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EXPLORING THE RELATIONSHIP BETWEEN PERSONALITY AND MORAL  
REASONING DURING THE COVID-19 PANDEMIC

by

NITI CONTRACTOR

A thesis submitted in partial fulfillment of the requirements  
for the Honors in the Major Program in Psychology  
in the College of Sciences  
and in the Burnett Honors College  
at the University of Central Florida  
Orlando, Florida

Spring Term, 2021

Thesis Chair: Daniel McConnell, PhD

## ABSTRACT

Morality has been a subject of study for centuries, though there is still much that is not understood about the factors that dictate moral decision making and moral identity. This study examines the relationship between the Big Five Personality traits (agreeableness, openness, neuroticism, conscientiousness, and extraversion) as well as empathy and moral decision making. However, we use a slightly different methodology than previous studies on morality and personality by incorporating more relevant moral dilemmas related to the ongoing COVID-19 pandemic in addition to the purely hypothetical dilemmas used in previous research (referred to as standard dilemmas). Additionally, rather than considering only the response to the dilemma as variable, this study also explored the relationship between these personality traits and the guilt felt by the decision made as well as how difficult participants felt it was for them to make the decision. The results suggest that there is a relationship between certain aspects of personality and the guilt felt by moral decisions as well as how difficult one finds making a decision. Additionally, the results imply that the relevance of the dilemma does significantly impact moral dilemma decisions and the feeling associated with such decisions.

## DEDICATIONS

For all the doctor's nurses, and healthcare workers who worked tirelessly to save lives. The scenarios in this thesis may be hypothetical, but many face such situations every day as they strive to save lives.

For my parents who supported me through this process, taught me the value of hard work and even more importantly, the value of morality.

## ACKNOWLEDGEMENTS

I would like to thank Dr. Daniel McConnell, my thesis chair who has been invaluable in guiding me through this process. I would also like to thank Dr. Matthew Chin, my committee member, for his time and guidance.

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## INTRODUCTION

Would you sacrifice one person to save the lives of five others? This issue is at the heart of moral dilemmas. As unrealistic as such scenarios seem, doctors, firefighters, and other professionals have to make similar decisions on a regular basis. These scenarios automatically tend to introduce cognitive dissonance in most people; logically saving five people may seem like the obvious choice, but most people consider anything that directly or indirectly causes a person's death as wrong. This speaks to the complex nature of the mechanisms of moral behavior which, despite being a key part of humanity, is still largely a mystery.

In order to learn more about this phenomenon, philosophers and psychologists formed the field of moral psychology and have subsequently proposed various theories about morality. Moral psychology is loosely defined as an interdisciplinary study of thoughts and behavior in an ethical context and tends to consist of collaborative works that combine the theories of philosophy and the empiricism of psychology (Doris et al., 2020). A key aspect of this is studying moral judgement and character; asking what makes someone a *good* person who does *good* things?

Speculation on moral judgment and character predates the formal establishment of moral psychology. Ancient thinkers such as Plato, Aristotle, and Diogenes all suggested different theories of morality upon which modern moral psychology is based. Ancient views of morality included ideas of virtue, hedonism, stoicism, and more (Parry, 2014). Modern moral psychology, however, tends to be split into two views of morality, deontology and utilitarianism.

### **Deontology vs Utilitarianism**

Deontology suggests that in order for behavior to be considered moral, it must fit in with established moral principles such as honesty (Parry, 2014). The philosophy is largely based on

the works of German philosopher Immanuel Kant, particularly his 1785 book, *Groundwork for the Metaphysics of Morals* which has been translated from German and edited by J.B.

Schneewind. While the term “deontology” is not coined or mentioned in the book, Kant does expound upon the idea of duty dictating the morality of a person and/or action stating that (Kant & Schneewind, 2002).

Utilitarianism, on the other hand, argues that an action is moral if its results are overall for the greater good (Bartels & Pizarro, 2011). Utilitarianism is based upon the works of English philosopher John Stuart Mill and relies greatly on context (Hennig and Hütter, 2020). Mill’s work contradicts deontological philosophy by asserting that the moral judgements must be based upon principles that have not already been deemed as moral or immoral, directly countering Kant. Instead, Mill asserts that all actions, including moral actions, are based on happiness and overall ‘utility’ or usefulness (Mill, 1879).

Despite appearing to be competing views, deontology and utilitarianism are not necessarily opposite. Rather, they are different views on defining morality and different standards for making moral judgements along with other factors (Hennig & Hütter, 2020). Kant himself stressed the importance of intent in his works, arguing that without goodwill, no action or judgement could be considered truly moral (Kant & Schneewind, 2002). While Mill did directly oppose Kant’s ideas in his writings, he also placed importance on context and, in extension, intention (Mill, 1879).

