Emotion perception, prosocial and aggressive behaviours in action video game players

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Introduction

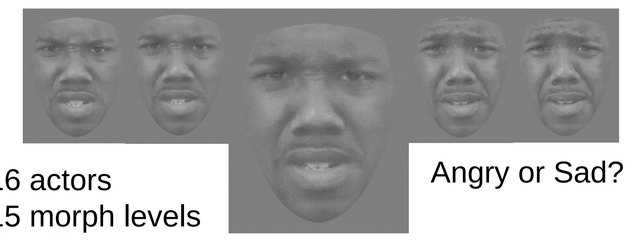
Video games are becoming ubiquitous and raise societal concerns among parents, educators and policy makers. On the one hand, it has been shown that video games such as action-packed, first or third shooter games (aka action video games, AVG) can enhance some perceptual, attentional and cognitive skills [1]; on the other hand, these video games are violent and playing violent video games has been associated with negative outcomes such as increased aggression, decreased prosocial behaviour, and desensitization to negative signals conveyed by violent media. Here we test the hypothesis that **(1) habitual AVG players may recognize emotions better than NAVG players and may exhibit similar affective and social behaviours as players of other violent video games - that is (2) lower helping behavior and (3) higher aggression.**

Protocol & Design

Population

- 43 Action VG players (AVGP). At least 5h/w last 2y
- 41 Non-action VG players (NAVGP). At most 0-1h/w of AVG and at most 0-3h of other games/w

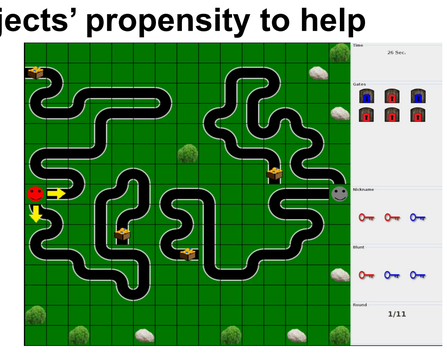
1) 2AFC emotion perception tasks



-16 actors
-15 morph levels
-Two Tasks
Angry-Sad continuum AND Happy-Pain continuum

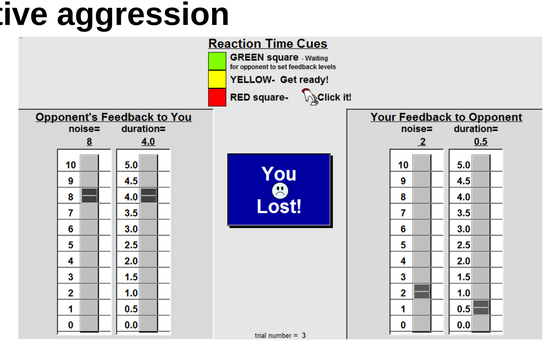
Angry or Sad?

2) Zurich Prosocial Game to assess subjects' propensity to help



Task: reach the treasure while a confederate player (aka computer) is trying to reach his own treasure in a non-competitive environment where the players can decide to help each other altruistically. See ref [3]

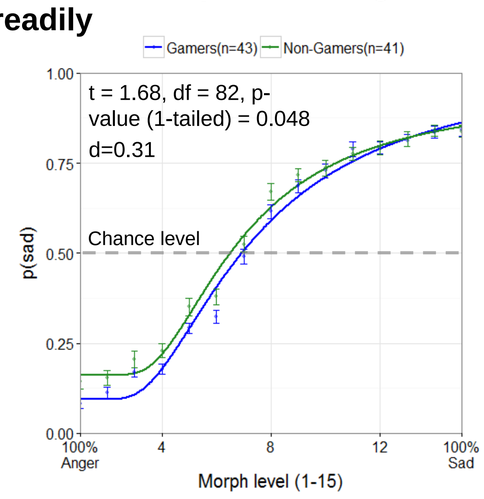
3) Competitive Reaction time task (CRT) to assess reactive aggression



