1   GIBSON, DUNN & CRUTCHER LLP
    THEODORE J. BOUTROUS, JR., SBN 132099
2   H. MARK LYON, SBN 162061
    ETHAN D. DETTMER, SBN 196046
3   1881 Page Mill Road
    Palo Alto, California 94304
4   Telephone: (650) 849-5300
    Facsimile: (650) 849-5333
5

6   JENNER & BLOCK LLP
    PAUL M. SMITH
    KATHERINE A. FALLOW
7   MATTHEW S. HELLMAN
    601 13th Street, N.W., Suite 1200
8   Washington, D.C. 20005
    Telephone: (202) 639-6000
9   Facsimile: (202) 639-6066

10   Attorneys for Plaintiffs
    VIDEO SOFTWARE DEALERS ASSOCIATION
11   and ENTERTAINMENT SOFTWARE ASSOCIATION

12

13   UNITED STATES DISTRICT COURT

14   FOR THE NORTHERN DISTRICT OF CALIFORNIA

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16 VIDEO SOFTWARE DEALERS ASSOCIATION and ENTERTAINMENT SOFTWARE ASSOCIATION,	CASE NO. C 05-4188 RMW (RS)
17	**DECLARATION OF JEFFREY H. GOLDSTEIN**
18 Plaintiffs,	
19 vs.	
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21 ARNOLD SCHWARZENEGGER, in his official capacity as Governor of the State of California;	
22 BILL LOCKYER, in his official capacity as Attorney General of the State of California;	
23 GEORGE KENNEDY, in his official capacity as Santa Clara County District Attorney, RICHARD DOYLE, in his official capacity as City Attorney	
24 for the City of San Jose, and ANN MILLER RAVEL, in her official capacity as County	
25 Counsel for the County of Santa Clara,	
26 Defendants.	

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1.   This document was prepared at the request of the plaintiffs in *Video Software Dealers Association v. Schwarzenegger*. In addition to my professional knowledge of video games research, I reviewed the following documents: the State of California Violent Video Game Bibliography, State Defendants' Memorandum of Points and Authorities in Opposition to Plaintiffs' Motion for Preliminary Injunction, and the State Order Granting Plaintiffs' Motion for a Preliminary Injunction.

Biographical Information

2.   I received a PhD in psychology from Ohio State University, following which I was professor of psychology at Temple University (Philadelphia) from 1969 to 1992. Since 1992 I have been with the Department of Social and Organizational Psychology at Utrecht University, the Netherlands. In January 2006 I took early retirement but will continue to teach a course at Utrecht University. Among the books I have written or edited are *Aggression and Crimes of Violence* (Oxford University Press), *Toys, Play and Child Development* (Cambridge University Press), *Why We Watch: The Attractions of Violent Entertainment* (Oxford University Press), and the *Handbook of Computer Game Studies* (2005, MIT Press), for which I wrote a chapter on violent video games. My CV is attached to this Declaration.

3.   I am a Fellow of both the American Psychological Association and the American Psychological Society. I serve on advisory committees of the Netherlands Institute for the Classification of Audiovisual Media, responsible for rating films and television programs, and PEGI, the European video game rating system. I was coorganizer of the first international Digital Games Research Association congress in 2003 (www.digra.org). As a consultant, I summarize psychological research about play and media for clients.

4. In 2000 I submitted a document about violent video games to the United States Senate Commerce Committee and submitted written testimony in connection with *Entertainment Software Association. v. Blagojevich* (Illinois) in 2005.

5.   My research on aggression and entertainment tends to be conducted, not in an experimental laboratory with college students as participants, but in natural settings -in schools (Jukes & Goldstein, 1993), at movie theaters (Goldstein, Rosnow, Raday, Silverman, & Gaskell, 1975), at sports arenas (Russell & Goldstein, 1995), in prisons (Cooke & Goldstein, 1989), hospitals

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1   (Goldstein, Mantell, Derks & Pope, 1989), and a home for the elderly (Goldstein, Cajko, et al., 1997).

2   This reflects my belief that entertainment cannot readily be studied in the experimental laboratory.

3   6.   If one looks carefully at the body of research on violent video games, there is little that

4   is consistent or convincing. There is no compelling evidence that violent video games cause

5   aggressive behavior. Many reviews concur that inconsistencies and ambiguities in the research

6   prevent any sound conclusions about the effects of violent video games on aggression (Bensley &

7   van Eenwyk, 2001; Cumberbatch, 2001; Federal Trade Commission, 2000; Goldstein, 2005;

8   Griffiths, 1999; Gunter, 1998; Lager & Bremberg, 2005; Newman, 2004; Olson, 2004; Schechter,

9   2005; Unsworth & Ward, 2001; van Feilitzen, 2000).

