You are what you play: Video games and Creativity

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Background
Creativity can be thought of in many different ways. A lack of a concrete definition makes it an elusive topic to study and measurements lacking consistency. As such it is an understudied topic. However, there is some research that suggests two main pathways for creative generation; a diffuse method and a thought-intensive method. The former can be considered an “Aha!” moment that occurs while an individual isn’t trying to solve a problem. The latter is found after intense rumination and hard work.

While there is not much that can be done to improve a diffuse method of creative problem solving, there may be ways to practice the focused approach and improve it as a skill (Lehrer, 2012). In fact, the implementation of certain cognitive operations and heuristics to teach creativity as a skill not only increase creative problem solving, but generalize the gains across various topics (Hunsacker, 2005).

Many are attempting to enhance creative skills through video games (i.e. Lumosity) and there are many reports about the helpfulness/harmfulness of video games. However, there is little evidence to support these claims. Some research related directly to creativity has shown that mood and physiological state manipulated through gaming can increase/decrease creativity (Hutton & Sundar, 2010). Indirectly related, working memory can be inhibited by highly violent games, potentially because of the highly arousing nature of the games (Maass, Klopper, Michel, & Lohaus, 2011). If video games can disrupt WM, it is not a far stretch to suggest that they may effect creativity as well (Dietrich, 2004).

The current study asked a very simple question: do games marketed as creative actually improve creativity, while violent games reduce it? To answer this, we picked two popular video games, one violent, and one creative as well as a set of paper and pencil mazes to be used as a control condition.

Methods
Thirty participants deemed ‘non-gamers’ (i.e., reported playing games less than one hour / week) were recruited through the University of Michigan-Dearborn subject pool. The nongamer status eliminated anyone who may have already been familiar with the games. Participants completed a Guilford Alternate Uses Task before and after game play (brick vs. basket; counterbalanced). Participants were assigned to either House of the Dead (HOD), a highly violent game that uses the PS3 Move; Little Big Planet (LBP), nonviolent, creative game that uses the standard PS3; or a paper/pencil maze. They played either game or completed a maze for approximately 45 min and were given 10 minutes to complete each Alternate Uses Task.

Results & Discussion
There were no statistically significant main effects. However, there was one marginally significant interaction accounting for 18% of the variability in data. The interaction suggests that participants tended to increase in creativity only after playing LBP, and not after playing either HOD or mazes, \( F(2,27)=2.85, p < 0.10. \)

While our results are modest, there are reasonable explanations for each interaction. One explanation derives from focus-driven creativity, which we suspect may be occurring more frequently while playing LBP. While this game is not terribly difficult, it is much more complex than HOD or a maze because it forces the player to manipulate objects in novel ways to progress through the level. It may be that once participants had practice manipulating objects in the game that they were able to transfer these ideas to the creativity task. Although we are unsure why this effect only occurred in female participants, we do have a plausible hypothesis. Many of our male participants admitted, after data collection, that they had more experience playing video games than initially indicated.

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