For example, in the trolley problem, (one of the more widely used moral dilemma scenarios), someone is asked if they would divert a trolley to kill one person rather than allowing it to run over five people. A utilitarian would say that diverting the trolley is morally right as it saves the life of five people at the expense of one, therefore serving the majority. Conversely, a

deontologist would argue that diverting the trolley is morally wrong as one's direct action results in the death of one person which society deems as wrong. This does not necessarily mean someone with a deontological view of morals would consider standing by and allowing the death of the five people as right, rather, either action is viewed as not morally right as both result in the actor directly or indirectly causing death. Choosing to divert the trolley is not always utilitarian and choosing not to is not necessarily deontological. The reasoning behind the decision is where the true difference between the views lies.

### **Moral Reasoning**

The idea of moral reasoning has been studied by various psychologists, including Jean Piaget and Carol Gilligan, however, it was most famously studied by psychologist Lawrence Kohlberg who proposed his theory of moral development. Kohlberg posited that one's moral identity, their values, judgements, and thought structure relating to morality, developed in three levels split into six stages.

The first level, pre-conventional, is characterized by stage one and two of moral reasoning; punishment- and-obedience and instrumental-relativist. Both of these stages define what is "good" based on consequences of an action. The second level of moral development, conventional, is divided into stage three (interpersonal concordance) and stage four (law and order). Conventional morality is based upon societal expectations rather than direct consequences, speaking to a slightly more deontological view of morality. The third level, post-conventional morality, is broken into stages five (social-contract) and six (universal-ethical) which view morality as being defined not by society, but one's individual beliefs and cultures. While stage five is more utilitarian in nature as it focuses on doing what is best for society as a

whole, stage six is more deontological with an emphasis on morality being defined by an individual's principles (Kohlberg & Hersh, 1977).

### **Factors Affecting Moral Reasoning**

While Kohlberg proposed a series of stages that individual's go through to develop their views on morality, he emphasized that moral development and reasoning is not the same for every individual. Rather, it is a product of a variety of factors such as culture, education, etc. (Kohlberg & Hersh, 1977). Over the years, psychologists and philosophers have posited various theories about what factors influence a person's moral reasoning through the use of moral dilemmas- ambiguous scenarios designed to make a participant choose a moral path (Gleichgerrcht & Young, 2013). Some have hypothesized that social observation or the fear of social judgment encourages deontological judgments (Lee et al., 2018). Others have suggested that intelligence affects moral reasoning, but this has not been supported (Beißert & Hasselhorn, 2016).

Certain personality traits, however, have been shown to be associated with moral judgement, particularly with utilitarian views (Bartels & Pizarro, 2011; Gleichgerrcht & Young, 2013; Kaufman et al., 2019). The Big Five Personality traits consisting of five traits measured on a spectrum, neuroticism, extraversion, openness, agreeableness, and conscientiousness, have especially been shown to influence moral judgment (Abbasi-Asl & Hashemi, 2019; Athota et al., 2009; Tao et al., 2020).

The Big Five personality traits were established in the early 1990s and use five traits to measure an array of personality characteristics (John et al., 2008). Neuroticism is used to determine emotional stability or susceptibility to negative emotions, particularly stress-induced emotions. Extraversion relates to an individual's social stamina and energy. Openness and

agreeableness both relate to an individual's worldview. Openness focuses on an individual's creativity in life or their willingness to try new things while agreeableness focuses on an individual's aversion to hostility and their ability to get along with others. Finally, conscientiousness measures an individual's ability to suppress socially undesirable urges and maintain focus on goals (Abbasi-Asl & Hashemi, 2019). All five traits have been shown to have varying effects on moral decision making, but agreeableness, openness, and neuroticism have been shown to have the strongest relationship with moral reasoning, particularly in endorsing non-utilitarian actions. However, there has been little comprehensive research that directly studies the relationship of personality traits with both utilitarian and deontological views (Athota et al., 2009).

Emotional intelligence has also been found to impact moral judgement through its influence of both personality and empathy. In terms of personality, emotional intelligence was correlated with extraversion as well as openness, agreeableness, and neuroticism which are associated with moral reasoning. These traits are also related to empathy, though empathy independently has been found to be associated with morality. Studies have shown that low levels of empathy are correlated with an increased tendency to endorse utilitarian judgements (Gleichgerricht & Young, 2013; Kaufman et al., 2019). Additionally, one part of the brain activated in moral decision making is also associated with empathy (Knyazev et al., 2015). However, while the relationship between decreased empathy and utilitarianism has been studied, there has been little research done on the morality of high empathy individuals.