10   7.   Many publications are highly selective in the literature they cite, often ignoring studies

11   with null or inconsistent results. For example, the State Bibliography is also highly selective. Missing

12   are articles that fail to find effects of violent video games, for example, Baldaro et al. (2004), Ballard

13   & Lineberger (1999), Fleming & Rickwood (2001), Graybill et al (1987), Scott (1995), Williams &

14   Skoric (2005).

15   8.   It is not the purpose of this statement to provide a comprehensive overview of research

16   on violent video games. Rather, a number of studies and literature reviews are presented that cast

17   doubt on the reliability, validity, and applicability of this research. Weak and inconsistent results,

18   dubious assumptions, questionable methods, and overgeneralizations from the data are noted in the

19   psychological research.

20   9.   Research on violent video games tends to suffer from inadequate samples,

21   questionable measures of aggresion (such as noise blasts) and aggressive thoughts/ cognition (such as

22   word completion tasks), the confusion of aggressive play with aggressive behavior, a focus on

23   immediate short-term effects, and participants who may not be unaware of the purpose of the

24   experiment. No evidence has been produced to suggest that video games are more influential than

25   other media, such as film and television, despite the often-repeated claim that their interactivity and

26   growing realism make them so. I am aware of no evidence that video games are more influential in

27   youth delinquency and crime than other factors such as poverty, inadequate parenting, the availability

28   of firearms, alcohol and drug abuse.

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Problems of definition – violence and "violence"

10. When people refer to 'violent video games' or 'violence in the media' they rarely distinguish between real violence – people hurting one another as in war or a slap in the face – and symbolic or fantasy violence, in which characters engage in mock battle. Psychologists define violence or aggression as the intentional injury of another person. However, there is neither intent to injure nor a living victim in a video game. The notion that players rehearse and are rewarded for committing violent acts is not literally true. No crimes are committed, there is no literal killing, only fantasy play. Aggressive themes have always been part of play and entertainment (Guttmann, 1998; Twitchell, 1989; Schechter, 2005), and even preschool children who enjoy them seem to be aware of the difference between real aggression and fantasy violence (Holm Sorensen & Jessen 2000, Holmes & Pellegrini 2005, Kirsh, 2006).

11.   Studies of elementary school children often fail to distinguish between aggressive play and aggressive behavior (for example, Irwin & Gross, 1995). After playing a martial arts video game, children, especially boys, are likely to engage in martial arts play-fighting. To some adult observers, the children appear to be acting aggressively when in fact they are playing, with no intent to injure anyone. An experiment by Cooper and Mackie (1986) of Princeton University found that, although violent video games influenced the post-game play of 10-11 year olds, the video games had no effect on interpersonal aggression. In their review of research on video games, Lager & Bremberg (2005) conclude that playing video games increases preference for aggressive toys, but has no effect on aggressive thoughts and no consistent effect on aggressive behavior.

How we know it is "violence" and not violence

12.   The same features that inhibit an opera audience from rushing the stage to prevent 'murder' are also present in video games. There are physical cues to the unreality of the violence before you, including the willing suspension of disbelief, and the knowledge that you have control over events, by pausing or stopping play altogether. In video games, there are sound effects, scorekeeping, a joystick or keypad in your hand, and often playmates commenting on the performance. Without background music, special effects, or fantasy characters, bloody images lose their appeal (McCauley, 1998). As with other forms of entertainment, such as film and literature, the

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violence in a video game is embedded in a fantasy narrative. However, in laboratory experiments

violent images are removed from the story context, and games are played for only a few minutes, thus

depriving them of a key play element.

How is aggression measured?

13.   It is not possible to observe real aggression in the laboratory, so researchers must

improvise indirect indicators of potential aggressive behavior. For example, the following have been

used in video game research as measures of aggressive cognition or aggressive behavior:

- hitting an inflatable 'bobo doll' (Schutte & others 1988)
- coding children's interpretations of ambiguous stories (Kirsh 1998)
- completing partial words: e.g. KI_ _[1] (Carnagey & Anderson 2005)
- listing aggressive thoughts and feelings (Calvert & Tan 1994)
- administering blasts of white noise to an unseen person, in a reaction time task[2] (Anderson & Dill 2000; Bartholow & Anderson 2002; Bartholow, Bushman & Sestir, 2006 in press).
- withholding money from another (Winkel, Novak & Hopson 1987)
- 'killing' characters in a video game (Anderson & Morrow 1995; Ask, Autoustinos & Winefield
- time elapsed to recognize aggressive words (Anderson & Dill 2000)

In my opinion these are inadequate measures of aggressive behavior or aggressive cognitions or

beliefs.

14.   According to Freedman (2001), it is difficult to do adequate experimental research on

violent video games. It is difficult to find two video games that are equal in all respects except one of

them contains violence and the other does not. Only then could we be sure that, if they have different

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[1]   This measure of aggressive cognition asks the participant to complete words, such as 'K I _ _.' Words like 'Kill' or 'Kick' would be regarded as an aggressive cognition, while 'Kiss' or 'Kind' would not be. But immediately after playing a violent video game, violence-related words would be more salient to players. If after playing an auto racing game the subjects had to complete the word 'C A –', they would probably be more likely to write 'CAR' than 'CAT' or 'CAP'. Calling this task a measure of 'aggressive thinking' or 'aggressive cognition' is unwarranted.

