The Influence of Peers and Parents on Aggressive Behavior Following Violent Video Game Play

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Abstract
The influence of parents and peers on aggressive behavior among children following violent video game play was investigated. Boys in two age groups, grades 1-2 and grades 5-6 ($n = 75$ in each), were randomly assigned to one of three discussion topic conditions: peer disapproval of aggression, parent disapproval of aggression, or neutral topic. Each boy played a violent video then took part in one of the discussions. Participants were then observed while playing in a room containing toys classified as aggressive or non-aggressive. Time spent playing with aggression associated toys was taken as measure of aggressive behavior. For younger children, only parental influence resulted in a lower level of aggression, whereas only peer influence reduced aggression in older children.
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The use of violent video games and the exposure to other sources of violence via computer and television has increased substantially within the last 30 years (Anderson, Berkowitz, Donnerstein, Huesmann, Johnson, Linz, Malamuth, & Wartella, 2003). The growth of the multibillion dollar video game industry has resulted in a substantial increase in the amount of violence to which children are exposed. This exposure has proven to be associated with many negative consequences.

Anderson et al. (2003) reviewed research on the association between violent video games and aggression and found that not only is exposure to violent video games related to an increase in aggressive behavior, cognition, and affect, but it is also linked to a physiological desensitization to real life violence, cardiovascular arousal, and a decrease in helping behavior. In addition to these outcomes, several other negative effects of playing violent video games have been demonstrated. These include learning aggressive self views among adolescents (Uhlmann & Swanson, 2004), lower academic achievement (Anderson & Dill, 2000), lower empathy (Funk, Buchman, Jenks, & Bechtoldt, 2003), the development of a hostile association bias (Kirsh 1998), increased hostility, frequent arguments with teachers, and an increase in physical fights (Gentile, Lynch, Linder, & Walsh, 2004).

Not only does the use of violent video games have short-term effects, such as an increase in aggressive behavior in the laboratory, but it also has long-term effects, such as delinquency (Anderson & Dill, 2000). The negative effects associated with violent video game play show gender and age differences. Males show greater aggression following violent video game play compared to females (Bartholow & Anderson, 2002). In addition, boys in grades 3 and 6 show aggressive behavior following the video game play, but in different ways. Sixth grade boys endorse higher aggressive behavior and use more aggressive words whereas third grade boys are more aggressive towards a bobo doll (Meyers, 2003).

The magnitude of these effects is substantial. The estimated effect size of violent video game
play on aggressive behavior is 0.26 (Anderson et al., 2003). This effect size is larger than that found for the effect of condom use on decreasing HIV risk, for passive smoke on lung cancer, and for calcium intake on bone mass (Anderson et al., 2003).

Not only does playing violent video games influence a child's behavior, but so do peers and parents. The differential influences of parents and peers on behavior have shown that the responses of adolescents to parent–peer cross pressures vary as a function of the situation (Brittain, 1963), and that parent–peer influences vary with age (Berndt, 1979). With the onset of adolescence, the influence of parents is replaced by the influence of peers; peer influence increases the most between the 3rd and 6th grade (Berndt, 1979).

The purpose of this study was to determine ways to prevent the increase in aggression in boys associated with violent video game play. The differential effects of peer perspectives versus parent perspectives in decreasing the amount of aggressive behavior following violent video game play for two different age groups was examined. One group of primary school boys (grades 1-2), and one group of intermediate school boys (grades 5-6) played a violent video game followed by one of three discussion topics: parents disapprove of aggressive behavior, peers disapprove of aggressive behavior, or neutral. Following the discussion, each child was observed and degree of aggressive behavior was recorded. An interaction between age and discussion condition was predicted, in which the lowest levels of aggressive behavior were expected for the primary boys in the parent disapproval condition and for the intermediate boys in the peer disapproval condition. A main effect for discussion condition was also predicted across the levels of age: because parents and peers probably have some influence on behavior at all ages, both conditions were expected to lead to less aggressive behavior than the neutral condition, regardless of age. No main effect for age was expected.

Methods

Participants

Seventy-five boys in grades 1-2 (primary) and 75 boys in grades 5-6 (intermediate) were recruited from elementary schools in a medium size Canadian city. Twenty-five boys in each age
group were randomly assigned to one of three conditions, parents, peers, or neutral. All of the participants were caucasian and were from middle class families. All participants were healthy, and had no known behavior problems.

**Materials**

Each participant played the violent video game Mortal Kombat II from an X-Box system (Version 2). The remote controller had six buttons and a directional pad to control the player in the game. The game involved rounds of hand-to-hand fighting, with the winner moving onto the next round. To measure aggression, each participant was exposed to a play room where there were lots of common toys such as books, puzzles, coloring books, paints, swords, guns, a bobo doll, GI Joes, transformers, cars, trucks, and a sand box. Each toy was classified as aggressive or non-aggressive.

