**RRR protocol for short-term violent-game effects**

**Specific Study:**

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**Overview and Motivation**

As violent video games become increasingly popular and increasingly sophisticated, researchers and the public are concerned that use of these games may increase aggressive behaviors. Initial research by Anderson and Dill (2000) and Anderson and colleagues (2004) reports that playing a violent game for 15-20 minutes has significant effects on subsequent aggressive behavior. A meta-analysis by Anderson and colleagues (2010) reports that these effects are robust, of small-to-medium magnitude, and highly significant. However, re-analysis of this dataset by Hilgard, Engelhardt, and Rouder (2017) suggests that the evidence may be contaminated by selection biases. Therefore, the estimate from this meta-analysis may be an overestimate.

[Research in this area has often been subject to heated disagreements. Some laboratories have only ever reported significant results, leading skeptics to raise concerns about selection bias. On the other hand, some laboratories have never reported significant results, leading proponents to raise concerns about experimental design or researcher expertise.

To address these concerns, a preregistered multi-laboratory experiment is planned. The methodology will be designed with the input of expert proponents, thereby addressing concerns about experimental design. Preregistration ensures transparent and complete reporting, addressing concerns about selection biases.]

The

**Effects the RRR will measure:**

1. The difference in aggressive behavior for participants who played a violent video game and participants who played a nonviolent video game.
2. The moderation of the effect size across naïve and non-naïve participants.
3. The moderation of the effect size by self-identification as a gamer.

**Method Overview:**

1. Informed consent
2. [Essay provocation? 5 minutes for writing, 5-10 minutes for exchange and feedback]
3. 20 minutes of violent game
4. Measurement of aggressive behavior: CRTT or hot sauce.
   1. CRTT probably takes ~10 minutes to explain and conduct.
   2. Hot sauce could be 10-15 minutes, especially if we’re doing all the extra flourishes about making it look like two separate studies.
5. Measurement of aggressive cognition: Word-stem task or scenario-completion task
   1. Word-stem task. Pros? Cons? Translation?
   2. Scenario-completion task. Pros? Cons? Coding?
6. Demographic variables
   1. Gender
   2. past VVG experience
   3. identification as a gamer
7. Screening questionnaire for failures of deception.

**Protocol Requirements**

**Minimum sample size:  
Ideal sample size:**

**Required sample demographics:**

* Participants should be students recruited from a psychology participant pool
* Participants should be 18-24 years old
* Participants should be unfamiliar with laboratory paradigms for measuring aggression. Students recruited from a participant pool should be recruited before such laboratory measures are covered in class.

**A participant’s should be excluded if:**

* They correctly guessed the purpose of the experiment. This data, however, be retained for the secondary analysis, using this as a moderator.
* They indicate suspicion that they are not actually aggressing against another participant.
* They did not follow instructions.
* They did not complete all the tasks.
* They experimental script crashed or did not administer the experiment correctly.
* Laboratories will be provided with a spreadsheet for documenting exclusions. The spreadsheet will store the subject number, date and time tested, and the reason for exclusion. All excluded data should be included with the full data set, but stored in a separate folder. The editors will provide details on how to organize their raw data files for inclusion in the official analyses.

**Testing setting:**

* Participants must be tested in person and not online
* [Participants must be tested individually / Participants may be tested in small groups]
* Participants must be tested in separate rooms so that they do not see each other once the experiment begins.
* Participating laboratories must upload photos of the testing setting to their OSF page.
* [The RA that collects aggressive behavior should be blind to the game played – but how?]

**Experimenters:**

* Any graduate student, postdoctoral researcher, faculty member, or trained research

assistant (at least 18 years of age). [No special expertise is necessary to conduct the

study.]

* [Does the experimenter need previous experience collecting experimental psychology data? Or just training?]