[2]   In the 'competitive reaction-time task' (CRT) the research participant competes with an unseen 'opponent' and can set the level of noise the opponent will receive should he or she lose the competition. The CRT resembles a violent video game, so it would not be surprising that those who play violent video games would also play this 'game' more aggressively. For further criticisms of these methods see Tedeschi & Quigley (1996) and Ritter & Eslea (2005).

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effects, this is due to the violent content and not to some other feature of the games, such as their

level of excitement, involvement, activity, or sound effects. Furthermore,

> *"when experimenters choose a violent game, they may be giving the message that they approve of such games and might therefore approve of or even expect the subjects to behave violently.... The possibility of [experimenter] demand causing the results is not unlikely or far-fetched. It is a well-known phenomenon in experimental research and a continual almost ubiquitous source of problems in interpretation... This leaves almost all of the results open to the alternative and uninteresting interpretation that they are caused by demand factors rather than the variable of interest, namely the direct effect of violence in the video game"* (Freedman, 2001).[3]

Selected reviews of research on violent video games

15.   Statements about the consistency of research data and consensus within the scientific community about the effects of media violence are incorrect.

16.   Many reviews of research on violent video games have concluded that the evidence of a causal connection between violent video games and aggressive behavior is weak or non-existent: Bensley & van Eenwyk, 2001; Cumberbatch, 2001; Federal Trade Commission, 2000; Goldstein, 2005; Griffiths, 1999; Gunter, 1998; Lager & Bremberg, 2005; Newman, 2004; Olson, 2004; Schechter, 2005; Unsworth & Ward, 2001; van Feilitzen, 2000.

Following (¶17 – 31) are selected comments by reviewers.

17.   Anderson & Dill (2000) review published studies on video games and aggressive behavior and note that every study suffers from flaws in methodology, ambiguous definitions, is open to alternative explanations, or reports inconsistent findings.

18.   Washington State epidemiologists Bensley & van Eenwyk (2001) note: *"At present, it may be concluded that the research evidence is not supportive of a major public health concern that violent video games lead to real-life violence."* Because of mixed results, the research indicates that at this time *"it is not known whether video game play affects aggression or hostility in this age group."*

19.   Cumberbatch (2001) reviewed research on violent video games for the (British) Video Standards Council (www.videostandards.org.uk). He writes that it is *"difficult to attach much value to studies that have failed to control for demographic differences such as age, social class and ethnicity, which are related to both video habits and to delinquency patterns."*

> *"The real puzzle is that anyone looking at the research evidence in this field could draw any conclusions about the pattern, let alone argue with such confidence and even passion that it demonstrates the harm of violence on television, in film and in video games. While tests of statistical significance are a vital tool of the social sciences, they seem to have been used more often in this field as instruments of torture on the data until it confesses something to justify a publication in a scientific journal. If one conclusion is possible, it is*

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[3]   It is possible to do videogame research of a high standard. One excellent example is the series of correlational and experimental studies by Green & Bavelier (2003) on violent video games and visual skills.

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that the jury is not still out. It's never been in. Media violence has been subjected to lynch mob mentality with almost any evidence used to prove guilt."

20.   The Federal Trade Commission (2000) report, *Marketing violent entertainment to children,* contained a review of research on the impact of violence in entertainment media. Concerning violent video games, the FTC concludes:

"Most researchers are reluctant to make definitive judgments at this point in time about the impact of violent electronic games on youth because of the limited amount of empirical analysis that has so far taken place. Although some surveys of the literature lean toward seeing a detrimental effect from playing violent video games, others are more skeptical."

21.   Griffiths (1999, pp. 209-210) concludes, *"The majority of studies on very young children tend to show that children become more aggressive after playing or watching a violent video game, but these were all based on the observation of free play."* [emphasis added]

22. In his overview of video game research, Gunter (1998, p. 109) concludes, *"Even with experimental studies, there are problems of validity that derive from the fact that they do not measure 'real aggression' but rather simulated or pretend aggression."*

23.   Child clinical psychologist and crime novelist Jonathan Kellerman calls media violence "the scapegoat we love to hate." Concerning juvenile crime he writes, " *If increased public safety is our goal, efficiency also dictates that we cease pouring money into research and clinical activities that have little direct impact upon rates of child criminality. A prime example of such diminished returns is the flood of studies conducted on the factor most often blamed for childhood criminality: media violence"* (1999, p. 71).

24.   An editorial in the British medical journal *The Lancet (1999,* p. 525) commented:

"It is inaccurate to imply that the published work strongly indicates a causal link between virtual and actual violence. Experts are divided on the subject…. The American Academy of Pediatrics' concerns seem woefully misplaced…. While future research may prove the danger of the media to children, we know already the harm that poverty, abuse, and weapons can have. Forced to choose between facing a teenager holding a firearm or his classmate clutching a video of a Quentin Tarantino movie we would all opt for the latter."

