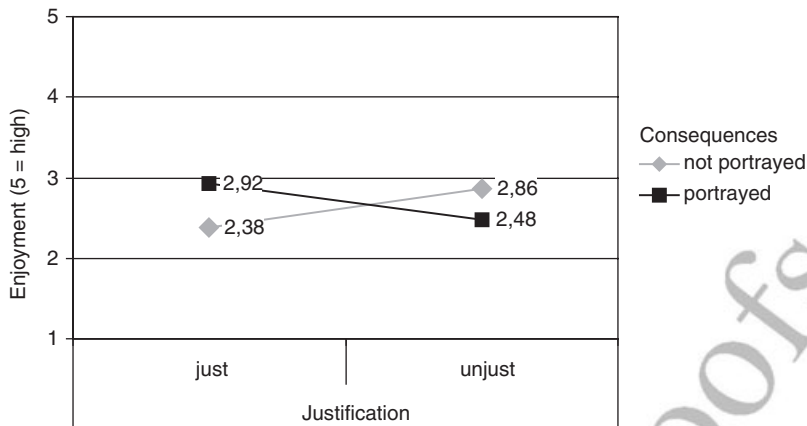
11 Again, it was tested whether control factors correlated with at least one of three 11  
 12 dependent measures and whether they differed significantly among at least two 12  
 13 experimental groups. Simple zero-order correlations showed that the more subjects 13  
 14 believed that “this is just a game,” the less they experienced guilt ( $r = -0.27$ ; 14  
 15  $p < .01$ ) and negative affect ( $r = -0.36$ ;  $p < .01$ ). None of the other correlations 15  
 16 were significant. Users’ awareness that “this is just a game” did not differ among 16  
 17 experimental groups. 17  
 18 18

### 19 Data analyses 19

20 Although the treatment check did not find an effective manipulation of the conse- 20  
 21 quences portrayed in the game, the effect could have been too unconscious to be 21  
 22 reflected later in the response to a question (O’Keefe, 2003). For this reason, the 22  
 23 test of hypotheses was conducted as follows: A 2 (justified vs. unjustified violence) 23  
 24  $\times$  2 (consequences vs. no consequences) MANOVA was calculated with the orig- 24  
 25 inal experimental groups as independent factor, and guilt, negative emotions, and 25  
 26 enjoyment as dependent variables. Second, the same MANOVA was calculated, but 26  
 27 this time with a quasi-experimental consequences factor (median-split of perceived 27  
 28 mayhem at score 2) instead of the original factor.<sup>3</sup> 28  
 29 29

30 A 2 (justified vs. unjustified violence)  $\times$  2 (consequences vs. no consequences) 30  
 31 MANOVA showed a significant main effect of justified virtual violence (Pillai’s 31  
 32  $F(3, 78) = 3.65$ ;  $p < .05$ ) on the feeling of guilt ( $F(1, 84) = 4.36$ ;  $p < .05$ ;  $\eta^2_{\text{part}} = .05$ ) 32  
 33 and general negative affect ( $F(1, 84) = 10.61$ ;  $p < .01$ ;  $\eta^2_{\text{part}} = .12$ ), but not on 33  
 34 game enjoyment ( $F(1, 84) = 0.006$ ; *ns*;  $\eta^2_{\text{part}} = 0.06$ ). Players that fought for a just 34  
 35 cause reported significantly less guilt ( $M = 1.56$ ;  $SD = 0.89$ ) and less negative 35  
 36 affect ( $M = 14.53$ ;  $SD = 3.94$ ), but not significantly more enjoyment ( $M = 2.68$ ; 36  
 37  $SD = 1.04$ ) than players that fought for an unjust cause (guilt:  $M = 2.16$ ;  $SD = 1.32$ ; 37  
 38 negative affect:  $M = 20.02$ ;  $SD = 9.45$ ; enjoyment:  $M = 2.63$ ;  $SD = 1.01$ ). The 38  
 39 manipulation of consequences resulted in no significant effect (Pillai’s  $F(3, 78) = .26$ ; 39  
 40 *ns*). The interaction justification  $\times$  consequences approached significance (Pillai’s 40  
 41  $F(3, 78) = .25$ ;  $p = .06$ ) due to a significant effect on enjoyment ( $F(1, 84) = 4.24$ ; 41  
 42  $p < .05$ ;  $\eta^2_{\text{part}} = 0.1$ ). The effect is portrayed in Figure 1. As shown, enjoyment was 42  
 43 greatest if players fought for a just authority and the consequences of shooting 43





**Figure 1** Interaction of justification  $\times$  portrayed consequences on game enjoyment ( $N = 84$ ).

characters was portrayed ( $M = 2.9$ ;  $SD = 0.97$ ) or fought for a bad purpose but no (or distorted) consequences of shooting characters were portrayed ( $M = 2.86$ ;  $SD = 1.05$ ). That is, enjoyment was highest when only one of the two moral disengagement cues was present.