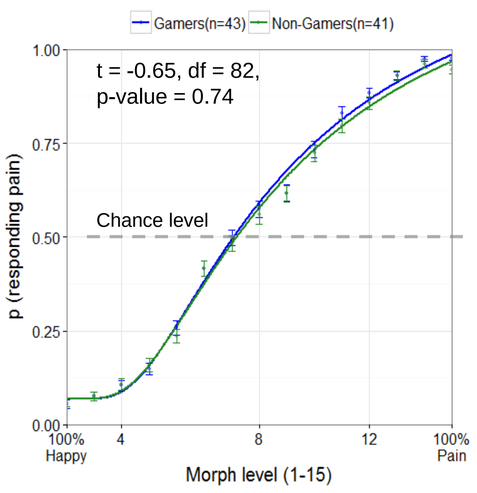
Task: Press faster than confederate (aka computer) the response button upon XXX. Before each trial, participant sets noise level that the confederate will endure upon loosing. Unknown to the participant, the other player is a spiteful computer that sets high levels of pain. See ref [4]

Results

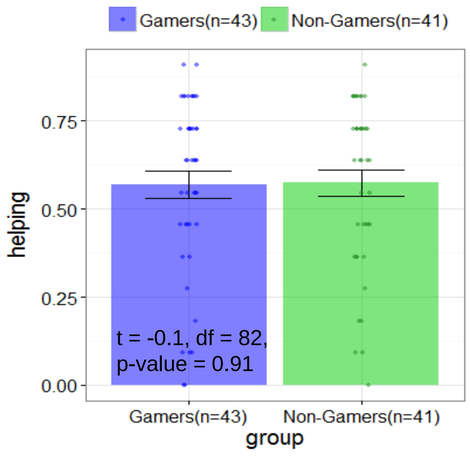
1) Emotion perception:
AVGP tend to perceive anger in faces more readily



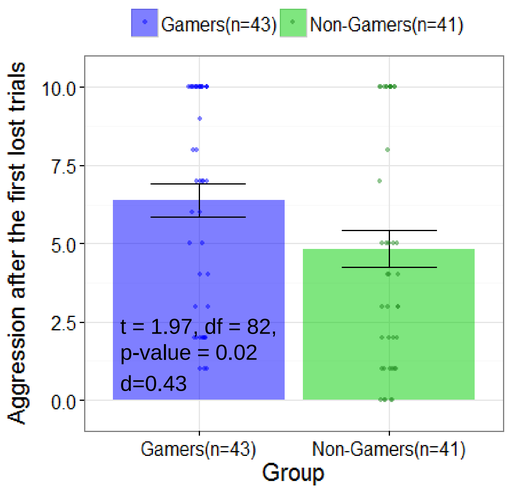
No group difference for facial recognition of Happy-Pain