25.   A review of video game research by the Swedish Public Health Institute (Lager & Bremberg, 2005, www.fhi.se) examines research consisting of controlled experiments and prospective longitudinal studies. The following were studied in at least three experiments: spatial abilities, reaction time, aggressive play, aggressive thoughts/ interpretations, aggressive feelings and aggressive behavior. The studies of spatial abilities and reaction time were of high quality and consistently showed positive effects. The studies give limited support for video game playing leading to a choice of aggressive toys, but it is unclear how to best interpret this since the studies do not lend support for links between the players and aggressive feelings, thoughts or behaviors although many studies on this subject have been conducted. In addition to toy selection, three aspects of aggression were studied: aggressive feelings, aggressive thoughts and aggressive behaviors. In these studies the experimental group has generally played a violent computer game in a laboratory for 10-45 minutes, and afterwards the participants answered questions from standardized questionnaires or were placed in a situation where the researchers have been able to study their behavior towards another person. The subjects frequently had to punish the other person, for example, by playing loud sounds in his/her headphones.

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"These studies show expected effects only in studies where initial measurements have not been taken... An opposite effect has been shown on aggressive thoughts, i.e., a decrease in occurrences of aggressive thoughts in the group who played computer games" (p.13)

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"This implies, all in all, limited support that video and computer game playing cause children to choose more aggressive toys afterwards – but no support for links between computer game playing and aggressive feelings, thoughts or behaviors although these outcomes are well studied. The fact that the choice of toys is affected, points to the fact that the contents of the games are not passing by unnoticed by the children, but whether the choice of toys in the studies primarily should be interpreted as an expression of aggressiveness could perhaps, in the light of the other studies, be discussed" (p.14).

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26.　　Newman (2004) writes that attempts to link video games with horrific events such as shootings is political, as is the use of 'addiction' as a metaphor for repeated play. Newman notes the "inconclusive and often contradictory" findings of research, and the fact that "methodological flaws blight many of the studies," for example, there is no consistency in the definitions of violence and aggression. *"Glib statements relating aggression to game playing, whether appearing in the mass media or scientific journals, seem totally unwarranted"* (pp.67-68). The problem with research on violent video games, says Newman, is the idea that you can understand the effects of a video game from a superficial glance at its violent content (p. 69).

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27.　　Olson (2004), of Harvard Medical School, challenges statements about the relation between violent video games and real-life violence. She notes that between 1994 and 2001 there was a broad decline in juvenile arrest rates for violent crimes. *"There is no indication that violence rose in lockstep with the spread of violent games"* (p. 146).

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"Several academic studies (primarily experiments) have received broad coverage in the popular media and are cited by the press and some advocacy groups as evidence that video games create dangerous, aggressive thoughts, feelings, and behaviors. Local, state, and federal legislation, including criminal penalties for selling or renting certain games to minors, have been introduced based on these studies" (p. 146).

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"Here are some of the <u>limitations of current studies as a basis for policy making</u>...

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• *<u>Vague definitions of aggression.</u> "Aggressive play that follows exposure to games or cartoons containing violence is not distinguished from aggressive behavior intended to harm (Irwin & Gross, 1995; Silvern & Williamson, 1987). Aggressive thoughts, feelings, and behaviors may be presented as equivalent in importance and treated as valid surrogates for real-life violence, with the assumption that reducing these factors will reduce harm"* (p. 146).

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• *<u>"Use of violent media is not put into context with other known</u> contributors to aggression or violence.... According to public health and juvenile justice research, the strongest childhood predictors of violence are involvement in crime, male gender, illegal substance use, physical aggressiveness, family poverty, and antisocial parents"* (p. 147). Another problem is that *"most children who are aggressive or engage in antisocial behavior do not grow up to be violent adolescents or adults"* (p. 147).

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- *"Test conditions that are difficult to generalize to the real world."* Subjects may have only 10 minutes to play a game in an experiment. Young people commonly play games with others. (p. 147)

- *"Small, nonrandom, nonrepresentative samples"* *(p.* 147). Experiments that rely on college students as participants may be unable to tell us much about the effects of video games on those who typically play them, or their effects on youth. Experiments with college students may be uninformative about the effects of video games on young people under the age of 18. [The heavy reliance on college students as subjects in experiments is regarded by some psychologists as a weakness of psychological research that limits its generalizability (Jaffe, 2005).]

- Potentially *"moderating factors, such as age or developmental stage, are often not considered"* *(p.* 147).

- *"Study findings are combined in ways not appropriate for policy use"* *(p.* 147). Given the different populations, measures, and exposures, it is inadvisable to combine them in a single meta-analysis.

Olson speculates that violent video games may have indirect effects on more subtle forms of antisocial behavior, such as bullying. But this has not been studied. *"We might take a lesson from America's history of media hysteria.... As with the entertainment media of earlier generations, we may look back on some of today's games with nostalgia, and our grandchildren may wonder what the fuss was about"* (p. 149).

