



THE OHIO STATE UNIVERSITY

**Behavioral and Social Sciences
Institutional Review Board**

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1960 Kenny Road
Columbus, OH 43210-1063

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01/14/2022

Study Number: 2021B0318
Study Title: Follow-up Gun Study

Type of Review: Initial Submission

Review Method: Convened

Date of IRB Approval: 01/14/2022
Date of IRB Approval Expiration: 01/14/2023

Dear Brad Bushman,

The Ohio State Behavioral and Social Sciences IRB **APPROVED** the above referenced research.

In addition, the following were also approved for this study:

- Children
- Waiver of Parental Permission Documentation

ADMINISTRATIVE NOTE: The IRB determined the risks involved in the protocol were not greater than minimal. When submitting for continuing review please request expedited review.

As Principal Investigator, you are responsible for ensuring that all individuals assisting in the conduct of the study are informed of their obligations for following the IRB-approved protocol and applicable regulations, laws, and policies, including the obligation to report any problems or potential noncompliance with the requirements or determinations of the IRB. Changes to the research (e.g., recruitment procedures, advertisements, enrollment numbers, etc.) or informed consent process must be approved by the IRB before implemented, except where necessary to eliminate apparent immediate hazards to subjects.

This approval is issued under The Ohio State University's OHRP Federalwide Assurance #00006378 and is valid until the expiration date listed above. ***Without further review, IRB approval will no longer be in effect on the expiration date.*** To continue the study, a continuing review application must be approved before the expiration date to avoid a lapse in IRB approval and the need to stop all research activities. A final study report must be provided to the IRB once all research activities involving human subjects have ended.

Records relating to the research (including signed consent forms) must be retained and available for audit for at least 5 years after the study is closed. For more information, see university policies, [Institutional Data](#) and [Research Data](#).

Human research protection program policies, procedures, and guidance can be found on the [ORRP website](#).

A handwritten signature in black ink, appearing to read "David R. Stund". The signature is written in a cursive style with a large, stylized "D" and "S".

Research Protocol

I. Objectives

Our previous research has shown that children exposed to media characters with guns in movies¹ and video games² are more likely to use real guns themselves (e.g., touch them, hold them, pull the trigger). This research tests whether exposure to a gun safety video a week before the study can help counteract dangerous behavior around guns.

II. Background and Rationale

Guns are prominent in movies that target children. An analysis of top selling films found that the depiction of guns in violent scenes in PG-13 films that target youth has increased from the level of G and PG files in 1985 when the rating was introduced, to the level of R films by 2005, to exceed the level of R films since 2012,³ a trend that has continued.⁴ By definition, a PG-13 movie is supposed to have less violence than an R-rated movie. The Motion Picture Association of America says on its website that the violence in a PG-13 movie “does not reach the restricted R category.” Our study shows that it does.

Previous research has shown that when exposed to movie characters that smoke, children are more likely to start smoking themselves⁵; the same is true for characters that drink alcohol⁶. Similarly, research in our lab has shown that children are more to use guns (e.g., handle them, pull the trigger) after exposure to movie characters who use guns.¹ We replicated this study using video games,² and also found that children who had taken a gun safety course were less likely to engage in dangerous behavior around firearms. However, it is difficult to draw causal inferences about the gun safety course because children were not randomly assigned to take or not take a gun safety course.

The present research will aim to reduce dangerous behavior around firearms by first exposing participants to a gun safety video recorded by The Ohio State University Chief of Police. The control video is about car safety. Children will see the videos about a week before they come into the lab. We predict that children will be less likely to engage in dangerous behavior around real firearms if they saw the gun safety video than if they saw the car safety video, even if they see a movie with guns in the lab.

III. Procedures

A. Research Designs, Samples, Measures, and Procedures

Design

The experiment will test the effects of the mere presence of guns in movies on dangerous behavior with guns in children. Participants will be children 8-12 years old. Children will be tested in pairs. Each child will bring a sibling, relative, or friend to the study. Participants and partners will each receive a \$30 gift card (\$5 for watching the safety video at home and \$25 for doing the lab study). The behavioral measure will be whether or not children handle a real (but non-firing) gun and whether they pull the trigger, including at themselves or their partners.