In a second MANOVA, this time with the quasi-experimental consequences factor (perceived mayhem), justification again significantly affected the dependent variables (Pillai's  $F(3, 78) = 4.03$ ;  $p < .05$ ). Players who fought for a just cause experienced less guilt ( $F(1, 84) = 5.11$ ;  $p < .05$ ;  $\eta_{\text{part}}^2 = 0.06$ ) and less negative affect ( $F(1, 84) = 12.28$ ;  $p < .01$ ;  $\eta_{\text{part}}^2 = 0.13$ ), but did not differ in terms of game enjoyment ( $F(1, 84) = 1$ ;  $ns$ ;  $\eta_{\text{part}}^2 = 0.001$ ). Unlike the original factor, the quasi-experimental factor portrayed consequences, that is the degree of perceived mayhem, significantly affected (Pillai's  $F(3, 78) = 3.22$ ;  $p < .05$ ) users' feeling of guilt ( $F(1, 84) = 7.4$ ;  $p < .01$ ;  $\eta_{\text{part}}^2 = 0.09$ ) and negative affect ( $F(1, 84) = 9.07$ ;  $p < .01$ ;  $\eta_{\text{part}}^2 = 0.1$ ), but—similar to the original factor—there was no difference in game enjoyment ( $F(1, 84) = 0.78$ ,  $ns$ ;  $\eta_{\text{part}}^2 = 0.01$ ). Players who perceived less mayhem felt significantly less guilty ( $M = 1.55$ ;  $SD = 0.84$ ) and experienced less negative affect ( $M = 15.02$ ;  $SD = 5.79$ ), but did not experience significantly more enjoyment ( $M = 2.76$ ;  $SD = 1.06$ ) than players that perceived much mayhem (guilt:  $M = 2.3$ ;  $SD = 1.4$ ; negative affect:  $M = 20.08$ ;  $SD = 9.12$ ; enjoyment:  $M = 2.52$ ;  $SD = 0.96$ ). The MANOVA also revealed a significant interaction of justification  $\times$  perceived mayhem; Pillai's  $F(3, 78) = 3$ ;  $p < .05$ . Negative affect was by far most pronounced among players that fought for an unjust reason and perceived much mayhem ( $M = 24.09$ ;  $SD = 9.72$ ;  $F(1, 84) = 5.23$ ;  $p < .05$ ;  $\eta_{\text{part}}^2 = 0.06$ ). Exploratory in-depth MANOVA analyses of the 10 negative affect items reveal that participants were more scared, irritated, and jittery when fighting for an unjust purpose and perceived the mayhem caused by their violent actions (all  $p < .05$ ). The interaction effect on enjoyment that was found in the previous MANOVA only occurred as

1 a trend this time ( $F(1, 84) = 2.81; p < .1$ ). As in the analyses that included the  
 2 experimentally manipulated factors, enjoyment was highest if players either fought  
 3 for a bad authority and perceived less mayhem ( $M = 2.91; SD = 1.12$ ), or if they  
 4 fought for a good authority and perceived more mayhem ( $M = 2.79; SD = 1.14$ ).  
 5

## 6 Discussion 6

### 7 Justification 7

8 Results partly confirm H1. If a video game frames virtual violence as justified,  
 9 players do feel *less guilty* and have *less negative emotions* than if the game frames the  
 10 action as unjustified (though justification seems to have no effect on enjoyment).  
 11 Contemporary violent video games often provide narratives that frame users' actions  
 12 as justified (Smith, 2006). Based on video game narratives, players often support a  
 13 just cause and thus act morally, by saving the world, restoring humanity, and fighting  
 14 the forces of evil. The results of the experiment support the view that these types  
 15 of narrative cues trigger moral disengagement when players enact virtual aggression  
 16 against quasi-social characters. Consequently, players may avoid or reduce unpleasant  
 17 outcomes associated with norm-violating aggression such as negative affect.  
 18