28.   Rhodes (2000) asks,

"Is there really a link between entertainment and violent behavior? The American Medical Association, the American Academy of Pediatrics, and the National Institute of Mental Health all say yes. They base their claims on social science research that has been sharply criticized and disputed within the social science profession, especially outside the United States. In fact, no direct, causal link between exposure to mock violence in the media and subsequent violent behavior has ever been demonstrated, and the few claims of modest correlation have been contradicted by other findings, sometimes in the same studies.... If we want to reduce (violence) even further, protecting children from real violence in their lives – not the pale shadow of mock violence -- is the place to begin" *(Rhodes, 2000).*

29.   Schechter (2005) in his history of violent entertainment notes, *"Nearly all the studies that purport to show a link between exposure to media violence and aggressive behavior are afflicted with significant problems, ranging from methodological flaws to bizarre assumptions about the way the human imagination processes and makes use of fantasy. To begin with, they tend to be conducted under highly artificial conditions that bear no resemblance to a child's actual day-to-day experience.... There is an enormous difference between real aggression that is meant to inflict harm on another person and the kind of rough-and-tumble horseplay that young males have gleefully engaged in from the inception of the species"* (pp. 151-152).

30.   Southwell & Doyle (2004) write,

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"When pundits -- and some researchers -- proclaim electronic games either altogether good or altogether bad for society, they often miss theoretical subtleties that if considered would allow us to see both the boon and the burden of the emerging technology and point to important future possibilities. Most important, these critics often fail to recognize that variability exists at different levels of analysis and in the interactions: between players, between games, between contexts, and so forth" (p. 391).

"Are there unique aspects of electronic game use that negatively affect school performance? ... As is often the case with media studies, the causeeffect link is tenuous. Are there certain aspects of games themselves, or of some categories of games, that can affect cognitive functioning? Consideration of this question yields some surprising answers: There is reason to believe that interaction with electronic games actually might offer some positive benefits' (p. 393).

"What about violence? Several exhaustive reviews of available games literature reach somewhat different conclusions. Anderson & Dill (2000) and Anderson & Bushman (2001) highlighted a distinct role for electronic games in promoting violence. Anderson and Bushman's meta-analysis suggests that available experimental evidence supports the conclusion that violent video games encourage aggression. But the Federal Trade Commission (2000), Bensley & Van Eenwyk (2001), and others were more tentative in their conclusions, often arguing that the evidence is insufficient for either a yea or nay conclusion. Moreover, we should be mindful of the possibility that available literature is biased by the historical reticence of some journals to publish null findings' (p. 394).

31.   Unsworth and Ward (2001) conclude,

"The inconsistencies in the findings of a vast body of research and the rate of advancement in video game technology make it difficult to draw any firm conclusions about the relationship between exposure to video game violence and aggressive behavior."

Weak, null and inconsistent data

32.   Many correlational studies have failed to find statistically significant relationships between frequency of playing video games and emotional or behavioral problems (Colwell & Payne, 2000; Gibb, et al., 1983; Kestenbaum & Weinstein, 1985; McClure & Mears, 1986; Winkel, et al., 1987), or no significant relationship between the amount of time children spent playing video games and aggressive behavior (Funk, Hagan, et al., 2002; van Schie & Wiegman 1997).

33.   Experiments that fail to find any effects of violent video games on aggressive behavior or aggressive cognition include Ballard & Lineberger (1999); Graybill, Strawniak, Hunter & O'Leary (1987); Kirsh (1998); Winkel, et al. (1987); and Williams & Skoric (2005). [Only one of these, Kirsh 1998, is included in the State Bibliography. See ¶7.]

34.   Even research said to support a link between violent video games and aggressive behavior is not as convincing as is sometimes portrayed (for example in Anderson, Berkowitz, et al., 2003). For example, in the study by Irwin & Gross (1995), boys played a violent or nonviolent video game for 20 minutes and were then observed during play with another boy. Physical aggression was defined as hitting, shoving, punching, pulling at clothes, kicking, pulling hair, and throwing or smashing objects. Verbal aggression included threats of physically aggressive acts. These were indeed greater after boys played a violent video game. However, it is not clear whether aggressive-play, in which boys pretend to kick and threaten, was distinguished from genuine

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threats and aggression. Nor did they examine the various aggressive acts separately, so we do not know whether there was any hitting, shoving, punching, kicking, or hair pulling with intent to injure. Irwin & Gross (p. 347) write, *"Although specific forms of physical aggression were not measured, review of the video tapes suggested that many of these physically aggressive acts were direct imitations of the behavior modeled by the video game characters. Subjects often engaged in fantasy play, assuming the role of one of the video game characters and pretending to physically harm an evil villain or formidable opponent."* About the increase in verbal aggression, they write (p. 348) *"apparently much of the verbal aggression toward the confederate during free-play was related to fantasy play."* In other words, the boys were playing, not fighting.

35.   The Anderson & Dill (2000) studies are also cited as evidence of the effects of violent video games (for example in Anderson, Berkowitz et al. 2003). Anderson & Dill (2000) examined both the correlates of playing violent video games, and conducted an experiment on the effects of violent video games. In their correlational study, a significant relationship was found between self-reported aggression and exposure to violent video games. This does not mean that video games cause aggression. It may be that aggressive individuals are drawn to violent video games, or that some unknown factor is responsible for both aggressive behavior and attraction to violent video games.