### **Other Views on Moral Reasoning**

Due to the presence of research suggesting a much more complex view of morality than was previously thought, many psychologists have attempted to develop alternate views to

deontology and utilitarianism (Hennig & Hütter, 2020). This study aims to complement this by furthering the existing research on personality, empathy, and moral reasoning by emphasizing individuals' views of their own moral decision making. Rather than relying solely on which option participants pick to determine their moral view, this study hopes to incorporate individuals' own feelings about their decision by asking the participants to rate their feelings of guilt and how difficult they found the decision.

Guilt has been found to be associated with personal involvement in moral dilemmas which impacts how a person feels about their moral decisions (Hennig & Hütter, 2020). The assumption of this study, therefore, is that higher levels of guilt indicate that while the participant may have made a choice, they may not view either choice as moral. As previously mentioned, the decision itself does not necessarily indicate an individual's moral views, rather, it is their reasoning behind it. It is possible that a person can view themselves as having picked the least destructive of two options they view as morally wrong rather than viewing their choice as morally right (Bartels & Pizarro, 2011; Hennig & Hütter, 2020). This study therefore posits that while many may choose to make what is considered a utilitarian or deontological decision, those who are higher in traits such as openness, agreeableness, conscientiousness, and empathy will feel more guilty about their decisions and find the decision difficult to make, indicating a view of morality that is not necessarily compatible with either philosophy.

This study also aims to study the impact of different types of dilemmas on moral decision making by including scenarios that participants may see as more realistic. In today's world, with the Coronavirus (COVID) pandemic sweeping the globe, there are realistic situations that could constitute moral dilemmas that would be much more personal and realistic than existing dilemmas. Many studies have shown that personal involvement in a hypothetical

situation plays a key role in moral reasoning (Gleichgerrcht & Young, 2013; Hennig & Hütter, 2020; Lee et al., 2018). This study proposes that dilemmas that are related to participants' current real-world experiences will have a different impact on moral judgement than less relevant scenarios and that individuals will feel more guilty and find the decisions harder to make when presented with a relevant COVID related dilemma rather than a less realistic scenario.

## METHOD

### Participants

The study had 60 participants recruited from the University of Central Florida's SONA recruitment website of varying genders, ethnicities, and ages. Out of this, four participants were excluded due to a failed honesty check. A further three participants were excluded due to problems with attention checks resulting in a sample of 53. Of this 53, 71.7% were female, 42.5% were male, and 3.8% did not identify as male or female. Majority of the participants (73.6%) were white/Caucasian and the mean age was 19.96 with a range from 18-38. Participants, including those excluded from the final analysis, were compensated with 0.5 credits towards their psychology classes.

### Materials

*Sacrificial Moral Dilemmas:* This study used ten sacrificial moral dilemmas (See Appendix A). Five of these dilemmas were taken from previous moral dilemma studies (Bartels & Pizarro, 2011; Hennig & Hütter, 2020). The other five were COVID related moral dilemmas that were developed for this study based on articles relating to dilemmas faced by medical professionals during the pandemic (Robert et al., 2020; Shortland et al., 2020) using a guide created by Hennig and Hütter (2020). While the majority of the COVID related dilemmas are original dilemmas developed for this study, two have been adapted; one from Greene (2001) and one from Hennig and Hütter (2020). Each dilemma required the participant to choose between killing/harming one person through a direct action or to allow several people to die/be harmed indirectly through inaction. None of the dilemmas included scenarios in which the participant would be harmed.

***Likert Scales:*** A two item, five-point, Likert scale was given to participants after each dilemma decision to measure their feelings about their decision. The scale consisted of two questions asking participants to rate their feeling of guilt about their decision on a scale of 1 (Not very guilty) to 5 (Very guilty) as well as rate how difficult they found it to make a decision on a scale of 1 (Not very difficult) to 5 (Very difficult).

***Big Five Inventory (BFI):*** We used a 44 item measure of the Big Five personality traits (John, Donahue, & Kentle, 1991; Goldberg 1990; See Appendix B). The BFI has been shown to be a reliable and valid measure of The Big Five Factors of personality by multiple studies (Arterberry et al., 2014; Rammstedt & John, 2007; Worrel & Cross, 2004). Each statement on the BFI completes the sentence “I see myself as someone who...” The participants are then asked to indicate their agreement with the statement on a Likert scale from 1 (Disagree Strongly) to 5 (Agree Strongly).

***Basic Empathy Scale (BES):*** We used a 20-item measure of empathy (See Appendix C) (Jolliffe & Farrington, 2006). The BES has been validated both by the authors (Jolliffe & Farrinton, 2006) as well as by other studies (Carré et al., 2013). The scale asks participants to rate their level of agreement with a series of statements from 1 (Strongly Disagree) to 5 (Strongly Agree).

***Demographic Questionnaire:*** A basic questionnaire (Appendix D) was given to participants at the beginning of the study in order to collect basic demographic information. This included questions relating to the gender, age, and ethnicity of the participants. This questionnaire also asked if the participant was in the healthcare field as such participants may have different answers to the COVID-related dilemmas.