**Procedure**

All of the participants first played the violent video game Mortal Kombat II for 20 min and this was followed by a 10-min discussion with the experimenter of either parent disapproval of aggressive behavior, peer disapproval of aggressive behavior, or a neutral topic (the participant's hobbies). After the discussion, the child was given 30 min of free play time in a room full of toys. Trained observers recorded how many minutes each child spent playing with each toy, and these time measures were then translated into how much time was spent playing with aggressive toys. The observers were unaware of the participant's discussion condition so as to avoid bias. Each participant was tested individually, and played in the room alone; therefore, their behavior was not influenced by anyone else.

**Results**

The mean amount of time spent playing with aggressive toys was computed for discussion condition with the two age groups and those means are shown in Figure 1. The influence of discussion condition and age on the times scores was assessed in a two-factor analysis of variance (ANOVA) with type I error rate set at .05. The ANOVA revealed a main effect for discussion condition, $F(2, 144) = 12.62, MSE = 3.08$. Averaging across age groups, the mean
aggression times were 20.2 min, 20.0 min, and 21.7 min for the parent disapproval, peer disapproval, and neutral conditions, respectively. There was no main effect of age, $F < 1$. The predicted interaction between age and discussion condition was significant, $F(2, 144) = 70.40$, $MSE = 3.08$.

A simple effects analysis was conducted to examine the influence of discussion topic at each age level. Significant effects were found in both age groups: $F(2, 144) = 37.68$, $MSE = 3.08$, for the primary group and, $F(2, 144) = 45.34$, $MSE = 3.08$, for the intermediate group. To determine the exact nature of the interaction, Fisher LSD comparisons were made between the means of the discussion conditions within each age variable. As predicted, in the primary group the parent disapproval condition showed significantly lower levels of aggression than the neutral condition, $t(144) = 6.92$, $SEDM = 0.50$, and in the intermediate group the peer disapproval condition showed significantly lower levels of aggression than the neutral condition, $t(144) = 7.58$, $SEDM = 0.50$. The neutral condition did not significantly differ from the parent disapproval condition in the intermediate age group nor from the peer disapproval condition in the primary age group.

Discussion

The results of this study indicate that there is a difference between the influence of peers and parents across age groups, and this difference can contribute to a decrease in aggressive behavior following violent video game play. The findings demonstrated that boys in grades 1-2 who discussed their parents' disapproval of aggressive behavior following violent video game play showed a decrease in their levels of aggressive behavior. But when video game play was followed by a discussion of peer disapproval, levels of aggressive behavior among children in this age group did not decrease. In contrast, boys in grade 5-6 showed a decrease in their levels of aggressive behavior when violent video game play was followed by a discussion of peer disapproval of aggressive behavior, but not when followed by a discussion of parent disapproval. These results indicate that the influence of parents and peers on the level of aggressive behavior depends on the age of the child, supporting the earlier findings of Berndt (1979) who reported
that parent-peer influences vary with age. In his study, Berndt (1979) reported that the greatest increase in peer influence occurs between the 3rd and 6th grade, which fits with the pattern of results seen in this study.

Contrary to what was predicted, discussing the disapproval of peers towards aggression did not lead to a change in the levels of aggressive behavior for the younger boys, nor did discussing the disapproval of parents towards aggression with the older boys. This finding indicates that not only do peer influences, on the levels of aggressive behavior, become stronger with age, but in fact they replace the influence of parents altogether.

These results can also be viewed with respect to Brittain (1963), who found that parent-peer conformity in adolescents varies systematically with the situation. This study indicated that adolescents are likely to respond in ways that avoid being noticeably different from their peers, and their responses also reflect concern regarding separation from their peers. These may be the reasons behind the differences demonstrated in this study: older children are more concerned with being the same as their peers and fitting in. Brittain (1963) also found that the responses of the adolescents reflected their perception of the competence of parents versus peers in the area in question. In this study, the older children may have perceived peers as the more competent guides in the area of violent video game play and aggression.

Another interesting finding of Brittain (1963) is that the choices of the adolescents reflected how similar they perceived themselves to be to their parents and peers. If they perceived themselves to be more similar to their parents they were more likely to show parental influence, and if they viewed themselves as more similar to their peers, than they were more likely to show peer influence. In this study, younger boys may have perceived themselves as more similar to their parents, whereas the older boys perceived themselves as more similar to their peers.

These findings have strong practical applications. As was described above, violent video game play has been linked to many short- and long-term negative consequences. This study has identified possible preventative measures that are age-specific and are very simple to apply by parents and caregivers.
References


Figure 1. Mean time spent playing with aggressive toys as a function of age group and discussion condition. Error bars indicate one standard error of the mean.
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