36.   In the experiment by Anderson & Dill, college students played a violent video game *(Wolfenstein* 3D) or a nonviolent game *(Myst)*. Women and men played each assigned video game 3 times for 15 minutes per time. The researchers' measure of 'aggressive thoughts' was the time it took to recognize aggressive words (for example, 'murder') flashed on a computer screen. Aggressive thoughts were not measured directly in this experiment, only reaction time to words flashed on a screen.

37.   The average reaction time to aggressive words was faster among those who had played the violent video game. Anderson & Dill interpret this to mean that *"the violent video game primed aggressive thoughts. This result suggests one potential way in which playing violent video games might increase aggressive behavior, by priming aggressive knowledge structures" (p. 786)*. Calling the recognition of aggression-related words 'aggressive thoughts' and aggressive 'knowledge structures' does not mean that there is any connection with aggressive beliefs, intentions or behaviors.

38.   Participants who had played *Wolfenstein* 3D delivered significantly longer noise blasts after losing trials than those who played the nonviolent game *Myst*. There was no effect on the intensity of noise blasts delivered to the 'opponent.' Yet Anderson & Dill conclude, *"Playing a violent video game increased the aggressiveness of participants after they had been provoked by their opponent's noise blast" (p. 786)*. Anderson & Dill focus exclusively on the trivial finding that people who played the violent video game depressed a noise button longer than those who played *Myst,* and they ignore the fact that there was no difference in the intensity of noise delivered to the opponent.[4] This is hardly convincing evidence that violent video games cause aggressive behavior.

39.   Experiments that measure hostility and a 'hostile attribution bias' after playing violent video games sometimes find no effects (e.g., Anderson & Ford, 1986; Baldaro et al. 2004; Scott, 1995; Sheese & Graziano, 2005). Anderson & Ford (1986) did not find that university students who played a 'highly aggressive' video game were more hostile than a group that played a less aggressive game. Scott

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[4]   In contrast, a study by Bartholow & Anderson (2002) using a similar research design found significant effects for intensity of noise blasts but not for duration. In both studies the researchers conclude that violent video games affected aggressive behavior, but they could just as easily have concluded the opposite, since in each study one of these two measures was significant while in the other it was not. In a study by Bartholow, Bushman & Sestir (2006), a combined noise intensity and duration measure was used, but intensity and duration are not reported separately.

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(1995) measured the aggressiveness of university students with the Buss-Durkee Hostility Inventory and the Eysenck Personality Questionnaire. No significant differences in aggressiveness were found between students after playing a nonaggressive, a moderately or a highly aggressive video game. Scott concludes that there is a *"general lack of support for the commonly held view that playing aggressive computer games causes an individual to feel more aggressive."* Baldaro et al. (2004) failed to find an increase in hostility following play of a violent video game.

40.   Some studies find an <u>inverse relationship</u> between violent video games and aggressive behavior. For example, a study in Japan found that a preference for aggressive video games was associated with <u>lower</u> aggression scores, *"and this raises questions for the causal hypothesis"* (Colwell & Kato 2003).

41.   In a meta-analysis Sherry (2001) reports an inverse relationship between the amount of time spent playing violent video games and aggressive behavior -- the <u>more time spent playing violent video games, the less aggression.</u> Sherry writes, *"The results suggest that playing even the most violent of games for extended times may not increase aggression.... Parents' intuitive reaction to limit playing time may actually be counterproductive, pulling the child from the game at a time when the largest aggressive effects are likely."* If allowed to continue playing, Sherry implies, the aggression would subside.

42.   If violent video games are a cause of aggressive behavior, there should be a dose-response relationship between exposure to violent video games and their aggressive effects, with greater exposure resulting in more aggressive behavior. However, in the Sherry (2001) meta-analysis, playing time was a negative predictor of aggression ($r = -.19$). That is, the more one played violent video games, the weaker the relation to aggressive behavior. In studies by Ballard & Lineberger (1999), Scott (1995), and Winkel et al. (1987), the level of aggressive content in video games bore no relation to the level of subjects' aggressive behavior afterwards.

43.   In a study by Funk, Buchman and others (2003), playing a violent versus a non-violent game did not affect aggression in a group of 5 to 12 year old boys and girls. Those children who played a violent video game did not differ in either aggression or empathy scores from children who played a nonviolent video game. Neither was longterm exposure to violent video games associated with aggressive responses to story vignettes.

44.   In an Australian experiment (Fleming & Rickwood 2001), boys and girls age 8 to 12 years played a violent or a nonviolent video game for 4 minutes. Measures of arousal, heart rate, and aggressive mood were assessed. According to the researchers, the results *"offer no support for the hypothesis that children will report more aggressive mood after playing violent video games. There is also no statistical evidence to support the hypothesis that this effect would be stronger for boys than for girls."* In fact, they found that *"mood was significantly more positive after playing the violent game than after the paper-and-pencil game."*

45.   A longitudinal study of violent video games by Williams & Skoric (2005), enlisted more than 200 people from 14 to 68 years old who had not previously played online multiplayer role-playing games. Some of them were randomly assigned to play a violent computer game for at least 5 hours a week for one month. Pre- and post-play measures included normative beliefs in aggression, and questions about aggressive social interactions (getting into a serious argument). Based on Anderson's General Aggression Model, the researchers predicted increases in aggressive beliefs and aggressive behavior following one month of play. *"Despite a robust exposure that averaged 56 hours over the month of the study, the results did not support the hypotheses. Simple correlations between hours played and the three dependent variables were non-significant... Game play – controlling for gender, age, and time1 aggression scores –*

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was not a significant predictor of aggressive cognitions. Compared to the control group, participants after the experiment were not statistically different in their normative beliefs on aggression than they were before playing the game. Similarly, game play was also not a predictor of aggressive behaviors" (p. 226).