## **Procedure**

The study took place entirely online. Participants were informed that they were participating in a study on moral decision making. In order to avoid desirability bias, the participants were not told that the study would compare moral judgment to personality until after the study was completed. They were, however, given an overview of the study and instructed to click “I agree” if they consent to participating in the study.

Participants were first given the demographics survey. Following this, participants were randomly assigned to one of two blocks. One group saw the COVID related moral dilemmas first and the other saw the non-COVID related dilemmas first. Participants were presented with one scenario at a time. After reading the scenario, each participant was asked to make a decision regarding what they would do in the situation. In order to assure that participants made a sacrificial decision, participants were provided with two answer choices to pick from rather than being able to enter their decision. Following each scenario decision, participants were asked to rate their feelings of guilt as well as indicate how difficult it was for them to make their decision.

After all ten dilemmas were presented, participants were given the Big Five Inventory and then the Basic Empathy Scale, both of which contained attention check questions. Finally, a manipulation check was given asking participants to indicate if they were shown COVID related dilemmas before non-COVID related dilemmas. After completion of the study, participants were shown a debriefing page with additional details about the study as well as contact information participants can use if they have questions.

## **Statistical Analysis**

Before conducting statistical tests, the data was first organized and aggregated. The decisions made in regards to the dilemmas were numerically coded with a score of 1 assigned to

the “yes” response (risk the life of one person to save five) and a score of 0 assigned to the “no” response (do not risk the life of one person to save five). These scores were then added resulting in two totals, “Standard Dilemma Total” and “COVID Dilemma Total” with a score between 0 and 5. The guilt and difficulty ratings were averaged across the five standard dilemmas and the five COVID dilemmas.

In order to test the relationship between personality traits and moral decision making, we ran multiple regressions using the Big Five Personality Traits (Extraversion, Agreeableness, Openness, Conscientiousness, and Neuroticism) and empathy as predictors. These predictors were applied to six different dependent variables: standard dilemma total, COVID total, standard guilt, standard difficulty, COVID guilt, and COVID difficulty. Individual regressions were run on the six dependent variables using only the focal predictors of agreeableness, openness, conscientiousness, and empathy.

A paired-sample t-test was also used to determine whether there was a difference in responses between standard dilemmas and COVID related dilemmas. A paired-sample t-test was also used to compare the differences between levels of guilt and difficulty for the two categories.

## RESULTS

Results showed that, on average, participants ( $N = 53$ ) were less likely to respond “yes” to the standard dilemmas, indicating that they would pick the option that involved actively risking the lives of one (or a few) people in order to save the lives of a greater amount of people ( $M = 2.17, SD = 1.09$ ) than they were to the COVID related dilemmas ( $M = 3, SD = 0.96$ ). However, participants were on average more likely to feel guilty ( $M = 3.34, SD = 1.18$ ) about their decisions to standard dilemma scenarios than they were about their decisions to COVID dilemma scenarios ( $M = 2.80, SD = 0.98$ ). Participants were also more likely to find the decision more difficult to make when presented with standard dilemmas ( $M = 3.17, SD = 1.18$ ) rather than when presented with COVID dilemmas ( $M = 2.73, SD = 0.91$ ).

The results of a paired samples t-test supported the hypothesis that there was a significant difference in the responses given for standard and COVID dilemmas with participants more likely to say “yes” to standard dilemmas rather than COVID dilemmas ( $M = -0.83, SD = 1.42; t(52) = -4.24, p < 0.05$ ). Interestingly, the paired sample t-test also indicated that there was a significant difference in levels of difficulty ( $t(52) = 3.95, p < 0.05$ ) and guilt ( $t(52) = 5.06, p < 0.05$ ) between standard and COVID dilemmas with standard dilemmas being rated as more difficult to make and eliciting more guilt than COVID dilemmas. This supports the notion that the relevance of the scenario impacts moral decision making.

Multiple regressions were conducted in order to determine the relationship between personality traits and moral decision making. The total response for standard dilemmas was not significantly predicted by extraversion ( $t = 1.07, p > 0.05$ ), agreeableness ( $t = 0.32, p > 0.05$ ), conscientiousness ( $t = 1.21, p > 0.05$ ), neuroticism ( $t = 1.47, p > 0.05$ ), openness ( $t = 0.53, p > 0.05$ ), or empathy ( $t = -1.26, p > 0.05$ ). The level of guilt in relation to standard dilemmas was