19 However, in this experiment, justification did not affect enjoyment. Justification  
 20 of virtual violence, as represented in the first-person shooter, may not influence  
 21 enjoyment directly (see Zillmann, 2000, for a different opinion). According to  
 22 our theoretical approach, justification directly suppresses the aversive feelings that  
 23 violating moral standards causes, but it is not considered to immediately increase  
 24 enjoyment. Rather, justification may influence enjoyment in an indirect way: Neg-  
 25 ative affect and guilt that result from unjustified actions probably undermine game  
 26 enjoyment. Justification seems to diminish such aversive states. The present experi-  
 27 ment supported this view, finding guilt to be negatively correlated with enjoyment.  
 28 Future research may discover that a stronger effect of justification on guilt and  
 29 negative feelings may in turn produce significant differences in game enjoyment.  
 30

### 30 Portrayal of consequences 30

31 H2 argued that if a violent video game does not portray the consequences of virtual  
 32 violence (or if it distorts them), players would feel less guilty, have less negative  
 33 emotions, and enjoy game play more than if the game portrays the consequences of  
 34 violent actions. Results concerning H2 are mixed. Contrary to H2, whether or not  
 35 the game portrayed consequences of virtual violence had no effect on players' reports  
 36 of guilt, negative affect, and enjoyment. That is, the bloodshed, screams, and dying  
 37 sequence of shot opponents seemed to have no impact on the playing experience  
 38 whatsoever. The null effects should be interpreted carefully, as the treatment-check  
 39 indicates a failed manipulation, though. However, if the manipulation only led to  
 40 unconscious perceptual processes (see "perceived mayhem," below), subjects may  
 41 not have been able to report the effects of the manipulation even if it had succeeded.  
 42

43 Nevertheless, a failed manipulation of the consequences portrayed is a plausible  
 explanation of the null effects. For example, because users had the ability to shoot

1 opponents from a substantial distance, the visibility of displayed bloodshed and 1  
2 victim suffering may have been low. The morally disengaging effect of long-distance 2  
3 weapons, previously discussed in literature (e.g., Todd, 2001), may have resulted in 3  
4 an ineffective manipulation. 4  
5

### 6 **Perceived mayhem** 6

7 The quasi-experimental examination of portrayed consequences indicated that users 7  
8 who perceived greater mayhem in the game felt more guilty and had more negative 8  
9 affect than users who perceived less mayhem. The effect could be a methodological 9  
10 artifact of the joint ex-post questionnaire assessment of perceived mayhem, guilt, 10  
11 and negative affect (e.g., an effect of social desirability). However, it also seems 11  
12 plausible that a description of the game play as “much mayhem” reflects one’s 12  
13 moral judgment. In contrast to players that perceived “no or less mayhem,” users 13  
14 that reported great mayhem could have perceived the violent game play as having 14  
15 greater moral importance which would explain why they experienced more guilt and 15  
16 negative affect. Consequently, negative affect was strongest for players that perceived 16  
17 much mayhem and fought for an unjust reason. 17  
18

### 19 **Enjoyment** 19

20 Interestingly, differences in perceived mayhem did not result in different levels of 20  
21 enjoyment, just as the manipulation of portrayed consequences and the justification 21  
22 of users’ actions revealed no effect on enjoyment. One explanation is that more 22  
23 mayhem, harsher consequences, and unjust norm-violating actions may promote 23  
24 both gratifications and costs (Raney, 2004). In violent video games, users are causal 24  
25 agents. Although causing more mayhem to quasi-social characters or breaking norms 25  
26 by unjust behavior seems to trigger higher costs (i.e., feeling of guilt, negative affect), it 26  
27 may enhance users’ pleasurable experiences of being effective (Klimmt & Hartmann, 27  
28 2006) and powerful as well. Producing mayhem may also foster excitement. Thus, 28  
29 in this study, the costs that resulted from a greater perception of troublesome 29  
30 consequences could have been balanced by enhanced gratifications. 30

31 Pleasurable gratifications and aversive costs of virtual violence may also explain 31  
32 the justification  $\times$  consequences interaction effect obtained in the analyses (Figure 1). 32  
33 Subjects who had some reason to feel they had done something wrong (because the 33  
34 action was either unjustified or resulted in harsh consequences) and that could still 34  
35 morally disengage at the same time (because the action was either justified or did 35  
36 not result in harsh consequences) reported the greatest enjoyment. Obviously, under 36  
37 these conditions, pleasurable gratifications (e.g., excitement that may partly result 37  
38 from norm-violation, as well as feelings to be effective and powerful) and aversive 38  
39 costs (negative affect resulting from violation of moral standards) reached a ratio that 39  
40 best suited overall enjoyment. Targeting quasi-social characters may be particularly 40  
41 thrilling for users, especially if *some* opportunity to morally disengage exists. In 41  
42 contrast, a video game that supports too much moral disengagement (e.g., no 42  
43 consequences, justified actions) may not be thrilling enough to be enjoyable, whereas 43