Comparisons of the effect of video games to other media

46.   According to the State there is *"substantial evidence"* that the interactive nature of video games *"poses a special risk of harm to minors beyond the passive viewing of television or movies."* It is argued that violent video game exposure could have a stronger impact on the player than violent television or movie exposure because of the active involvement of the player, identification with violent characters, and reinforcement of violent actions (American Psychological Association, 2005, http://www.psychologymatters.org/videogames.html). But there is no evidence to support these contentions. In Sherry's (2001) meta-analysis, the effect of violent video games on aggression was smaller than that of televised violence.

47. According to Schechter (2005, p. 156), one *"charge commonly made against video games – that they are far more insidious than oldfashioned juvenile pastimes because they are more 'interactive' – holds little water. Nothing was more interactive than the 'violent' play of my own 1950s boyhood, when our targets were not animated pixels but live human beings who would shoot back at us with cap pistols, dart guns, ping-pong-ball rifles, and rubber-tipped arrows."*

48.   Holm Sorensen & Jessen (2000, pp. 120-121) write,

"[Interactivity], which is usually described as a problem in relation to violent computer games – the fact that the player himself must conduct violent deeds – actually makes children aware that their actions take place in a fictitious universe. For children, computer games are in fact 'games' with their own rules. From an early age, they are aware that these rules do not apply outside the realm of the game, with the exception that children can include elements and rules from the games in their play."

49.   As a unique medium, video games differ from television and film not only in their interactivity, but also in the nature of their stories, their open-endedness, the control and choices afforded players, and in their ability to satisfy different needs of their users.

Thus there are compelling theoretical reasons to believe that video games may have less emotional impact on players because, in a video game, the player has control over the action and in many cases over the story line. This sense of control may mitigate any negative effects that video game content might have.

Control as a moderator of videogame effects

50. Video games begin, pause and end at the will of the player (with the exception of experiments in which people are compelled to play them). One of the attractions of video games is the control afforded to players (Grodal, 2000). Control moderates the reactions associated with task performance under stressful conditions (Peters, Godaert, et al., 1998; Weinstein, Quigley & Mordkoff, 2002).

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51.   In describing the magnitude of media violence effects, they are sometimes compared to health hazards like smoking and cancer.[5] But more relevant would be the comparison of exposure to media violence and other factors known to affect youth violence – harsh and inconsistent parenting, peer rejection, antisocial peers, the availability of firearms... (Ferguson, 2002; Leary et al. 2003; Pettit 2004).

What's missing from experiments on video games?

52.   Criticisms of the methods used in laboratory experiments of aggression have been made many times (Freedman, 2002; Gauntlett, 2001; Olson, 2004; Ritter & Eslea, 2005; Tedeschi & Quigley, 1996). For example, the cover stories given to participants about the nature of the experiment and the justifications for exposing them to violent media could lead participants to give more shock or noise blasts for prosocial reasons (to help the experimenter, for example), and not in order to cause harm. Ritter & Eslea (2005) suggest that future laboratory aggression researchers should consider: The perceptions and motivations of the aggressor; the apparent distance between the aggressor and the target; the availability of non-aggressive response options; the problems of demand characteristics and permissive cues.

Play

53.   Play is a voluntary, self-directed activity (Garvey 1991), an experience that probably cannot be duplicated in a laboratory experiment. In video game research, the duration of play is too short for anything like the play experience to be replicated. Being required to play a violent video game on demand for ten or twenty minutes is not 'playing.' Experimental research does not recognize the fact that people who play violent video games freely engage in play, and are always free to pause or stop. They enter an imaginary world with a playful frame of mind, something entirely missing from laboratory studies of video games. One of the pleasures of play is this very suspension of reality (see ¶58 below, Jansz). Laboratory experiments cannot tell us the effects of playing video games because there is no sense in which participants in these experiments are playing.[6]

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[5]   A critique of the smoking-cancer:media violence analogy is presented by Ferguson (2002, p. 446): *"Comparing media violence research with that on smoking is a powerful polemic.*

[6]   *However, it is not clear that research on media violence has reached the no-reasonable-doubt point that was reached by cigarette research.... [I]s media violence a necessary and sufficient cause of violent behavior? ... 1. Humans are by nature a violent species and may demand violence in their entertainment. Violent media, then, are not a necessary precursor to violent behavior. 2. Unlike lung cancer, which is rare outside of individuals not exposed to cigarette smoke or other inhaled carcinogens, violent behavior is common in the absence of violent media, whereas many who are exposed to violent media demonstrate no violent behavior. Violent media, then, are not sufficient to cause violent behavior. 3. The effect sizes of media violence research are small. They account for only a small fraction of the variance in violent behavior."* Furthermore, medical research tends to use a double-blind procedure, where the researchers collecting the data are unaware of the study's hypotheses. There is a rejoinder to this comment by Anderson & Bushman, 2002.