**Data collection:**

* Participating laboratories will receive a [PsychoPy script / Qualtrics questionnaire link] that will collect all questionnaire measures.
* If laboratories are required to provide a description of the study for subject pool or recruiting purposes, the description should be “[IF HOT SAUCE] [Play a video game and perform creative behaviors.]” “[IF CRTT] [Play a video game and measure mental processing speed.]”
* Participants should not know that there are different game stimuli.
* During debriefing, participants should be explicitly instructed not to tell other participants about the aggression measure or other aspects of the study.
* [BLURB FROM SRULL & WYER RRR. I’m not sure it applies here given that we’re so anxious about failures of deception.] [Laboratories are allowed to add additional measures after the completion of the study. They should use their own experimental script for that purpose and should not alter the official RRR experimental script. Additional measures may only be collected after the completion of the RRR script.]

**Required data analyses**

The primary data analyses will be conducted using official R scripts written to calculate the effect size for the overall violent game effect (violent - nonviolent).

Two secondary analyses will be conducted. The first will test for moderation of the violent game effect by task (separate violent - nonviolent calculations for the CRTT and for the hot sauce task and a comparison of those difference scores). The second will test for moderation of the violent game effect by participant naiveté (separate violent - nonviolent calculations for those that did and those that did not guess the purpose of the experiment and a comparison of those difference scores).

[Is it better to bind all the data together into a single t-test, or should effect sizes and SEs be calculated from each lab and a random-effects meta-analysis conducted? The latter might be better about portraying inter-lab variability in effect size.]

[Individual labs can calculate means and standard deviations for aggressive behavior in each condition. The core metaanalysis will be based on these raw accuracy difference scores. Laboratories are welcome to conduct their own analyses and to report them on their OSF page. ]

The RRR meta-analysis will report the accuracies and effect size measures for each lab and they will be computed directly from the raw data from each laboratory.

The official R scripts will be written without viewing the actual data and will be made publicly available. The analyses will be conducted with and without any “judgment call" exclusions.

**Procedure**

1. Obtain informed consent according to the requirements of your university. Note that individual laboratories are required to obtain any necessary ethics approval from their university prior to beginning the study.
2. Read the following instructions to participants: “[Here’s what you’ll do in this study.]”
3. [Essay provocation? 5 minutes for writing, 5-10 minutes for exchange and feedback]
4. 20 minutes of violent game
5. Measurement of aggressive behavior: [CRTT or hot sauce.]
6. Measurement of aggressive cognition: [Word-stem task or scenario-completion task
7. Demographic variables: gender, past VVG experience, identification as a gamer
8. Screening questionnaire.

**Step-by-step summary of experimenter’s script**

**2. General Instructions to participants**

**3. Essay-writing provocation**

**4. Game play**

[What purpose do we give for the video game session? That we want their evaluation of it? That we’re interested in the effects of games on processing speed / on creativity? That we’re measuring how well they play the game?]

*Hot sauce task*

[Hot sauce recipe?]

[Hot sauce delivery vehicle?]

[At present, I think the best way to handle hot sauce is by administration of straight hot sauce (no vehicle) in a small cup with an opaque lid.]

*Competitive Reaction Time Task*

[I might prefer it were there no duration meter and we just looked at mean intensity across the 25 trials. Might be simpler. Failing that, I might favor standardized and summed intensity and duration across the 25 trials.

What’s the computer doing in the task? Random settings? Steadily increasing settings?]

*[Word-stem completion task or Scenario completion task]*

*Game ratings*

Measures of game violence, excitement, enjoyment, pace of action, difficulty, frustration

*Probe for suspicion*

**What were we testing with this experiment?**

**What do you think we were testing with this experiment?**

**Did anything seem odd about the experiment?**

**What did you think of the [CRTT / hot sauce]?**

**Major points to resolve:**

* **Which measure(s) of aggressive behavior?**
  + How will this affect the cover story?
* **Is provocation necessary? If so, how much?**
* **How will we probe for failures of deception?**