The Effects of Playing Violent Video Games on Youth: A Three-Year Longitudinal Study

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Research Goals of the Violent Video Game Study

The overall goal of the Violent Video Game study is to advance:

- 1) our understanding of how playing violent video games on a daily basis is related to aggressive behavior and cognitions,
- 2) our understanding of what moderates these relations, and
- 3) our understanding of what psychological processes produce (mediate) these relations.
How does observing violence increase the risk of violent behavior?

- **Situational Stimulating Processes** (short term)
  - 1) By priming aggressive schemas, scripts, emotions & beliefs.
  - 2) By increasing arousal which may be misattributed to something else
  - 3) Because viewers copy ("mimic") behaviors they see

- **Observational Learning Processes** (long term)
  - 1) Through the encoding ("imitation") of schemas, scripts, emotional associations and beliefs promoting aggression.
  - 2) By desensitizing viewers emotionally to violence

How does playing a violent game add more to the risk?

- **Conditioning Processes** *(long term)*
  - Instrumental conditioning of behaviors and scripts for aggression
Overview of Current Study

- Initial cohorts of 2nd, 4th, and 9th graders each interviewed three times at one year intervals
  - Michigan Communities
    - Flint, Tecumseh, Stockbridge, Redford Union Schools
  - Iowa Communities
    - Nevada, Boone, Madrid Public Schools
- Individual hour-long in person interviews for young children and group interviews for older children.
- Teacher assessments of children’s behaviors
- Mail and phone interviews of parents about children’s behaviors and family characteristics
Wave 1 Sample Size \((N = 1,422)\)

<table>
<thead>
<tr>
<th></th>
<th>2nd</th>
<th>4th</th>
<th>9th</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Mich.</td>
<td>167</td>
<td>134</td>
<td>179</td>
</tr>
<tr>
<td>Iowa</td>
<td>78</td>
<td>69</td>
<td>84</td>
</tr>
<tr>
<td>Total</td>
<td>n 245</td>
<td>203</td>
<td>263</td>
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Wave 1, 2,3 Sample Size \((N = 1159; 82\%)\)

The 263 drop-outs were significantly more aggressive, more antisocial, and scored significantly lower on achievement in Wave 1.
Stockbridge’s Contribution

Wave 1, 2,3 Sample Size = 79, 78, 75 (95%)

Males = 44
Females = 35

2\textsuperscript{nd} graders = 43
4\textsuperscript{th} graders = 36
Key Measures: Video Game Violence

“By video games we mean any game you play on the computer, on video game consoles (such as PlayStation 2, GameCube, Xbox), on hand-held game devices (such as GameBoy, Nintendo DS, Playstation Portable (PSP)), or in video arcades.”

What is your favorite video game? __________________

How often do you play it?
   Only once in a while = 0,    A lot, but not always = 2,    Almost all the time = 4

(Items repeated for “2nd” and “3rd” favorite video game)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Computation</th>
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<tbody>
<tr>
<td>Video game (including computer) violence consumption</td>
<td>Average violence ratings of three “favorite” video/computer games multiplied by “how often played.”</td>
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Example Scene from Violent Video Game: GRAND THEFT AUTO

Other games: Dragon Ball, Bully, Mortal Kombat, Scarface, Halo.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Score</th>
<th>Sample item</th>
</tr>
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</table>
| **Normative Beliefs Approving Aggressive Retaliation**
  • Child report
  • Huesmann & Guerra, 1997                   | Mean of 8 items; $\alpha = .89$ | “Suppose a boy says something bad to another boy, John. Do you think it is OK for John to hit the boy?” (4 = perfectly OK, ..., 1 = really wrong)                                                                 |
| **Aggressive Fantasy**                       | Mean of 4 items; $\alpha = .73$ | “When you get mad, sometimes do you daydream about the things you would like to do to the person your mad at, like hitting, damaging their things, or getting them into trouble?” (0 = never, ..., 3 = lots of times) |
| **General Aggression**                       | Mean of 9 items; $\alpha = .85$ | “How often do you hit other kids?”
"How often do you call others names?“ (Never = 0 … Often = 2)                                                                                              |
| **Teacher Prediction of General Agg**        | Mean of 10 items $\alpha = .96$ | “What percentage of students would say that this child ‘is someone who pushes or shoves others?’“ (0%, … Over 75%)                                                                                       |
Relation Between Average Exposure to Video Game Violence in Years 1 and 2 Aggressive Cognitions and Behaviors in Year 3: GRADE 2-4

