

# **Testimony Submitted to the Committee on Commerce, Science, and Transportation**

**United States Senate**

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**“Intereactive Violence and Children”**

## **Background**

Concern about video game violence is not new. There were calls to ban violent games as early as 1976 when *Death Race*, often acknowledged as the first violent video game, appeared on the market. Of course, the violence in *Death Race* seems tame in comparison with today’s “first person shooters.” As technology advances, each generation of violent games became more graphic and extreme. The processing power of video game platforms has increased an astonishing 188 fold in the past seven months. The goal of creating virtual experiences draws ever closer. The addition of sexual material and crude language raises additional worries.

As the annual report cards issued by the National Institute on Media and the Family have shown, the most violent games still find their way into the hands of millions of children and teens. Since these games have become implicated in the string of recent school shootings, concern has reached new heights. This testimony brings together some of the findings from research to determine if these concerns are justified. In addition it provides findings from ongoing research being conducted at the National Institute on Media and the Family.

## **Review of Research Literature**

The first thing we learn from the research is that it is the younger children who spend the most time playing games. According to one study, the time spent playing video and computer games peaks between the ages of eight and thirteen (Roberts, 1999). A study we completed at the National Institute on Media and the Family found a similar pattern with game playing time peaking between eight and fifteen (Gentile and Walsh, 1999). We also know that youth, especially boys, gravitate to the “action games,” which include the “first person shooters.” In one study 50% of boys listed violent games as their favorites (Buchman and Funk, 1996). A growing number of children and teens now have the technological skills to customize the computer games. A recent development is putting “skins” on the characters in the games. This means that the player can insert the images of real people and places thereby making the games even more realistic.

Many pre-teens and young teenagers therefore spend a significant amount of time playing electronic games, with a preference for the violent ones. We also know that they have easy and frequent access to increasingly violent and realistic games. The next important question is, of course, "What are the effects of this?" Because the ultra-violent games are relatively new, the research literature is just beginning to accumulate. Research findings appearing in the 1980s and early 1990s are irrelevant because those studies did not include the types of violent games that have proliferated in the past six or seven years. For the last few years most experts have pointed to the vast body of research on television violence. That research clearly shows that a heavy exposure causes negative effects on children (Walsh, Brown, and Goldman, 1996).

Because there has been so little relevant research specifically focusing on electronic games, some state that there is no demonstration of harm to children. That, of course, was the same argument used to defend television violence for more than three decades. It was only after many years of research that that argument was abandoned. That argument, however, will become harder to maintain with regard to electronic games, because some important research findings are starting to appear that support the contention that the violence in computer and video games may indeed have a harmful effect.

I would like to highlight the findings of two research projects that found similar results independently. The first project was done by our collaborator Paul Lynch at the University of Oklahoma Medical School. Lynch has been studying the physiological reactions of teenagers to video games for ten years. He found that violent video games caused much greater physiological changes than non-violent games. The changes were found for heart rate and blood pressure as well as the aggression-related hormones, adrenaline, noradrenaline, and testosterone. A very important finding in Lynch's research is that the effect was much greater for males who pretested high on measures of anger and hostility. In other words, the violent games do not seem to affect everyone the same. Angry youth react much more strongly to violent video games than do more easy-going kids (Lynch, 1999).

This finding was confirmed in a sophisticated research project completed by Craig Anderson of Iowa State University and Karen Dill of Lenoir-Rhyne College. In my judgement, Anderson and Dill have executed the best study of video game violence to date. It will be published in its entirety in a forthcoming issue of the *Journal of Personality and Social Psychology*. They conducted two separate studies, one of which was an experiment.

In the first study they found a positive correlation between real-life aggressive behavior and violent video game play. In addition, they discovered that violent video game play was correlated with delinquency. Like Lynch, they also found that the correlation was much stronger for individuals who are characteristically aggressive. It is also noteworthy that Anderson and Dill found that the college students who spent the most time playing video games had the lowest grade point averages.

Correlational studies are important but do not establish a causal link. It could be that aggressive people who get into more trouble prefer violent video games. To begin to address the causal question, the two researchers designed an experiment. They used games of the same difficulty thereby ruling out frustration as a reason for aggression that might result from playing a violent game. Those students randomly assigned to play a violent game showed increases in aggressive thoughts and aggressive behavior. The students assigned to a non-violent game did not.

### **National Institute on Media and the Family Study on Computer and Video Games- Preliminary Results**

Douglas Gentile, Ph.D., Director of Research at the National Institute on Media and the Family in collaboration with Paul Lynch of the University of Oklahoma and myself have designed a program of research to determine the effects of video and computer games on children and teens. While the program of research will take a number of years and sufficient funding to complete, I am able to report preliminary findings in this testimony.

These results are based on responses to a survey administered to 137 teens in grades 8-12 in a large suburban school district near a large midwestern city. 94 were students in general classes. 43 were students in a special program for “at risk students.”