The design will be a 2 (movie clip-guns present vs. movie clip-guns absent) x 2 (gun safety video vs. seatbelt safety video) between-subjects design. Participants will be randomly assigned to conditions, but both children in the dyad will watch the same safety video.

We predict a main effect for type of movie (i.e., children who see movie characters use guns will be more likely to use real guns themselves than will children who do not see movie characters use guns), a main effect for type of safety video (i.e., children who see the gun safety video will be less likely to use real guns themselves than will children who see the car safety video), and an interaction between type of movie and type of safety video (i.e., the movie with guns will have a weaker effect on children who see a gun safety video than on children who see a car safety video).

Procedure

Participants will be told that the study is about what children like to do for fun, such as watch videos and play with toys and games. Participants who agree to participate in the study will be sent consent (adult) and assent (child) forms electronically, along with a pretest for both adult and child to complete, should they consent and assent to participating in the study. These pretests were used in our previous research.^{1,2} After informed consent is obtained, the participants will be sent the safety video for the condition to which they are assigned (i.e., gun vs. car safety video), a short questionnaire about the video, and a \$5 electronic gift card. Approximately one week after being sent the video, the participants will come to the lab for the study.

Experimenters and research assistants will be wearing masks at all times and will be fully vaccinated against COVID-19. The lab space will be sanitized between sessions to ensure participant safety.

Per OSU policy, all visitors to Ohio State campuses and medical facilities are required to wear masks indoors, regardless of their vaccination status. Children participating in the study and their observing parent or guardian will be required to wear masks for the duration of the experiment in the lab. Outdoor mask wearing is also required on campus for individuals who are unvaccinated when they are unable to maintain socially distancing.

As in our previous study¹, we are using two PG-rated (i.e., "Parental Guidance Suggested. Some Material May Not Be Suitable For Children") Disney films (*National Treasure*, *Rocketeer*) that have been edited to be about 20 minutes. There will be two versions of each film clip, one version with guns left in and one version with guns edited out. Thus, there are four film clips: (1) *National Treasure* with guns, (2) *Rocketeer* with guns, (3) *National Treasure* without guns, and (4) *Rocketeer* without guns.

Participants will be tested in pairs. After viewing the film clip, participants will be placed in a room containing games and toys, with hidden cameras. Participants will be told that

they can play with any of the games and toys in the room for the next 20 minutes. Some games and toys will be scattered about the room, and some will be placed in drawers. Included in the toys are Nerf guns and swords. Two real handguns will be placed in a separate drawer, as in our previous research.^{1, 2} The handguns have been modified so they cannot fire. Inside the magazine, the handgun contains no bullets. Instead, it contains a sensor that counts the number of times the trigger is pulled with sufficient force to discharge the gun. This allows us to distinguish reliably the children who pull the trigger from those who handle the gun but do not pull the trigger. Parents will be asked to predict whether their child will tell an adult if they find the guns, and whether they will handle a gun and pull the trigger. The researcher and the parents will be able to watch the session via a monitor in a control room.

After the 20-minute play period, children will complete a posttest that consists of an attitudes toward guns measure, as in our previous research.^{1, 2}

A thorough debriefing will follow.

Two weeks after a child participates in the experiment, the researcher will contact the parent for a follow-up. If any adverse psychological effects have occurred as a result of the encounter with the firearm, the researcher will recommend counseling services. If the family cannot afford these services, the PI will cover the cost of up to four sessions.

B. Sample

Based on our previous research that used a sample of 104 children⁷, we will double the sample size because this design has four groups rather than two groups. Thus, the total sample size will be 208 children. We are asking for 10 times this number to account for no-shows and other forms of invalid data, thus bringing the total to 2,008.

As in our previous research, we will recruit children in a variety of ways. One way is through ResearchMatch.org, a national electronic, web-based recruitment tool created through The Ohio State University Center for Clinical and Translational Science. Individuals in the Columbus area who have self-identified or have identified their children as interested in participating in research studies will be identified through a targeted search using approved inclusion criteria (ages 8-12yo, willing to travel to the Ohio State University campus). Once approved, investigators will send a message to identified individuals about the available study. We will also recruit participants through other means (e.g., ads placed on Craigslist, Facebook, newspapers). We have been able to recruit the required number of participants in past research.^{1, 2}

C. Internal Validity

Because this is a laboratory experiment, threats to internal validity are low.