![Bar chart showing the relation between average exposure to video game violence in Years 1 and 2 and aggressive cognitions and behaviors in Year 3.](chart.png)
Relation Between Average Exposure to Video Game Violence in Years 1 and 2 Aggressive Cognitions and Behaviors in Year 3: GRADE 4-6

\[ p < .10, \quad * p < .05, \quad ** p < .01 \]
Relation Between Average Exposure to Video Game Violence in Years 1 and 2 Aggressive Cognitions and Behaviors in Year 3: GRADE 9-11

*p<.10, *p<.05, **p<.01
Relation Between Average Exposure to Video Game Violence in Years 1 and 2 and Aggressive Cognitions and Behaviors in Year 3: All Grades - MALES

+p<.10, *p<.05, **p<.01

Beliefs
Approving
Agg
Agg
Fantasy
Self-rep
Agg
Teach-rep
Agg
Lo VG Viol
Med VG Viol
Hi VG Viol

+ = p < .10
* = p < .05
** = p < .01
Relation Between Average Exposure to Video Game Violence in Years 1 and 2 Aggressive Cognitions and Behaviors in Year 3: All Grades - FEMALES
Relation Between Average Exposure to Video Game Violence in Years 1 and 2 Aggressive Cognitions and Behaviors in Year 3: STOCKBRIDGE

+p<.10, *p<.05, **p<.01
Aggressive Behavior

- In order to maximize the sample size for subsequent analyses while taking advantage of multiple sources of information
  - 1) We created a composite measure of aggressive behavior using a combination of self-reported general aggression and teacher reported general aggression
  - 2) To remove the artifactual contributions to correlations of gender differences and age differences in aggression and violent game playing, we standardized the aggression and video game violence measures within each gender by grade subgroup
Total Effect of Wave 1 & 2 Exposure to Video Game Violence on Wave 3 Composite Aggression (N = 1202) (standardizing within grade & gender to remove those artifacts)

Average Exposure to Video Game Viol in Yrs 1 & 2 → Year 3 Comp Child Aggression

Stockbridge = 0.39***

Year 3 Comp Child Aggression → Gen Agg (Child rep)

Year 3 Comp Child Aggression → Gen Agg (Teach rep)

*p < .10, **p < .05, ***p < .01
Effect of Wave 1 & 2 Exposure to Video Game Violence on Wave 3 Composite Aggression (N = 1202)
(stdarizing within grade & gender to remove those artifacts)

Year 1 Child Aggression

.22***

Ave Exposure to Video Game Viol in Yrs 1 & 2

.48***

Year 3 Child Aggression

.06**

Ave Exposure to Video Game Viol in Yr 3

.01

+p<.10, *p<.05, **p<.01 ***p<.001
Mediating Effect of Normative Beliefs between Wave 1 & 2 Exposure to Video Game Violence and Wave 3 Composite Aggression (N = 1202) (standardizing within grade & gender to remove those artifacts)

Year 1 Comp Child Aggression → Norm Beliefs Approve Agg Yr 2 → Year 3 Comp Child Aggression

Ave Exposure to Video Game Viol in Yrs 1 & 2 → Norm Beliefs Approve Agg Yr 2

.22*** → .27*** → .43*** → .21*** → .04

+p<.10, *p<.05, **p<.01 ***p<.001
Mediating Effect of Normative Beliefs between Wave 1 & 2 Exposure to Video Game Violence and Wave 3 Composite Aggression (N = 1202)
(standardizing within grade & gender to remove those artifacts)

Ave Exposure to Video Game Viol in Yrs 1 & 2

Year 1 Comp Child Aggression

Fantasizing about Aggression Yr 2

Year 3 Comp Child Aggression

+ p<.10, * p<.05, ** p<.01, *** p<.001
Summary

- Habitual playing of violent video games by children and adolescents is related to engaging in more aggressive behavior, and to more aggression-related cognitions such as normative beliefs and fantasies about aggression.
- This effect seems a little larger for:
  - Girls than boys
  - 4th graders compared to 2nd or 9th
- A direct effect of video game violence on aggressive behavior accounts for a small percent of the variance in aggressive behavior when prior aggression is partialed out, but the correlation with composite aggression when age and gender are controlled was .49 for N=1202
- Normative beliefs and aggressive fantasies are significant mediators of the relation between video game violence and aggressive behavior.