1 a game that makes it too hard to disengage (e.g., harsh consequences, no justification) 1  
 2 may trigger too much negative affect. Certainly, this interpretation is hypothetical 2  
 3 and needs further examination. Future research may connect the ideas presented 3  
 4 here to related approaches, for example, disposition-based theories of humor (e.g., 4  
 5 Zillmann, 2000), which shows that malicious Schadenfreude (while watching comedy) 5  
 6 is “exceedingly high when all ingredients of good comedy [are] present: despised 6  
 7 protagonists, their victimization, and humor cues that set the audience free to enjoy 7  
 8 these characters’ demise.” (Zillmann & Bryant, 1980, p. 49). In sum, the formation of 8  
 9 enjoyment in violent games and its interrelation with negative affect seems complex. 9  
 10 Future studies should apply finer distinctions of pleasurable gratifications versus 10  
 11 costly norm-violations to explain the overall enjoyment of violent games. 11  
 12 12  
 13 13

### 14 **General discussion** 14

15 The present studies provide a first step in the empirical study of moral disengagement 15  
 16 in violent video games and related feelings of guilt, negative affect, and game 16  
 17 enjoyment. The studies build on literature on moral disengagement (Bandura, 17  
 18 1990, 2002) and moral exclusion (Opatow, 1990) that we have incorporated in the 18  
 19 present approach to moral disengagement in violent video games. Our perspective 19  
 20 argues that contemporary video game characters are automatically perceived as 20  
 21 quasi-social entities, and thus hold the potential to “fall into the scope of justice” 21  
 22 (cf., Opatow, 1990, p. 3). Consequently, aggression against video game characters 22  
 23 may be considered unjust harm, which triggers guilt and negative affect that may 23  
 24 undermine enjoyment. We argue, however, that cues implemented in contemporary 24  
 25 violent video games effectively help players to disengage from moral concern 25  
 26 (cf., Raney, 2002; Zillmann, 2000). 26

27 Of the four cues that were tested experimentally (justification of violence, 27  
 28 neglect/distortion of consequences, dehumanization of opponents, condemnable 28  
 29 action of opponents), only *condemnable action of opponents* lead to less negative affect 29  
 30 in Study 1 and *justification* of violence diminished both users’ feeling of guilt and 30  
 31 negative affect in Study 2. According to the latter finding, fighting for a just rather than 31  
 32 an unjust cause reduces guilt and negative affect. Independent from the manipulated 32  
 33 moral disengagement cues, users’ *familiarity* with violent games reduced guilt and 33  
 34 negative affect in Study 1—perhaps due to learned cognitive strategies—and users’ 34  
 35 *awareness of the situation* as “just a game” or “just an experiment” reduced guilt and 35  
 36 negative affect in Study 2—in accordance with the proposed second mechanism of 36  
 37 moral disengagement in violent games. 37

38 Users’ *familiarity* with violent video games deserves further examination. 38  
 39 Participants in the present studies expressed a remarkably low interest in violent video 39  
 40 games. Accordingly, many participants had only little experience with playing violent 40  
 41 games. The lack of familiarity with violent games may have implied that the sample 41  
 42 overrepresented participants that could not readily access strategies to cope with 42  
 43 game play that evokes negative feelings, including guilt. In addition, experienced 43

1 players may be more desensitized than novice players (Carnagey et al., 2006) and may 1  
2 therefore be less responsive to information that is morally disturbing.<sup>3</sup> Accordingly, 2  
3 the present sample may have produced stronger levels of guilt and negative affect in 3  
4 response to the applied manipulations than a sample of experienced players would 4  
5 have produced. Future studies need to examine the influence of familiarity on guilt, 5  
6 negative affect (and eventually game enjoyment) further. One approach would be to 6  
7 simply compare experienced versus novice users of violent games. Another approach 7  
8 would be to apply a longitudinal design. 8