also not significantly predicted by extraversion ( $t = -0.07, p > 0.05$ ), agreeableness ( $t = -0.31, p > 0.05$ ), neuroticism ( $t = -0.56, p > 0.05$ ), openness ( $t = -1.17, p > 0.05$ ), or empathy ( $t = 0.54, p > 0.05$ ). However, conscientiousness was found to be a moderately significant predictor of guilt in relation to standard dilemmas ( $\beta = 0.29, p < 0.10$ ). The level of difficulty associated with making a decision for a standard dilemma was not significantly predicted by extraversion ( $t = 0.34, p > 0.05$ ), agreeableness ( $t = -0.53, p > 0.05$ ), conscientiousness ( $t = 1.11, p > 0.05$ ), neuroticism ( $t = 0.36, p > 0.05$ ), or empathy ( $t = 1.36, p > 0.05$ ). However, the results of the regression did indicate that openness was a significant predictor of difficulty rating for standard moral dilemma decisions ( $\beta = -0.31, p < 0.05$ ).

The total response to COVID dilemmas was not found to be significantly predicted by extraversion ( $t = 1.14, p > 0.05$ ), agreeableness ( $t = 0.44, p > 0.05$ ), conscientiousness ( $t = 0.387, p > 0.05$ ), neuroticism ( $t = 1.33, p > 0.05$ ), openness ( $t = 0.54, p > 0.05$ ), or empathy ( $t = -0.52, p > 0.61$ ). While extraversion ( $t = 1.52, p > 0.05$ ), agreeableness ( $t = -0.32, p > 0.05$ ), neuroticism ( $t = 0.36, p > 0.05$ ), or empathy ( $t = -0.43, p > 0.05$ ) were not significant predictors of guilt for COVID dilemma decisions, high levels of conscientiousness ( $\beta = 0.34, p < 0.05$ ) were found to be associated with higher levels of guilt and high levels of openness ( $\beta = -0.32, p < 0.05$ ) were found to be associated with less guilt for COVID dilemma related decisions. Only openness ( $\beta = -0.26, p < 0.10$ ) was found to be a moderately significant predictor of difficulty rating with the results implying that higher levels of openness are related to lower ratings of difficulty. Extraversion ( $t = 1.06, p > 0.05$ ), agreeableness ( $t = -0.04, p > 0.05$ ), conscientiousness ( $t = 1.62, p > 0.05$ ), neuroticism ( $t = -1.83, p > 0.05$ ), and empathy ( $t = 0.2, p > 0.05$ ) were not significant predictors of difficulty.

## DISCUSSION

### **Personality and Moral Reasoning**

This study supports the findings of Abbasi-Asl and Hashemi (2019) in suggesting that personality is not a significant predictor of moral decision making, though many of the results are contrary to much of the literature on personality and moral reasoning. The hypothesis that certain personality traits influenced the level of guilt felt about a decision and how difficult they found it to make the decision based on previous research (Athota et. al., 2009; Bartels & Pizarro, 2011; Hennig & Hütter, 2020) was partially supported. The personality traits predicted to be most related to guilt and difficulty ratings, openness, agreeableness, conscientiousness, were not all found to be predictors of higher or lower ratings of guilt or difficulty. Agreeableness, which previous studies (Abbasi-Asl & Hashemi, 2019; Athota et al., 2009) had found to be the strongest predictor of moral reasoning was found to have no significant association with decision, guilt, or difficulty rating. However, conscientiousness was found to moderately influence the level of guilt in standard dilemma decisions as well as significantly influence the level of guilt felt about decisions made in relation to COVID dilemmas.

Openness did appear to significantly impact the difficulty rating of standard dilemma decisions and guilt associated with COVID dilemma decisions as well as moderately impact the difficulty rating of COVID dilemma decisions. In previous moral reasoning studies, openness was found to be a positive predictor of utilitarian decisions (Athota et al., 2009) or found to be a positive predictor of “moral integrity” which is associated with deontological decisions and a firm sense of moral self (Abbasi-Asl & Hashemi, 2019). In contrast, our study found that high levels of openness were associated with lower levels of guilt and/or difficulty and not at all associated with a dilemma decision.

The idea that empathy would also be a significant predictor of moral decision making and the associated guilt and difficulty rating based on previous research, (Gleichgerrcht & Young, 2013; Kaufman et al., 2019) was also not supported by the results of this study. Empathy was not found to be even a moderately significant predictor of moral judgement, guilt, or difficulty rating for either standard or COVID dilemmas.

Despite many of the personality traits not being found as significant predictors of guilt, difficulty, or response, the influence of openness and conscientiousness on guilt and difficulty ratings do indicate that personality does play a role in the feelings related to moral decisions which in turn may influence moral identity. This also implies that the decision itself is not the only factor that is emblematic of morality, but rather only a part of a more complex identity.