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Intention to harm

54.   Researchers define aggression as the intention to harm another, but we do not know the intentions of subjects in laboratory experiments (because no one asks them). In observational studies of children's play (e.g., Irwin & Gross, 1995), it is unclear whether the verbal or physical aggression observed has an injurious intent or whether it is merely play fighting.

The social character of video games

55.   People play video and computer games in groups, and they tend to talk about games with their friends. Many boys play violent video games because it is expected of them by their peers, just as many adult men follow sports because it is socially useful to do so. In *Video Kids,* Provenzo (1991, p. 58) notes, "Pool, *pinball, or video games allow a means by which to establish hierarchies of skill and ability, and ultimately leadership.*" But participants in experiments are treated as individuals divorced from their social world.

56. Why aren't researchers themselves affected by their long-term cumulative exposure to media violence? I believe they can tolerate media violence because their exposure serves a higher purpose, namely, the advancement of science. Young people who play violent video games may also have a higher purpose – to learn about a game because their peers talk about it, to become expert in a peer-valued activity, to experience excitement, to distract themselves from pain and suffering. I believe people use violent entertainment for their own purposes, and that these vary from person to person.

Might violent video games help children cope with anger?

57.   Olson (2004) and Salonius-Pastenak and Gelfond (2005) note the need for research on potential benefits of violent games for some children and adults. For everyone who may be influenced negatively by violent video games, there may be an equal number of people who use video games to distract themselves from anger, in the same way that an active sport, or counting to 10, can help a person cope with anger or other unpleasant emotions (van Salisch & Bretz, 2003).

58.   Jansz (2005) writes that violent video games are "private laboratories in which an adolescent can experiment safely with the uncertainty of his identity and emotions.... He can choose to experience a wide range of emotions by confronting himself with emotional game situations.... Playing a violent video game also enables an adolescent to experience emotions that are problematic for him in ordinary life and allows him to come to terms with uncertainties about his identity" (p. 231). Violent video games enhance "the gamer's potential to cope with the inevitable insecurities of adolescence" (p. 237).

Additional comments on documents in this case

59.   According to the State *"automatic aggressiveness, increased aggressive thoughts and behavior, antisocial behavior, desensitization, poor school performance, reduced activity in the frontal lobes of the brain – each causes distinct harm to the developing minds of minors. And prevailing social science points directly to violent video games as a **major** culprit"* (emphasis added). But we do not

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know whether video games are a 'major' culprit compared to other factors, such as poverty, diet, and so on, involved in poor school performance and aggressiveness.

60.   The State notes that the California Psychological Association advised that research *"points overwhelmingly to a causal connection between media violence and aggressive behavior __in some children...__"* (emphasis added). Just which children may be at risk is unclear from the existing research. Who is most at risk, males or females, young or old, novice or experienced players, those with high IQ or low?

61.   The State refers to a 2004 meta-analysis by Anderson, in which studies with 'best practices' are distinguished from others with weaker methodologies. However, what Anderson refers to as the better studies in terms of method still contain significant flaws. People cannot play on demand. Using a video game not of your choosing for 10 or 20 minutes, in an unfamiliar environment has little to do with playing video games. Whatever it is that experiments are studying it is not 'playing video games.' Games that are equated on excitement or interest may still differ on other crucial dimensions, such as their storyline, interactivity, or controllability. In laboratory experiments, even when the purported target of aggression is another human, the validity of the measures is still questionable.

62.   The State notes that since video games are 'exemplary teachers' they must also be exemplary teachers of violence. I do not believe that video games teach or reinforce aggressive behavior because there is no actual aggressive behavior that takes place. Players are not acting aggressively, they are not rehearsing aggressive behavior, they are playing a game with violence as a theme. They might learn scripts from the way these games are played, but there is no indication that they are motivated to act them out except in play or fantasy.

Conclusion

63.   Existing research on violent video games is inconsistent, ambiguous, and insufficient to allow one to draw conclusions concerning the effects of violent video games on the aggressive behavior of young people. I remain unconvinced that the evidence to date points to the conclusion that violent video games cause aggressive behavior, and doubt whether the research tools available to social psychologists are capable of providing an answer. The continued controversy over the effects of media violence in the scientific community attests to the fact that the data are not conclusive.

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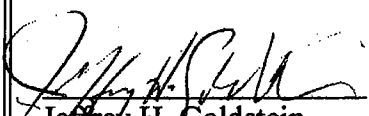
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DECLARATION OF JEFFREY H. GOLDSTEIN

I declare that the foregoing statement is true and correct.

March 6, 2006

Jeffrey H. Goldstein

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