A Mixed Method Study Using Comparative Analysis of Moral Judgment in Student and Police Officer Populations

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Introduction

Background

- Every day, people are confronted with moral dilemmas (e.g., should one utter a harmless lie, jaywalk, etc.), yet much remains debated or understudied about the complexities surrounding ethical decision-making
- Previous research using both textual descriptions and desktop virtual reality (VR) as modalities for studying moral situations has focused on building contextual salience with the latter being claimed as triggering more emotional responses and study participants behaving in a utilitarian manner [1]
- Hypothetical moral dilemmas are one tool for investigating moral judgment and decision-making. However, translating hypothetical moral dilemmas into realistic experiences presents many ethical and experimental challenges [2]

Focus of Study

- We expand on prior research employing a mixed method approach, utilizing the Agent-Deed-Consequence (ADC) model of moral judgment developed by Dubljević and Racine [3] and corroborated by Dubljević and colleagues [4] to examine how study participants classify decisions and actions as either ethical or unethical to provide a more nuanced approach to understanding ethical decision-making and how these decisions translate into behaviors
- The pilot study incorporated textual and virtual reality moral dilemmas
- The Agent-Deed-Consequence (ADC) model states that moral judgment consists of three different components:
  1. The ***Agent (A)*** component revolves around the character of the person performing the action
  2. The ***Deed (D)*** relates to the action the agent is performing
  3. The ***Consequence (C)*** is the direct result of the action being performed
- The ADC model applies virtue ethics, deontology, and consequentialism moral theories to these components. Using these moral theories, the ADC model concludes that moral judgments are positive if all three of its components are positive and negative if all three of its components are negative. This model is useful for a variety of situations due to its ability to deduce ethicality

Keywords:
moral judgment, virtual reality, moral dilemmas, ethical decision-making, normative ethics, law enforcement

Virtual Reality Headset

Methods & Materials

The study expands on prior research using a mixed methods approach:

Qualitative Data Collection, Transcription, and Data Analysis

- We conducted semi-structured interviews with state and local police officers (*N*=20) to ascertain the plausibility of our stimuli and observe their responses to a textual moral dilemma
- Participants *(hidden population)* were recruited through the convenience sampling method using a snowball strategy to obtain further variation in the study [5]
- The interviews were transcribed by means of applying an intelligent verbatim transcription technique, reviewed for anonymity, and coded using the qualitative analysis software MAXQDA.

Police Officer Sample Demographics [*N* = 20]

- Male: [*n* = 16] / Female: [*n* = 4]
- Years of Law Enforcement Experience: [Mean = 18.80 / *SD* = *6.34*]

Quantitative and Data Analysis

- We programmed the textual moral dilemma in *Unity Real-Time Development Platform Version 2020.3.8*, and conducted a quantitative measurement of **university undergraduate and graduate students (*N*=22)** in the southeastern United States using *Oculus Quest 2 Head Mounted Display* virtual reality headsets

Textual Moral Dilemma & VR Visual Graphics from Pilot Studies

Textual Moral Dilemma:

The moral situation involved a member of the emergency response services that is either described as being sadistic **(A-)** or dedicated **(A+)**, reacting to a violent group of men threatening to harm a single female by either ramming his vehicle into the group **(D-)** or blocking the intersection **(D+)**, which leads to several individuals being injured **(C-)** or the woman being saved **(C+)**.

Virtual Reality Dilemma:

Positive Agent (A+)

Positive Deed (D+)

Positive Consequence (C+) Ending VR Screen

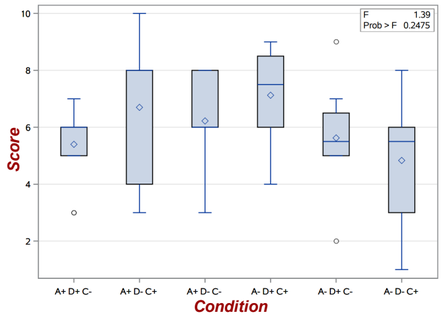
Negative Agent (A-)

Negative Deed (D-)

Negative Consequence (C-) Ending VR Screen

Results

- All interviewees (*N* = 20) stated that textual moral dilemma was logical, plausible, and realistic, as well as provided feedback to enhance the virtual reality moral dilemma
- Example Feedback Excerpt:
  Interviewer: *"Does this scenario sound logical, plausible, and realistic?*
  Police Officer: *"Three years ago, no, but now (2022) yes ." (PO-013)*
- Insights: Demonstrates the importance of situational factors (social norms and accepted behaviors) in determining contextual salience for moral judgment
- For the VR scenario, we observed no statistically significant interaction between the positive or negative valences of agents, deeds, and consequences and the moral acceptability of the vignette (F (5, 45)= 1.39, p = .2475). However, *Power Analysis* revealed we can expect statistical significance with a larger sample size



Discussion & Conclusions

- The findings from both the police officers and student population, and our analyses show differences between the Agent, Deed, and Consequence effect on moral acceptability
- The Agent VR component in certain instances elicited an emotional response from the pilot participants when compared to the Deed and Consequence components
- Lessons Learned:
  1. The pilot study demonstrates the need to distinguish and record participant characteristics such as biological sexes in order to account for variance in decision-making relating to the affective domain (emotions) and situational factors
  2. Additional literature review of best practices and inclusion of pilot study feedback and observation is critical to sustaining internal and external validity for future planned experiments and to achieve statistical significance
- The results of the pilot study potentially qualify the findings in prior research (e.g., [4]) that found a weaker effect of the Agent component and lends support to the original theoretical model which posits that all three subcomponents should have equal normative weight [6]

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References

1. Patil, I., Cogoni, C., Zangrando, N., Chittaro, L., & Silani, G. (2014). Affective basis of judgment-behavior discrepancy in virtual experiences of moral dilemmas. *Social Neuroscience, 9*(1), 94-107. https://doi.org/10.1080/17470919.2013.870091
2. Ramirez, E. J., & LaBarge, S. (2018). Real moral problems in the use of virtual reality. *Ethics and Information Technology, 20*(4), 249-263. https://doi.org/10.1007/s10676-018-9473-5
3. Dubljević, V. and Racine, E. (2014): The ADC of Moral Judgment: Opening the Black Box of Moral Intuitions with heuristics about agents, Deeds and Consequences, *AJOB – Neuroscience, 5* (4): 3-20.
4. Dubljević, V., Sattler, S., & Racine E. (2018): Deciphering moral intuition: How agents, deeds and consequences influence moral judgment, *PLOS One*, https://doi.org/10.1371/journal.pone.0204631
5. Atkinson, R., & Flint, J. (2001). Accessing hidden and hard-to-reach populations: Snowball research strategies. *Social Research Update*, (33), 1–4. https://sru.soc.surrey.ac.uk/SRU33.PDF
6. Dubljević, V. (2021): The normative implications of recent empirical neuroethics research on moral intuitions, *Neuroethics*, https://doi.org/10.1007/s12152-021-09465-9