### **Dilemma Relevance and Moral Decision Making**

The results of the t-test did support the hypothesis that the relevance of the scenario impacted moral decision making and the accompanying feelings of guilt. The total responses for standard and COVID dilemmas were significantly different as were the average ratings of guilt and difficulty. Participants were more likely to make a utilitarian decision (risking the life of a few people to save the lives of more) when presented with standard dilemmas than one presented with more relevant COVID related dilemmas. However, participants were actually likely to feel more guilty about the decision they made when presented with standard dilemmas than when presented with COVID dilemmas. Participants also found it more difficult to make a decision when presented with a standard dilemma. This implies that people are less sure of themselves and their decisions when the situation is less realistic but may react differently when actually faced with a real dilemma situation.

As stated before, a larger sample size would be needed to further support this. Nonetheless, the results imply that the relevance of a scenario does have an impact on moral decision making and brings into question the efficacy of using purely hypothetical and unrealistic scenarios when studying moral decision making.

### **Limitations and Possible Further Research**

While this research was limited in scope due to a moderately small sample size ( $N = 53$ ), the results do have some implications related to the healthcare field as well on future research in the area of moral decision making. This study used college students out of which only one worked in the medical field, but it is possible that a sample of medical professionals would make different decisions or feel differently about the COVID related dilemmas. Such research could aid in understanding the trauma faced by essential health care workers who have had to make such decisions when dealing with severely ill patients or pandemic situations. During the COVID-19 pandemic specifically, research has shown that medical professionals are facing a myriad of difficult moral decisions (Robert et al., 2020; Shortland et al., 2020) that will significantly affect their mental health in the future due to high levels of guilt.

The use of a college student sample in this study may also have affected the results in other ways as college students tend to be young and may not have completed their moral development. The results of this study were also derived using a sample composed of mostly white females which may also have significantly impacted the results. The use of a more diverse and/or older sample may yield different results than those of this study.

The role of openness as indicated by the results of this study is also an interesting phenomenon that warrants further research. Some studies on the relationship between openness and guilt have suggested that openness is negatively correlated with guilt as guilt is associated

with self-restraint and “what-if” thinking while openness is associated with less constricted views (Harder & Greenwald, 1999). Additionally, higher levels of openness could be related to greater consideration of all the options and a more thorough thought process, therefore reducing guilt and difficulty. Further studies that involve timing the decision-making process may be useful in determining this.

Perhaps most importantly, the results of this study indicate that moral decision-making and moral identity is more complex than may have previously been believed. The lack of significant association between personality traits and the responses to the dilemmas supports the idea that moral identity is not defined by a set of personality characteristics or even a set of beliefs that align with deontological or utilitarian views. Rather, this study suggests that moral reasoning, and by extension moral identity, is determined by several factors including the relevance of the dilemma/situation, difficulty making the decision, and guilty feelings about the consequences of the decision.

This study also suggests, particularly in regard to dilemma relevance, that moral reasoning varies from situation to situation and therefore implies that moral identity is not a static trait. While this study did not directly ask participants about their reasoning behind a certain decision or feeling, further studies that take a more qualitative approach may uncover more about the intricate thought process related to moral decision making and identity. As this study implies that there is a significant difference in people’s decisions when given a relevant scenario rather than an unrealistic one, further research on the effects of dilemma relevance may also aid in expanding the understanding of moral behavior in real life situations and its impact of behaviors such as helping and even COVID-19 related precautions such as mask wearing and social distancing.

## **Appendix A: Moral Dilemmas**

## Appendix A: Moral Dilemmas

### *Standard Moral Dilemmas:*

- Taken from Hennig & Hütter (2020): You are a doctor in a hospital. You have five patients, each of whom is about to die because of a failing organ unless they have donor organs implanted within a very short period of time. A new patient is rushed into the hospital after a serious car accident. This patient is severely wounded and in need of immediate surgery. While performing a long and complicated surgery on the victim of the accident you realize that you could inconspicuously cut through one of his arteries, without anyone ever being able to prove that you did anything on purpose. Hereby you would receive organ donations for the other five patients, the victim of the accident would die though. If you do not cause the death of the accident victim and then transplant his organs, however, the other five patients will die. To avoid that the other five patients die because of failing organs, you would have to cut through one of the arteries of the accident victim so that you could transplant his organs after his death. Should you cut the patient's arteries?
- Taken from Hennig & Hütter (2020): You and a fellow researcher are working in a small laboratory on the development of new technologies. You have recently developed a powerful energy converter, which you consider advanced and efficient. Irrespective of potential other areas of application for this converter, your colleague, who is in charge of the research project, has already decided to sell the converter to a local arms dealer. You know that he plans to contact the buyer, who would use the energy converter for the manufacturing of a weapon, with which several people would be killed today. You could poison your colleague by bringing him in contact with a chemical you are in possession which leads to immediate death in the case of direct skin contact. Because this chemical is normally found in laboratories like yours, everybody would think that it was just a lab accident. You merely would have to trickle a drop of the chemical on his skin in an unobserved moment. This way you would ensure that the energy converter is not used as a weapon, though you would also cause the death of your colleague. If you do not poison your colleague, however, he will sell the energy converter to the arms dealer, and several people will lose their lives. Should you poison your colleague?
- Taken from Bartels & Pizarro (2011): In the path of a runaway train car are five railway workers who will surely be killed unless you, a bystander, do something. If you flip a switch, the train will be diverted onto another track, where it will kill a single railway workman. In this situation, would you flip the switch?
- Taken from Bartels & Pizarro (2011): You are the late night watchman in a hospital where an accident has occurred in one of the onsite testing labs, and now there are deadly fumes rising up from through the hospital's ventilation system. The fumes are headed to a certain area where there are five patients who will surely die. If you flip a switch, the ventilation system will cause the fumes to bypass this room and enter a room containing a single patient, killing him. In this situation, should you flip the switch?

