

# Effects of Violent Video Games: Do They *Doom* Kids To *Mortal Kombat*?

Sources: Anderson, C. A., & Bushman, B. J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, 12, 353-359.

Anderson, C.A., Berkowitz, L., Donnerstein, E., Huesmann, L.R., Johnson, J.D., Linz, D., Malamuth, N.M., & Wartella, E. (2003). The influence of media violence on youth. *Psychological Science in the Public Interest*, 4(3), 81-110.



## Goals:

Teach the importance of using random selection.

Teach the dangers of biased sources.

Teach the importance of reliability.

## Basic Idea:

Does playing violent video games make kids more aggressive? If so, how much more, and for how long? This lesson explores the scientific research on video games and their link to aggressive behavior. Does playing violent video-games make kids more aggressive? If so, how much more, and for how long? This lesson explores the scientific research concerning video-games and aggressive behavior.

## Gain Attention/Interest:

### Vignette

*Javier and Mark have spent the last 5 hours playing video games in Mark's basement. They decide to take a break and go get something to eat. On the way to the pizza place, they run into Greg, a guy from their English class whom they have never liked. Instead of getting pizza, they end up starting an argument with Greg that eventually leads to a fight, and both Javier and Mark end up running away from the police.*

Teens in the U.S. spend as much as 40 hours a week exposed to media, such as TV, radio, internet, video games, and movies. That's as much time as many adults spend at a full-time job.

The video games developed 20 years ago had simple graphics and weren't very realistic. However, new video games are quite complex, and they can depict realistic violent scenes. Many non-violent video games exist (such as some sports games). However, the most frequently used games are the violent ones.



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## Think & Write #1

### *Do you think playing violent video games makes people more aggressive?*

Does spending all this time exposed to violence influence the behavior of the person playing the games? Do these games make teens more violent and aggressive in real life or is their violence limited to just the video game-playing world? Both are important questions, questions that concern the government and parents alike. Parents and policy-makers (the government) turn to scientists to answer these questions.

### Ask: What is Science?

Even though you might not realize it, scientists don't study just chemistry and physics. Many scientists study people and their behaviors. In fact, psychology is the scientific study of the human brain and behaviors, and it is the most popular major at many colleges. A nonscientist may look at video games and make a decision based only on what she thinks or on what some of her friends think. However, when scientists approach a question, they come up with a hypothesis (a guess or prediction), gather evidence, analyze it, and then make conclusions. When gathering information and coming to conclusions, scientists seek to support the answer they think is correct by using a method called **proof by disproof**.

# 1

## Ask: What is Science?

### Example: Proof by Disproof

Imagine some scientists develop the hypothesis that playing violent video games makes teens more violent in real life. The scientists gather some information. Pretend the scientists find that teens who play violent video games get into more fights than teens who do not play violent video games. This finding does NOT automatically mean that playing violent video games causes violence. Scientists first have to eliminate all other possible answers before they can conclude this. It may be that teens who are interested in playing violent video games would get in more fights regardless of whether or not they actually play the video games – they are attracted to violent games because they are more violent to begin with. More on this later.

## Define the Problem: See Many Sides

What does the word aggressive mean to you?

**Solicit responses.**

An important part of science is clearly defining the problem and the terms involved. Without a clear definition of the problem, people can waste a lot of time arguing about trivial issues. For example, what is aggression? One group may claim that aggression is “threatening another person” while another group may believe that an aggressive act requires actual injury to another person. In some contexts, aggression may be considered a positive behavior (e.g., in sports), while in others, it is viewed negatively (e.g., getting in fights). Using differing definitions will yield vastly different comparisons and results about the causes and consequences of aggression. Clearly expressing how you intend to define a term is called creating a **working definition**. A working definition is the particular way in which you define and measure what you are investigating. For example, a working definition of aggression could require physical contact. Another working definition of aggression may only require that a person’s feelings get hurt. Once working definitions are established, scientists can communicate their questions.

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Define  
the  
Problem:

See  
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Sides.

### Activity

*Divide students into groups (Group A: Video Game Corporation, Group B: Association of Parents with Teens, Group C: Teen Video-Gamers) Ask the students in each group to role-play as though they actually belong to the group. Have each group come up with a brief statement describing its opinion on “youth playing violent video games.” Next, have each group assume that scientists have just announced that playing violent video games leads to increased violent behavior. After the statements are composed, ask a spokesperson to share the group’s statement with the class and allow members of the other groups to ask questions and debate the statement.*

## Think & Write #2

*Before the groups debate, have them predict what the other groups will say.*

*Potential arguments:*

*Group A There is a video-game rating system in place that informs all consumers about the content of each game, and it is up to parents to monitor their children's behavior.*

*Group B It is the responsibility of video game companies to produce socially responsible products. By promoting such violent games, they are encouraging our youth to become more aggressive and violent.*

*Group C There are thousands of teens who enjoy playing video games who never get in fights or get in trouble with the law. Why should they be punished because of the behavior of a few people?*

The groups that are interested in this topic are not limited to these three. Many others are interested as well.