D. Data Analysis

Data will be analyzed using negative binomial regression models, as in our previous research.² The negative binomial model is appropriate for modeling-dependent measures that are counts. It is well-suited for over-dispersed data (i.e., the dependent measure has a standard deviation greater than its mean). Data will be analyzed by the Biostatistics Analysis Center, Perelman School of Medicine, University of Pennsylvania, Philadelphia, who will be compensated for performing the analyses.

¹ [Dillon, K. P., & Bushman, B. J. \(2017\). Effects of exposure to gun violence in movies on children's interest in real guns. *JAMA Pediatrics*, 171\(11\), 1057-1062. doi:10.1001/jamapediatrics.2017.2229](#)

² [Chang, J. H., & Bushman, B. J. \(2019\). Effect of exposure to gun violence in video games on children's interest in real guns: A randomized clinical trial. *JAMA Network Open*, 2\(5\): e194319. doi:10.1001/jamanetworkopen.2019.4319](#)

³ Bushman, B. J., Jamieson, P. E., Weitz, I., & Romer, D. (2013). Gun violence trends in movies. *Pediatrics*, 132(6), 1014-1018. DOI: 10.1542/peds.2013-1600

⁴ Romer, D., Jamieson, P. E., & Jamieson, K. H. (2017). The continuing rise of gun violence in PG-13 movies, 1985-2015. *Pediatrics*, 139(2):e20162891.

⁵ Dal Cin, S., Stoolmiller, M., & Sargent, J. D. (2012). When movies matter: Exposure to smoking in movies and changes in smoking behavior. *Journal of Health Communication*, 17(1), 76-89.

⁶ Wills, T. A., Sargent, J. D., Gibbons, F. X., Gerrard, M., & Stoolmiller, M. (2009). Movie exposure to alcohol cues and adolescent alcohol problems: a longitudinal analysis in a national sample. *Psychology of Addictive Behaviors*, 23(1). 23-25.

The Ohio State University Parental Permission

For Child's Participation in Research

Study Title: Media Violence and Gun Violence

Researcher: Brad J. Bushman, Ph.D.

Sponsor: The Ohio State University

IRB Protocol Number: 2021B0318

IRB Approval Date: 1/14/2022

This is a parental permission form for research participation. It contains important information about this study and what to expect if you permit your child to participate.

Your child's participation is voluntary.

Please consider the information carefully. Feel free to discuss the study with your friends and family and to ask questions before making your decision whether or not to permit your child to participate. If you permit your child to participate, you will be asked to sign this form and will receive a copy of the form.

Purpose:

The purpose of this study is to examine the effects of movies containing guns on children. Previous research has shown that children who see movie characters smoke cigarettes are more likely to smoke themselves. Likewise, children who see movie characters drink alcohol are more likely to drink themselves. Our previous research has shown that children who see movie characters use guns are more likely to use real guns themselves (e.g., touch them, pull the trigger).[1] In this study we want to know if watching a gun safety video made by The Ohio State University Police Chief will reduce dangerous behaviors around real guns.

Procedures/Tasks:

Prior to coming to the lab, we ask that you to complete a questionnaire and that your child watch a short (about 1 minute), instructional safety video from The Ohio State University Chief of Police, who wants kids to be safe. By the flip of a coin, your child will watch either a gun safety video or a car safety video and complete a short questionnaire about it. Please do not tell your child that there are two different safety videos.

When you come to the lab for the study, your child will watch a 20-minute movie clip. Some of the scenes may contain violence and/or guns, but the violence will not be excessive or graphic, with no blood or gore involved. All movies will be age appropriate for children aged 8-12, as they are rated PG. The Motion Picture Association of America states that PG movies may contain some content that parents may not like for younger children and suggests parental guidance.