- Taken from Bartels & Pizarro (2011): In the path of a runaway train car are five railway workmen who will surely be killed unless you, a bystander, do something. You are standing on a pedestrian walkway that arches over the tracks next to a large stranger. Your body would be too light to stop the train, but if you push the stranger onto the tracks, killing him, his large body will stop the train. Should you push the stranger?

*COVID Related Dilemmas:*

- Adapted from Hennig & Hütter (2020): You are a doctor and Head of Infectious Disease at a major US hospital. You are in charge of decisions regarding the treatment of patients with COVID-19. The symptoms of the disease are serious, and 3% of patients with the disease will die. Because it is a new virus, which has not yet been intensively studied, no safe and reliable medications have been developed yet. However, you have received a shipment of drugs that are still in the stage of testing, which can more effectively treat the viral infection, but show severe side effects. If you administer the drug to the patients, the fatality rate of the disease is expected to drop to 1%, but another 1% will die from the side-effects of the new drug, effectively dropping the total fatality rate to 2%. If you do not administer the drug to the patients the fatality rate will remain at 3%. Do you use the new drug?
- You are the head of the ICU at a hospital in the middle of a big city. The beds in the ICU are full except for a waiting area that has been converted to accommodate more patients. In this converted area there are four empty beds and one critically ill COVID-19 patient. The patient is an elderly man on a ventilator who is severely ill and in isolation. Consequently, the other four beds in the area cannot be used. A car crash has put five people in a critical state, and they are in surgery and will likely make a full recovery from their injuries if given proper postoperative intensive care immediately after their surgeries. Without it, however, their chances of survival diminish greatly. In order to accommodate the car crash victims, the COVID patient will have to be moved to a less crowded ICU in a suburb an hour away. The move may be detrimental to the patient and may kill him. However, if you do not decide to move the COVID patient, the five car crash victims will die. Should you move the old man?
- You are a worker in a pharmacy running instant (within 30 minutes) COVID tests. One of the people you are testing, a college student, loudly talks about how he doesn't believe in the efficacy of masks and refuses to wear one and thinks that the severity of COVID is overstated. Furthermore, he tells you about a party he is planning to have with some of his friends that evening. When his test comes back positive, you realize he is most likely going to infect a lot of people at his college as he probably will not isolate himself. When looking at his medical sheet, you realize that he is allergic to a certain compound found in a common over the counter medication used to relieve fevers. If you slip the medication into a cup of water and give it to the patient, he will likely become very sick and have to go to the hospital, but he won't be able to go to his party and infect other people. Do you give the student the medication?

- Adapted from Greene (2001): You are a high-ranking public relations officer for the Centers for Disease Control and Prevention (CDC) charged with monitoring public health statements related to COVID-19. A drug company comes forward with an FDA approved vaccine that has been shown to decrease a person's chances of contracting COVID-19. This would allow people to slowly return to normal life and reopen businesses. However, a small percentage of people are likely to contract COVID-19 from the vaccine purely by chance. There is no way to tell who is susceptible to getting the disease from the vaccine. You are scheduled to give a press statement on the vaccine the next day, should you encourage people to take the vaccine despite the chance they may contract COVID-19?
- You are a health worker working in an inner-city clinic for low income and homeless persons. A frequent visitor to this clinic, a homeless man, is known to have recently tested positive for COVID-19 and is beginning to manifest severe symptoms. As he is homeless, the man has no place to isolate himself. He has also claimed in the past that he would never wear a mask. On a morning that the clinic is opened to specifically treat older and/or immunosuppressed patients, you see the man about to enter the clinic while not wearing a mask, and you know he will pass the virus on to many of the high-risk patients, and staff, in the clinic. He ignores your calls and gestures to stop, and instead appears to collapse in front of the clinic door, insisting that he is having trouble breathing and needs treatment immediately. The nearest hospital is too far away and an ambulance will take at least half an hour to arrive in city traffic. You do not have the equipment to treat him outside of your clinic, but can do so if you bring him in, most likely saving his life. However, if you let the man in, it is likely he will pass on the virus to your susceptible patients who may then become very ill and die. Should you let the man enter?

