Analysis: Study on the Effect of Violent Video Games on Aggressiveness

Manipulation

Critical

1. Inaccuracies in Manipulation due to Unsupervised Subjects

   An individual's exposure (or non-exposure) to violent video games, during the course of the study, was an un-supervised activity given that viewing of the video games itself was carried out in a natural setting of the participant's choosing (likely their house). Individuals' exposure/non-exposure was assessed pure through self-reporting. This has the potential to result in inaccuracies in the manipulation of the intended property (due to under or over reporting) leading to inaccurate outcomes.

2. Inaccuracies in Manipulation due to Selection Bias

   Although the participants were assigned randomly to one of the two experimental conditions (exposure and non-exposure to violence in video games), the initial participant pool itself was based on individuals' consent to participation in the study (i.e.: no randomization). As a result, the study was likely biased towards subjects who liked video games to begin with. Going one step further, the participant pool was likely also biased towards individuals with a pre-disposition to aggression leading to a reversal of the cause and effect.

   Given the above, the manipulation of the intended property (i.e.: exposure to violent video games) is likely to not have been effective (on account of the fact that aggression was pre-existing) or not effective to the same extent (due to selection bias) on subjects in the study.

Positive

3. Manipulation of Neural Signatures

   Using a variable to represent neural signatures concerned with emotional facial recognition and measurement of the same appears to be a step in the right direction. This is especially so given prior research establishing a relationship between violent imagery and de-sensitization of areas of the brain related to emotional facial recognition. The manipulation of this variable via exposure to violent images followed by a trigger image appears correct as well.

Measurement Instruments

Critical

1. Violence Exposure Score

It appears that this score is arrived at purely through the self-assessment of violence in the games by the subjects of the study. An individual who has been previously exposed to many violent video games may rate a video game as moderately violent while one who was not previously exposed to violent games may rate it very violent. This makes the scores highly subjective and therefore not comparable. There must be an objective measure of how violent a game is.

Positive

2. Measurement of Neural Signatures

The stimuli - photos chosen from the ATR Facial Expression Image Database - and the task - exposure to 120 stimuli including 24 facial stimuli per expression and 6 target stimuli, requiring the subject to react to the target stimuli - and the measurement instrument, namely an EEG used record ERP data all seem well-designed to accurately capture the intended property (i.e.: neural signatures associated with the recognition of facial emotions).

External Validity & Sampling

Critical

1. Lack of Randomization in Participant Pool Selection

The subjects of the study were those who consented to participate in it, not a random selection of people representative of the population of Japan, let alone the rest of the world. This amounts to a non-probability sampling that likely has a high margin of error and cannot be generalized to the population of the world, at large.

2. Study Limited to a Single Sample

A single sample of anywhere from 22 – 18 participants is used to arrive at the conclusions of the study. Given that the study does not use randomization in the selection of its initial participant pool it is susceptible to a higher margin of error. Given this, it is imperative that multiple samples be taken so as to be able to conclusively state the results with any degree of confidence.

3. External Validity Threats Stemming from Selection Bias

The study suffers from an external validity threat owing to several sources of selection bias some of which are mentioned below:

- The subjects chosen were all young adults from 18-29. It can be argued that this is an age when most individuals do not have enormous responsibilities in their lives and therefore have a greater degree of latitude to express themselves. This can unfairly bias the result since middle-aged men and women (or for that matter, those in any other adult age-group beyond 29) exposed to violent video games may very well be less likely to react aggressively given that their life experiences have made them less prone to such behavior.
- The study is limited to individual from a single geographical area – Japan. Given that Japan is among one of the most advanced economies of the world and given its status as an early adopter of most technological innovations – video games being one of them, it can be argued that what is true of Japanese societies is not necessarily generalizable to the rest of the world.
- By the authors own admission, the lack of participants who are children and adults who are avid gamers is a limitation that has the potential alter the outcome.