After watching the movie clip, your child and another child (e.g., sibling, relative, friend) will be placed in a room containing games and toys, with hidden cameras. Participants will be told that they can play with any of the games and toys in the room, including two foam swords and two Nerf guns with soft bullets. Inside the room, two actual handguns will be placed in a separate drawer of a file cabinet, as in previous research conducted in our lab. The handguns contain no bullets and are modified so that they cannot fire. Inside the magazine where the bullets would usually be stored, the handguns contain a sensor that counts the number of times the trigger is pulled with sufficient force to discharge the gun. This allows us to distinguish reliably the children who pull the trigger from those who handle the gun but do not pull the trigger. You will be asked to predict whether your child will handle the gun and pull the trigger if they find the hidden gun.

The Ohio State University Chief of Police has inspected the gun and has authorized its use in this study. Your child will be video recorded so we can see what they do. You can watch your child in the control room with the experimenter if you want to. The recording will be stored on a password-protected computer, backed up on a secure channel of Microsoft Teams, kept for 5 years after the closing of the study protocol, and will then be destroyed. The recordings will only be used for analyses. They will not be used in presentations, TV shows, or shared with other researchers.

We predict that children exposed to movies containing guns will be more likely to play with the real gun than will children exposed to movies without guns. We also predict that the gun safety video will reduce dangerous behavior around the guns. However, we cannot tell your child this in advance or the study would be ruined.

Your child will also complete a media questionnaire, a behavior questionnaire, and a gun questionnaire. If you would like to see those questionnaires, just ask the experimenter.

You will also answer some questions about your child's interest in guns and their exposure to guns in their daily life.

Duration:

The study will take 80 – 90 minutes total, with the lab portion lasting 50 – 60 minutes. The questionnaires you complete at home should take less than 20 minutes. Your time in the lab on campus will last less than an hour. Your child may leave the study at any time. If you or your child decides to stop participation in the study, there will be no penalty and neither you nor your child will lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with The Ohio State University.

Risks and Benefits:

There is a slight risk that the encounter with the firearm will have an impact on your child's mental health. We will follow up with your family 2 weeks after the experiment to check in on your child's response to their participation. If necessary, we can recommend counselling services to help the child process the experience. If your family does not have insurance to cover these services, we will cover the cost of up to 4 sessions. In previous studies using similar activities, no families have reported adverse effects.

There is a slight risk that your child will respond negatively to being deceived and knowing that you were aware of the deception. The debriefing process will help them understand that the need to tell them only half the story and let them know that the study was not about trying to get them into trouble.

Many children think movie characters are cool, and they want to imitate their actions — even dangerous actions such as smoking, drinking, and using guns. Our research is about whether children who see movie characters use guns are more likely to use real guns themselves. Exposure to a real gun in the study may normalize guns for the child, but the debriefing process after the study should reaffirm the fact that real guns are not toys for children to play with.

One benefit of the study is that it provides a safe environment for you to see how your child would behave if they came across a real gun. According to the Brady Campaign to Prevent Gun Violence, 22 children are shot each day in the United States. We hope this research will benefit society by helping us understand the effects of exposure to gun violence in the media on children's interest in real guns. In this study we also test whether gun safety videos can reduce dangerous behaviors around guns.

Confidentiality:

Efforts will be made to keep your child's identity and participation in the study confidential. However, there may be circumstances where this information must be released. For example, personal information regarding your child's participation in this study may be disclosed if required by state law.

In addition, your child's records may be reviewed by the following groups (as applicable to the research):

- Office for Human Research Protections or other federal, state, or international regulatory agencies;
- The Ohio State University Institutional Review Board or Office of Responsible Research Practices;
- The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study.

We will work to make sure that no one sees your survey responses without approval. But, because we are using the Internet, there is a chance that someone could access

your online responses without permission. In some cases, this information could be used to identify you

Coded data may be shared with researchers on Open Science Framework (OSF). OSF is a website and database where researchers share their work with each other so that analyses and methods can be examined or replicated. Coded means that identifying information such as your and your child's name and IP address are not associated directly with the data. The research team will maintain a code list allowing us to connect your and your child's data with your identity, but that code list will not be shared with anyone outside our research team, so they would not know who you are.