## **Appendix B: Big Five Inventory**

## Appendix B: Big Five Inventory

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

1 Disagree strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
---------------------------	------------------------	------------------------------------	---------------------	---------------------

*I see myself as someone who...*

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. _____ is talkative</li> <li>2. _____ tends to find fault with others</li> <li>3. _____ does a thorough job</li> <li>4. _____ is depressed, blue</li> <li>5. _____ is original, comes up with new ideas</li> <li>6. _____ is reserved</li> <li>7. _____ is helpful and unselfish with others</li> <li>8. _____ can be somewhat careless</li> <li>9. _____ is relaxed, handles stress well</li> <li>10. _____ is curious about many different things</li> <li>11. _____ is full of energy</li> <li>12. _____ starts quarrels with others</li> <li>13. _____ is a reliable worker</li> <li>14. _____ can be tense</li> <li>15. _____ is ingenious, a deep thinker</li> <li>16. _____ generates a lot of enthusiasm</li> <li>17. _____ has a forgiving nature</li> <li>18. _____ tends to be disorganized</li> <li>19. _____ worries a lot</li> <li>20. _____ has an active imagination</li> <li>21. _____ tends to be quiet</li> <li>22. _____ is generally trusting</li> <li>23. _____ tends to be lazy</li> <li>24. _____ is emotionally stable, not easily upset</li> </ol> | <ol style="list-style-type: none"> <li>25. _____ is inventive</li> <li>26. _____ has an assertive personality</li> <li>27. _____ can be cold and aloof</li> <li>28. _____ perseveres until the task is finished</li> <li>29. _____ can be moody</li> <li>30. _____ values artistic, aesthetic experiences</li> <li>31. _____ is sometimes shy, inhibited</li> <li>32. _____ is considerate and kind to almost everyone</li> <li>33. _____ does things efficiently</li> <li>34. _____ remains calm in tense situations</li> <li>35. _____ prefers work that is routine</li> <li>36. _____ is outgoing, sociable</li> <li>37. _____ is sometimes rude to others</li> <li>38. _____ makes plans and follows through with them</li> <li>39. _____ gets nervous easily</li> <li>40. _____ likes to reflect, play with ideas</li> <li>41. _____ has few artistic interests</li> <li>42. _____ likes to cooperate with others</li> <li>43. _____ is easily distracted</li> <li>44. _____ is sophisticated in art, music, or literature</li> </ol> |
|---|--|

From John, Donahue, and Kentle (1991)

## **Appendix C: Basic Empathy Scale**

## Appendix C: Basic Empathy Scale

For each statement below, please indicate your agreement or disagreement. Do so by filling in the blank in front of each item with the appropriate number from the following rating scale:

- | 1                 | 2 | 3       | 4 | 5              |
|-------------------|---|---------|---|----------------|
| Strongly Disagree |   | Neutral |   | Strongly Agree |
| 1. _____          |   |         |   |                |
| 2. _____          |   |         |   |                |
| 3. _____          |   |         |   |                |
| 4. _____          |   |         |   |                |
| 5. _____          |   |         |   |                |
| 6. _____          |   |         |   |                |
| 7. _____          |   |         |   |                |
| 8. _____          |   |         |   |                |
| 9. _____          |   |         |   |                |
| 10. _____         |   |         |   |                |
| 11. _____         |   |         |   |                |
| 12. _____         |   |         |   |                |
| 13. _____         |   |         |   |                |
| 14. _____         |   |         |   |                |
| 15. _____         |   |         |   |                |
| 16. _____         |   |         |   |                |
| 17. _____         |   |         |   |                |
| 18. _____         |   |         |   |                |
| 19. _____         |   |         |   |                |
| 20. _____         |   |         |   |                |

From Jolliffe & Farrington, 2006

## **Appendix D: Demographic Questionnaire**

## Appendix D: Demographic Questionnaire

1. Please enter your age:
2. Which of the following best describes your ethnicity:
  - a. Hispanic or Latino origin
  - b. Not of Hispanic or Latino origin
  - c. Prefer not to answer
3. Which of the following best describes your race:
  - a. White/Caucasian
  - b. Black or African American
  - c. American Indian and Alaskan Native
  - d. Asian
  - e. Native Hawaiian or Pacific Islander
  - f. Mixed
  - g. Other
  - h. Prefer not to answer
4. Which of the following best describes your gender:
  - a. Male
  - b. Female
  - c. Other
  - d. Prefer not to answer
5. Do you work in the healthcare field (doctor, nurse, therapist, etc.)?
  - a. Yes
  - b. No

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