**Video-game Marketer:** People who market video games study the wishes and desires of video-game players and try to meet these desires with new products. Many attend four-year colleges and study business and marketing.

**Policy Analyst:** Policy analysts are concerned with how decisions about products people use will influence the law and government. Policy analysts attend four-year colleges.

**Lobbyist:** Lobbyists advocate certain positions to government officials. Lobbyists typically attend four-year colleges.

**Software Designer:** Software designers write computer code and design video games and other computer programs. Typically, software designers attend four-year colleges and study computer programming. They can work for private companies, public organizations, small businesses, or the government.

# Distinguish Fact From Opinion:

## Learn What Constitutes Scientific Evidence

With many scientific issues, there are many people with strong opinions. Opinions, however, do not replace facts. Many parent groups are strongly opposed to violent video games, but video-game companies believe they should be able to produce and sell their products. Because video-game companies profit when video games are sold, they are a **biased source** on any topic related to video games. However, scientists do not give much weight to opinions (biased or not) when they are investigating a question. Scientists look at facts.

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## Fact Versus Opinion: What Constitutes Evidence?

Is the fact that Eric Harris and Dylan Klebold, the Columbine school shooters, played the violent video game Doom evidence that violent video games cause aggressive behavior? A scientist would reply to this question with a resounding “No.” First, just because they played video games does not mean that video games caused them to commit their terrible crime. Second, even if there was a link showing the video game had caused them to act, it would not show that video games would do the same to other people. To make a judgment of

### BIASED SOURCE

The goal of a scientist is to answer questions based on solid evidence and find out how things work. Scientists don't rely on biased sources because different groups often have different goals (e.g., to make a profit or to persuade people how to think). Because of these stakes, it is difficult to know the reasoning behind their conclusions.

this type, scientists want evidence. In order to find evidence, scientists gather facts. Connecting aggression and video games by studying only two people does not provide sufficient evidence to generalize to all teens.

When scientists look at information, they want to see a connection between two factors (e.g., violence and video-game play), as well as an indication that the connection will hold for many people, not just those in the specific example. Similarly, scientists want to make sure what they measure occurs consistently from time to time. If something occurs repeatedly, it is called **reliable**. If a person playing violent video games is more aggressive every time he plays violent video games, a scientist could say that the finding of violent video games leading to increased aggression is reliable. If it only happens occasionally, or with no pattern, then it would be unreliable. If nearly everyone who plays violent video games shows more aggression afterwards, then violent video games are likely a reliable predictor of increased aggression.

# Weigh Evidence and Make Decisions

As we already discussed, a nonscientist may take examples of video-game-playing kids who commit aggressive acts as a reasonable connection linking video games and violence. An example of how video-game violence can be examined scientifically is to **randomly select** people to participate in a study. Scientists randomly select people, called participants, to be in experiments. The people must be alike in the ways that matter to the experiment. If the participants are not alike, the scientists cannot tell if the intervention (meaning what was done to the people in the experiment) is what caused changes in the people's behavior.

## RANDOM SELECTION

Using random selection when they do an experiment helps scientists know it is the intervention, and nothing else, that leads to differences in people's thoughts or behaviors.

In one study in which this idea was tried, some of the people played video games, but others did not. Later, scientists measured the aggression levels of all participants. If playing violent video games makes people more aggressive, then the participants who played the violent video games should, in general, have higher aggression scores than those who did not.

Scientists have conducted many studies that compare the aggression levels of participants who play violent video games (e.g., games involving use of a weapon) to participants who play non-violent video games (e.g., a basketball video game).

Here is a brief summary of their conclusions.

- 90% of teens report that their parents never check the ratings on video games.
- 1% say that their parents prevented a purchase of a game because of its rating.

## 4

Weigh  
Evidence  
and  
Make  
Decisions.



- Playing violent video games increases:
  - General aggression (in this particular case, the working definition used for aggression is “behavior intended to harm another person”)
  - Aggressive thoughts
  - Aggressive feelings
  - Arousal (heart rate, blood pressure)
- And playing violent video games decreases:
  - Helping behavior (playing video games lead teens to be less helpful to others).

Note: Even short-term exposure to violent video games (i.e., 20 minutes) leads to an increase in aggression.

However, it is important to note that all of the above findings refer only to a short time period after playing the games. Playing a violent video game for 20 minutes when you are 14 years old is not guaranteed to make you a more violent person when you are 70.

### Think & Write #3

#### *How about now?*

Have students write about their thoughts now that they have learned what scientists have found regarding violent video games and aggression. Do they feel the same as they did during Think & Write 1?

