

**To kill or not to kill -**

**Behavioral, physiological and personality markers of moral decision-making in video games**

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## Abstract (464 words)

Although the concept of morality reaches back to discussions in the ancient Greece of Aristotle and has been studied thoroughly by cognitive, developmental and moral psychologists for decades (Haidt & Joseph, 2007), novel and technology-based research on virtual reality and video games have now contributed substantially to the understanding of morality (e.g., Navarrete et al., 2012; Weaver & Lewis, 2012). Furthermore, there is an increasing popularity of moral gameplay (Consalvo et al., 2019), which provides players with the option of meaningful interactivity and high emotional engagement (Oliver et al., 2015). However, experiments on virtual, moral decision-making are still scarce, and in the context of gaming investigations they mostly focus on violent (im)morality (e.g., Hartmann & Vorderer, 2010). Furthermore, most studies involve self-reports or moral judgements (e.g., Haidt, 2001), thus lacking behavioral measures, such as actual moral decision-making (e.g., Tamborini et al., 2018). Unfortunately, only few experiments have further extended their methodological scope to include more objective measures that are less susceptible to social desirability, such as psychophysiology (e.g., de Jong et al., 2002; Krosch et al., 2012).

The current experimental lab study investigates behavioral, psychophysiological, and relevant personality patterns (e.g., empathy) in relation to moral decision-making in gaming. Among other research questions, we propose that although (a) players generally prefer to act morally sound (e.g., Weaver & Lewis, 2012), (b) playing an immoral character leads to more immoral decision-making than playing a moral character (e.g., Hartmann & Vorderer, 2010), and (c) decision-making under time pressure leads to a greater proportion of choosing moral (vs. immoral) options (e.g., Tinghög et al., 2016). Furthermore, we assume that traits like (d) empathy

decreases (e.g., Hartmann et al., 2010) and (e) trait moral disengagement increase immoral decision-making (e.g., Bandura et al., 1996). Lastly, we expect (f) different physiological patterns for moral versus immoral actions (cf. Krosch et al., 2012).

A final sample of  $N = 101$  participants took part in a laboratory experiment at XXXXX. After giving consent, participants answered questionnaires on demographics, gaming habits, and relevant personality traits (e.g., empathy; Davis, 1983). After being cabled with a heart rate monitor, participants played one training and three experimental chapters of the video game *Detroit: Become Human* (approx. 55 min. total playing time) featuring up to 13 moral decisions. Before playing participants were randomly assigned to one of three conditions in which they played (1) a morally framed character, (2) an immorally framed character, or (3) a character without framing (control condition). After playing, participants filled out questionnaires evaluating the playing session. Subsequently, participants were thanked and remunerated.

Data analyses include, among other methods,  $\chi^2$ -tests, pooling functions, logistic regressions, and trend analyses. Results will be discussed with regard to existing theoretical models on moral gameplay (e.g., Melzer & Holl, 2021). Conclusions and implications for further studies will be drawn.

*Keywords:* morality, gaming, decision-making, empathy, psychophysiological measures

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