The video recordings will only be used as a reference for coding if and how your child interacted with the gun and will never be shared because they are inherently identifiable (i.e., they show faces). These recordings will be stored on a dedicated server only accessible to the research team and deleted five years after the study is complete.

Will my or my child's de-identified information be used or shared for future research?

Yes, it may be used or shared with other researchers without your additional informed consent.

Incentives:

Your child will receive \$30 (in two installments) for participating in the study, even if he or she withdraws. They will receive the first \$5 when we send you the safety video and questionnaire and the second \$25 when they attend the in-person lab study. They should watch the safety video at home before they come to the in-person lab study.

Participant Rights:

You or your child may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you or your child is a student or employee at The Ohio State University, your decision will not affect your grades or employment status.

If you and your child choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By signing this form, you do not give up any personal legal rights your child may have as a participant in this study. An Institutional Review Board responsible for human subjects research at The Ohio State University reviewed this research project and found it to be acceptable, according

to applicable state and federal regulations and University policies designed to protect the rights and welfare of participants in research.

Contacts and Questions:

For questions, concerns, or complaints about the study, or if you feel your child has been harmed as a result of study participation, you may contact Professor Brad Bushman (phone: 614.688.8779; email: bushman.20@osu.edu).

For questions about your child's rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact the Office of Responsible Research Practices at 1-800-678-6251.

Signing the parental permission form

I have read (or someone has read to me) this form and I am aware that I am being asked to provide permission for my child to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to permit my child to participate in this study.

I am not giving up any legal rights by signing this form. You may print or save this consent form for your records.

[1] Dillon, K. P., & Bushman, B. J. (2017). Effects of exposure to gun violence in movies on children's interest in real guns. *JAMA Pediatrics*, 171(11), 1057-1062. doi:10.1001/jamapediatrics.2017.2229

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Signing the consent form

I have read (or someone has read to me) this form. I have had a chance to ask questions before making up my mind. I want to be in this research study.

Digital Signature _____

Time and Date _____

The Ohio State University Assent to Participate in Research

Study Title: Movie Study

Researcher: Brad J. Bushman, Ph.D.

Sponsor: The Ohio State University

IRB Protocol Number: 2021B0318

- You are being asked to be in a research study. Studies are done to find better ways to treat people or to understand things better.
- This form will tell you about the study to help you decide whether or not you want to participate.
- You should ask any questions you have before making up your mind. You can think about it and talk about it with your family or friends before you decide.
- It is okay to say “No” if you don’t want to be in the study. If you say “Yes” you can change your mind and quit being in the study at any time without getting in trouble.
- If you decide you want to be in the study, an adult (usually a parent) will also need to give permission for you to be in the study.

1. What is this study about?

This study is about what kids like to do for fun (e.g., watch movies and videos, play games, play with toys).

2. What will I need to do if I am in this study?

At home, you will watch a 1-minute safety video made by The Ohio State University Chief of Police, who is concerned about keeping kids safe. You will also complete a short questionnaire about your favorite TV programs, movies, and video games, and how you behave. At the university, you will watch part of a movie for 20 minutes and will play with toys and games for 20 more minutes. You will also complete a survey about the movie and what you think about other activities.

3. How long will I be in the study?

Home part: 20-30 minutes

University part: 50-60 minutes

4. Can I stop being in the study?

You may stop being in the study at any time.

5. What bad things might happen to me if I am in the study?

We don't expect anything bad to happen to you, but there is always a chance that something could make you upset during a research study.

6. What good things might happen to me if I am in the study?

You can help scientists understand how videos and movies affect kids, and what kids like to do.

7. Will I be given anything for being in this study?

You will be given \$30, even if you decide to stop the study. First, you will be given \$5 for watching a safety video. When you come to the university, you will be given another \$25. \$5 plus \$25 equals \$30.

8. Who can I talk to about the study?

For questions about the study, you may contact Professor Brad Bushman (phone: 614.688.8779; email: bushman.20@osu.edu). To discuss other study-related questions with someone who is not part of the research team, you may contact the Office of Responsible Research Practices at 1-800-678-6251.

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Signing the assent form

I have read (or someone has read to me) this form. I have had a chance to ask questions before making up my mind. I want to be in this research study.

Digital signature _____

Date and time _____