# Move From Science to Society

As a person begins to act more aggressively, the quality and types of interactions she has with other people change. Imagine what it would be like if your best friend suddenly became much more aggressive. How would this influence your relationship? What would it be like if your best friend always thought about violence and never helped you when you needed it? How do you think it would influence his relationship with his parents?

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## Move From Science To Society

Playing violent video games might lead to more aggressive behavior, but what should we do about it? Ban all violent video games? Only allow adults to play them? Make kids get a special license to play them? Obviously, all these suggestions would be controversial. Once science has answered a question, it does not mean that the problem is solved. What we do with the information science provides is up to us. What are some possible decisions that we could make? What would the three groups from earlier in the lesson (Video Game Corporation, Association of Parents with Teens, Teen Video-Gamers) think about these decisions? How should our society deal with the information scientists have uncovered about the effects of playing violent video games?

## Revisit, Review, Reflect, and Re-evaluate

Current research shows that playing violent video games leads to increased aggression in real life. However, implications for society are unknown and remain controversial. And science is far from done with the topic of video games and violence. Scientists constantly revisit problems, and reflect on whether important aspects of the problem have changed. For example, the number of hours that children spend playing video games has increased dramatically over the past two decades, as has the quality of video games. What was considered violent twenty years ago would now be considered quite tame. Thus, playing such games may have different effects today compared to twenty years ago. Scientists continually re-evaluate their work to make sure they are making valid conclusions based on the best evidence. Differences like the change in the number of hours spent playing video games could lead to drastic changes in the relationship between video games and violence. This is why scientists constantly check and recheck their findings.

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## Revisit, Review, Reflect, and Re-evaluate.



## Think & Write #4

### *What's next?*

Based on what they know now, have students hypothesize about further scientific studies that could be done to help scientists better understand the relationship between violent video games and aggression.

## Discussion Questions

1. Do these findings affect one gender more than the other? If so, why?
2. How reliable (review definition) does the relationship between aggression and video games have to be before it is considered to be serious? Do video games have to make everyone more aggressive? What about 50% of people? Or 10%?
3. Imagine you had been told this information, but instead of violent video games it was doing homework that led to increased aggression. Would it change your thoughts? What if the phenomenon related to violence was playing your favorite sport? Do any of your answers make you think that you could be a biased source?

## Homework Questions

1. On what other topics might video-game companies be biased sources? (Potential answer: quality of their products, enjoyment felt from using their products.)
2. Ask your parents what they think about violent video games. Do their answers seem like they have a bias? Why?

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# Quiz Questions

## Version A

1. Eric Harris and Dylan Klebold (the Columbine school shooters) played the video game Doom. Is this evidence that violent video games cause aggressive behavior?
  - a. Yes, because they played the game before they shot people.
  - b. Yes, because if the video game had a warning label on it they wouldn't have been able to play it.
  - c. No, because by studying only two people we don't know whether their behavior is typical of all teens.
  - d. No, because studying more than one person means that the results will always be unclear.
  
2. Imagine scientists have just announced that playing violent video games leads to increased violent behavior. Which of the following best explains what a representative of the video game company might say?
  - a. There is a video-game rating system in place that informs all consumers of the content of each game, and it is up to parents to monitor their children's behavior.
  - b. By marketing violent games, companies are encouraging youth to become more violent and aggressive.
  - c. There are thousands of teens who enjoy playing video games who never get in fights or get in trouble. Why should they be punished for the actions of a few?
  - d. Video-game manufacturers should decrease the cost of their games.
  
3. Random selection is important because it:
  - a. gives everyone an equal chance to be selected.
  - b. means that the same result will be found time after time.
  - c. lets everyone get involved.
  - d. makes sure that no one knows what is going on.

# Quiz Questions

## Version B

1. Frequently, parents and teens do not agree on the issues surrounding video games. Teens typically want to play video games, but parents often prefer kids to do other things. Because each group has its own goal, they could be considered:

- a. opinionated
- b. selfish
- c. unreliable
- d. a biased source

2. Name one reason Eric Harris and Dylan Klebold's (the Columbine school shooters) playing the video game Doom is not evidence that violent video games cause aggressive behavior.

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3. What does it mean to be reliable?

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# Quiz Questions

## Version C

1. There are at least four groups of people who have concerns about video games and aggression: Parents, video game-makers, consumers (let's focus on those under age 18), and researchers. List the perspective each group typically takes regarding violent video games and aggression. Then, list one reason why this position could be considered biased.

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2. Name other evidence you would require before you being convinced that one reason Eric Harris and Dylan Klebold committed the Columbine school shooting is that they played the video game Doom.

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3. What does it mean to be reliable?

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4. Define random selection. What is the purpose of random selection?

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