9 Both experiments found mixed results regarding *enjoyment* and suggest that the 9  
10 presence of moral disengagement cues may not only decrease aversive costs, but also 10  
11 diminish the pleasurable gratifications of virtual violence at the same time. While 11  
12 players' game enjoyment seems to decrease slightly if guilt and negative affect increase, 12  
13 results of Study 2 suggest that enjoyment is greatest if the virtual violence is deviant 13  
14 enough to induce excitement, but defensible enough to be considered just. Related 14  
15 research supports the hypothesis that media users sometimes simply enjoy being bad 15  
16 ("norm-violation theory," Raney, 2004; Tamborini, Stiff, & Zillmann, 1987), identify 16  
17 with bad guys (Konijn & Hoorn, 2005), and enjoy observing wrongdoing (Raney 17  
18 et al., 2006). Players of violent games may enjoy the thrill of socially unacceptable 18  
19 behavior as long as they have some reason (e.g., remembering that this is "just a 19  
20 game" or believing one's intents are good) to free themselves from guilt. 20

21 However, the present studies provide only the beginnings of the study of moral 21  
22 disengagement in violent video games. Future studies should avoid a couple of 22  
23 limitations and flaws of the current experiments. The two studies this paper presents 23  
24 were always applied in the same order to the student sample. Thus, we cannot rule out 24  
25 order effects (such as fatigue). Also, two of the four experimental manipulations failed. 25  
26 Future studies should pretest experimental manipulations with care, particularly 26  
27 because this area of research is still undeveloped. As the theoretical model proposed 27  
28 is still being formed, we are faced with the challenge of controlling all of the factors 28  
29 that may affect moral disengagement in a video game. Controlled factors may be 29  
30 confounded with the manipulation, as it happened in Study 1. Uncontrolled factors 30  
31 may overshadow the effect of experimentally manipulated factors. That may have 31  
32 occurred in the present studies as well, because we did not control all of the factors 32  
33 suggested in the theoretical model; for example, users' perception of opponents 33  
34 as a hostile outgroup (Leyens et al., 2001). Controlling this and other factors may 34  
35 have helped to unwrap the complex processes of moral disengagement a better way. 35  
36 Finally, the suggested relationship between guilt, negative affect, and game enjoyment 36  
37 needs further elaboration. On one hand, a closer look into emotion regulation and 37  
38 experience of conflicting emotions (Scollon, Diener, Oishi, & Biswas-Diener, 2005) 38  
39 may help substantiate the argument that negative emotions, including an aversive 39  
40 feeling of guilt, undermine game enjoyment. On the other hand, manipulations of 40  
41 moral disengagement that suppress aversive costs of virtual violence but leave the 41  
42 pleasurable gratifications of virtual violence need to be considered. 42  
43 43

1 In any way, pursuing the question of why virtual violence is enjoyable further 1  
2 promises to lead to both relevant and inspiring research. 2

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9 efforts to develop the video game stimuli applied in this study. 9

### 10 11 12 **Notes** 12

- 13 1 We followed traditional approaches to aggregate the data of both the DES-IV and the 13  
14 PANAS. Scores obtained by the DES-IV are usually aggregated in a mean index. The 14  
15 PANAS scores are traditionally summed. 15
- 16 2 Both measures are based on the idea that user's awareness that "this is just a game" or 16  
17 that "this is just an experiment" switches on or off during the exposure situation (Wirth 17  
18 et al., 2007). However, this binary state is aggregated to a continuum between "never... 18  
19 often" or "not at all... very much" if recalled in a retrospective questionnaire. 19
- 20 3 As median split may not be considered the best practice, we run additional regression 20  
21 analyses that employed a centered continuous quasi-experimental factor, an effect-coded 21  
22 experimental factor, and the interaction term of both factors. The analyses yielded 22  
23 similar results. 23
- 24 4 Another argument is that familiarity correlates positively with an increased awareness of 24  
25 the ongoing action as "just a game." Therefore, more familiar users may routinely be 25  
26 more aware that "this is just a game," and therefore may experience less moral concern. 26  
27 However, the data did not support this argument. Simple zero-order correlation 27  
28 between familiarity ("How familiar have you been with the game you just played?") and 28  
29 users' "this is just a game" belief ("While playing how much have you thought that this 29  
30 is just a game?") revealed no correlation in both studies ( $r = 0.091$ , *ns*, in Study 1; 30  
31  $r = 0.079$ , *ns*, in Study 2). The finding speaks against the argument that familiarity leads 31  
32 to an increased awareness of the artificial character of the gameplay. 32

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