#### **Electronic Game Habits**

- ◆ 84% of teens overall play electronic games. 92% of boys play games.
- ◆ The average teen plays video games for 1 hour at a sitting (does not include teens who don't play)  
Among boys only, the average length of game play at one sitting is 84 minutes (almost 1 ½ hours)
- ◆ 25% of teens who play games say they understand all of the ESRB ratings, with an additional 29% saying they understand some of them.
- ◆ Only 15% of teens say that their parents understand the ESRB ratings.
- ◆ 90% of teens say their parents “never” check the ratings before allowing them to buy or rent video games (another 8 percent say their parents “rarely” check the ratings).
- ◆ Only 1 percent of teens who play games say their parents have ever kept them from getting a game because of its rating.
- ◆ Only 56% of teens who own their own games say that their parents know all of the games they own. Only 46% of boys who own their own games say that their parents know all of the games they own.
- ◆ 14% of teens (18% of boys) who own their own games say they have games their parents wouldn't approve of if they knew what was in them.
- ◆ 32% of boys who play video games download video games from the Internet.
- ◆ 25% of teens (41% of boys) say they have played so much that it interferes with their

homework.

- ◆ 13% of teens (21% of boys) say they have done poorly on a school assignment or test because they spent too much time playing video games.
- ◆ 89% of teens (91% of boys) say that their parents “never” put limits on how much time they are allowed to play video games.
- ◆ 42% of teens (52% of boys) say that they sometimes try to limit their own playing, but only 70% of them (67% of boys) are successful in limiting their own playing.
- ◆ The average teen likes a moderate amount of violence in their video games (median = 5 on a scale of 1 to 10). Among boys only, the average teen likes a fair amount of violence in their games (median = 7 on a scale of 1 to 10).
- ◆ Over three-quarters (77%) of boys who play video games at least “sometimes” customize the video games they play.
- ◆ 41% of boys at least “sometimes” visit game sites on the Internet, and 32% of boys at least “sometimes” play video games over the Internet.
- ◆ 15% of teens (29% of boys) say they have felt like they were addicted to video games.
- ◆ Among boys only, teens spend an average of 19 hours/week watching TV, 10 hours/week playing video games (includes teens who play zero hours), 18 hours/week listening to music, and 1 hour/week reading for pleasure. (When teens who never play are removed, the average time/week playing video games is 11 hours.)
- ◆ Among at-risk boys only, teens spend an average of 25 hours/week watching TV, 16 hours/week playing video games (includes teens who play zero hours), 19 hours/week listening to music, and slightly more than 2 hours/week reading for pleasure (138 minutes). (When teens who never play are removed, the average time/week playing video games is 16 ¼ hours.)
- ◆ Boys expose themselves to more video game violence than girls, and at-risk teens expose themselves to more video game violence than general students (defined from violence levels of 3 favorite games and frequency of playing each--based on Anderson & Dill approach)

### **Effects: School Performance**

- ◆ Amount of time playing video games has a negative impact on school performance, by many different measures: Teens who play more each week, play more yearly, and have played more over their lifetimes perform more poorly in school (as self-reported) than teens who play less.
- ◆ Teens who say they like to have more violence in their games perform more poorly in school than teens who like less violence.
- ◆ Teens who named more violent games as their favorite three games perform more poorly in school than teens who named less violent games as their favorites.
- ◆ Teens who expose themselves to more violence in video games perform more poorly in school than teens who expose themselves to less violence in video games.

### **Effects: Arguments with Teachers**

- ◆ Teens who prefer more violence in their video games get into arguments with their teachers

more frequently than teens who prefer less violence in their video games.

- ◆ Teens who expose themselves to more violence in video games argue more frequently with their teachers than teens who expose themselves to less violence in video games.

### **Effects: Physical Fights**

- ◆ Amount of time playing video games is positively correlated with getting into physical fights, by many different measures: Teens who play more each week, play more yearly, and have played more over their lifetimes are more likely to have gotten into a fight in the past year than teens who play less.
- ◆ Similarly, teens who say they are more familiar with video games are more likely to have gotten into a fight in the past year than teens who are less familiar with video games.
- ◆ Teens who prefer more violence in their video games are more likely to have gotten into a physical fight in the past year than teens who prefer less violence in their video games.
- ◆ Teens who named more violent games as their favorite three games are more likely to have gotten into a physical fight in the past year than teens who named less violent games as their favorites.
- ◆ Teens who expose themselves to more violence in video games are more likely to have gotten into a physical fight in the past year than teens who expose themselves to less violence in video games.

### **Significant Differences between General and At-Risk Teens**

- ◆ At-risk teens perform more poorly in school.
- ◆ At-risk teens name more violent games as their three favorite video games
- ◆ At-risk teens get into arguments with parents, peers, and teachers more frequently than general teens.
- ◆ Among boys only, at-risk boys are less likely to say they usually feel “positive” after playing video games.

### **Some Significant Differences between Boys and Girls**

- ◆ Boys are more familiar with video games than girls.
- ◆ Boys play more frequently than girls.
- ◆ Boys are more likely to own their own games than girls.
- ◆ Boys play longer at each sitting than girls (means = 84 and 40 minutes, respectively).
- ◆ Boys like more violence in their video games than girls.
- ◆ Boys play more each week than girls (means = 10 and 3 hours, respectively).
- ◆ Boys name more violent games as their three favorite games than girls.
- ◆ Boys expose themselves to more video game violence than girls.

These sample sizes provide data accurate to  $\pm 10\%$  when generalizing to general populations of teens, and to  $\pm 17\%$  when generalizing to at-risk populations of teens.

Additional studies will need to be completed before we can claim that there is a demonstrated cause effect relationship between video game violence and real life aggression. However, the

recent research developments show that the concern about the impact of violent video games is justified. It should act as a spur for both more research and for greater vigilance over the video and computer game diet of children and youth.