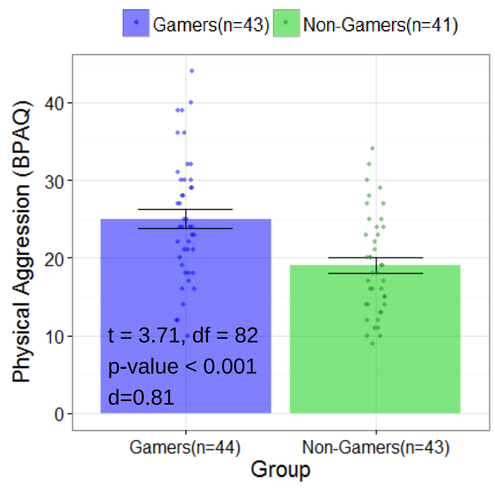


2) Zurich Prosocial Game:
AVGP are not less helpful than NAVGP

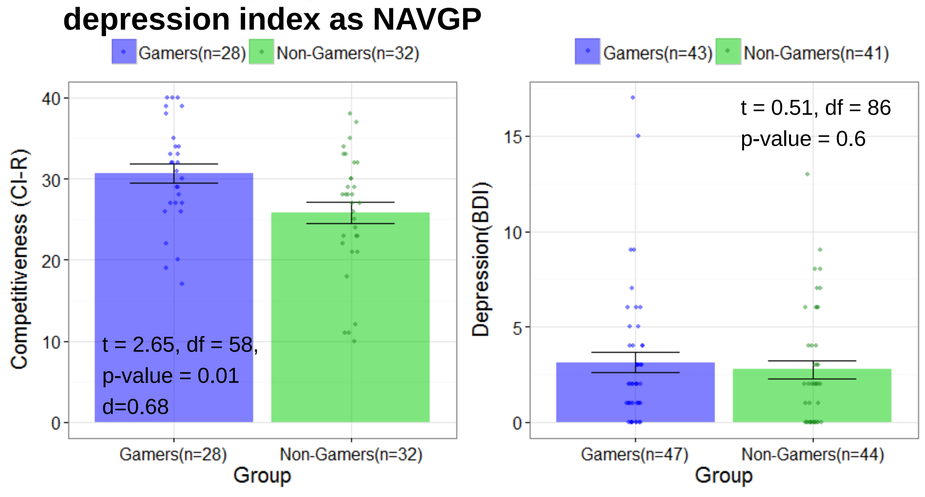


3) CRT task and aggression questionnaire (BPAQ): AVGP display higher reactive and higher physical aggression than NAVGP

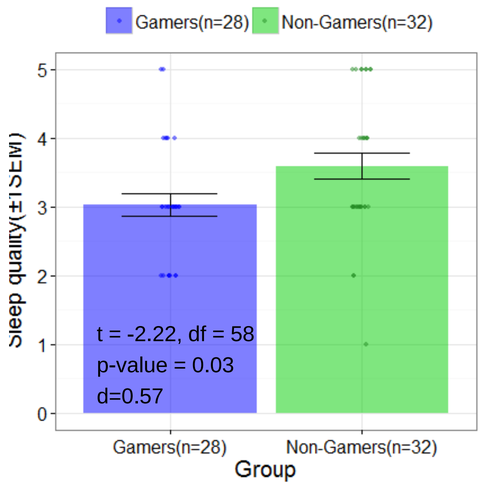


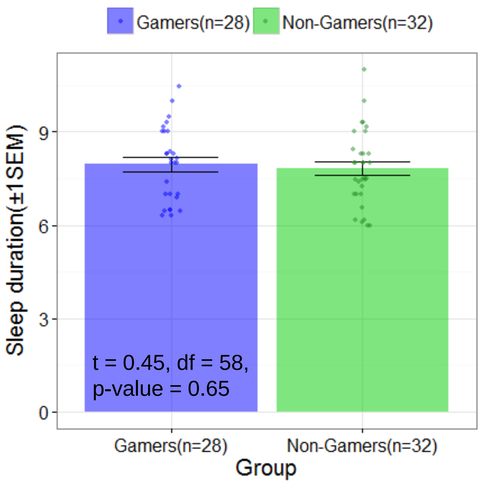


Questionnaires on competitiveness and depression:
AVGP display higher competitiveness, but similar depression index as NAVGP



Sleep quality and duration: AVGP display lower sleep quality compared to NAVGP despite equal sleep duration





Conclusions

- Unlike what was expected from enhanced perceptual skills, AVGP were not more accurate than NAVGP at distinguishing emotions, except for anger that they seem to recognize more readily.
- Unlike what was expected based on lesser helping behaviour after violent video game exposure, AVGP were not less helpful than NVGP as measured by the Zurich Prosocial Game
- Our results corroborate those of the literature on violent media use by show that AVGP show increased aggression (evaluated experimentally or using questionnaires) than NAVGP.
- We also found that AVGP displayed higher competitiveness (CIR questionnaire) compared to NAVGP and that competitiveness, irrespective of group, is highly predictive of aggression levels (not shown).
- Finally, AVGP displayed lower levels of sleep quality compared to NAVGP, despite equal sleep duration and depression level. This supports the idea that electronic media use disrupts sleep quality.
- Overall, our data suggest that AVG play, like other violent media exposure, is associated with increased aggression. They also underline the importance of measuring other determinants of behaviour (competitiveness or sleep) to better characterize the sources of inter-individual variations in emotional and social behaviours.

Bibliography:
[1] Green & Bavelier 2012, Curr Biol, 22(6):R197-206
[2] Anderson & Bushman 2002, Human Aggression, Annu.Revu, 53:27-51
[3] Leiberg et al 2011, Plos One6(3)-e17798
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