Beyond ‘Passion Versus Reason’: Identifying Person and Feature Attributes that Predict Deontological and Consequentialist Moral Judgment

Jeffrey Sean Robinson

A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
Department of Psychology
University of Toronto

© Copyright by Jeffrey Sean Robinson 2017
Beyond ‘Passion Versus Reason’: Identifying Person and Feature Attributes that Predict Deontological and Consequentialist Moral Judgment

Jeffrey Sean Robinson
Doctor of Philosophy
Department of Psychology
University of Toronto
2017

Abstract

The Central Tension Principle asserts that characteristically deontological judgments are preferentially supported by automatic emotional responses, whereas characteristically consequentialist judgments are supported by conscious reasoning and cognitive control. Although a large body of research supports this claim, there are reasons to be skeptical. In Chapter 1 I will outline several criticisms of the Central Tension Principle and propose an alternate framework. In Chapter 2 I will demonstrate that consequentialist moral judgments vary as a function of attachment insecurity, a need to belong, discomfort caring for others, empathy for the group (or individual), and the desires of the people involved in the situation. These data support the idea that to understand moral judgment, one must move beyond the emotion vs. reason dichotomy and take into account other features of the situation. In addition, it highlights an emotional route to consequentialist judgment. In Chapter 3 I will demonstrate that deontological and consequentialist responders use equal amounts of emotional language overall when justifying a moral judgment, but deontological responders use more anger language and consequentialist responders use more sadness language. In Chapter 4 I will demonstrate that
another feature that influences moral judgment is the amount of effort the protagonist exerts to arrive at a moral conclusion. I will provide evidence that when the actor exerts little effort, participants judge a deontological actor to be morally superior to a consequentialist actor, but at high effort, this difference is eliminated or attenuated. This effect is mediated by changes in the perceived moral character of the actor. Taken together, the accumulated data suggest ways in which the field may move beyond ‘emotion vs. reason’ by highlighting the importance of features of the actor, features of the victims, and features of the beneficiaries.
Acknowledgments

The past six years have been a remarkable period in my life. I have pushed myself to new limits, experienced the highest of highs and the lowest of lows. Growth and change are not things that come easily to me and so I owe a debt of gratitude to those who have stood beside me and supported me during this period of my life.

Firstly, I would like to thank my supervisor Dr. Jason Plaks. Jason, thank you for giving me this incredible opportunity to be a part of your lab. Over the last six years you have given me the freedom and support to explore a topic I am passionate about. I have thoroughly enjoyed our conversations and wrestling with these deep psychological and philosophical issues. Under your tutelage I have grown as both a researcher and a person. I sincerely thank you for your support over these last six years.

In addition, during my university career I have had the privilege of being mentored by several researchers in the Department of Psychology. As an undergraduate Dr. Joan Grusec, Dr. Adam Anderson, and Dr. Hanah Chapman gave me the opportunity to work with them and get a taste of what psychological research is all about. These individuals stoked the fire of my curiosity and helped me to believe that I could make a contribution to the academic community. Secondly, Dr. Michael Inzlicht and Dr. Elizabeth Page-Gould both made a strong impact on me during graduate school. They pushed my thinking and provided keen insights that helped me see topics from a different perspective. These individuals have shaped me into the researcher I am today and I thank them for their encouragement, guidance, and support.

I would also like to thank the members of my dissertation committee, Dr. William Cunningham, Dr. Yoel Inbar, Dr. Cendri Hutcherson, Dr. Matthew Feinberg and Dr. David Pizarro. Thank you for being a part the dissertation process. I am grateful for your involvement and the time and effort you have put in reviewing my work.
I would like to thank my parents, Steve and Cindy Robinson, and my siblings, Daniel and Jennifer Robinson for their love, encouragement, and support over these last six years. No matter how difficult things got you were always in my corner. Words cannot adequately express how much that means to me. I love you all very much and am truly thankful to be part of such an amazing family.

To my amazing wife, Sarah Skyvington, I simply would not be here without you. You’ve been my rock, my coach, and a never-ending source of love, compassion, and support. No matter how dark the day you have always been there to bring me back into the light. I am eternally grateful the universe conspired to have us meet on my first day of Graduate School. I love you with all my heart and dedicate this dissertation to you. I look forward to the next stage of our adventure.
Table of Contents

Acknowledgments ........................................................................................................ iv
Table of Contents ........................................................................................................ vi
List of Tables .............................................................................................................. ix
List of Figures ............................................................................................................ x
List of Appendices ..................................................................................................... xi

Chapter 1 ..................................................................................................................... 1
  1 From Moral Philosophy to Moral Psychology ....................................................... 1
    1.1 Rise of the Dual-Process Model of Moral Cognition ..................................... 2
    1.2 Challenges to the Dual-Process Model of Moral Cognition ....................... 5
    1.3 Toward a More Comprehensive Model ....................................................... 9

Chapter 2 ..................................................................................................................... 12
  2 Insecure Attachment Motivates Consequentialist Moral Judgments ............... 12
    2.1 The Interpersonal Roots of Moral Judgment .............................................. 14
    2.2 Different Paths to Consequentialism ........................................................... 15
      2.2.1 Avoidant Attachment .......................................................................... 16
      2.2.2 Anxious Attachment ........................................................................... 17
    2.3 Pretesting ...................................................................................................... 18
      2.3.1 Method .................................................................................................. 19
      2.3.2 Results .................................................................................................. 21
    2.4 Study 1 ......................................................................................................... 24
      2.4.1 Method .................................................................................................. 24
      2.4.2 Results .................................................................................................. 26
    2.5 Study 2 ......................................................................................................... 28
      2.5.1 Method .................................................................................................. 28
      2.5.2 Results .................................................................................................. 28
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6.1</td>
<td>Method</td>
<td>71</td>
</tr>
<tr>
<td>4.6.2</td>
<td>Results</td>
<td>73</td>
</tr>
<tr>
<td>4.7</td>
<td>Study 8</td>
<td>77</td>
</tr>
<tr>
<td>4.7.1</td>
<td>Method</td>
<td>78</td>
</tr>
<tr>
<td>4.7.2</td>
<td>Results</td>
<td>80</td>
</tr>
<tr>
<td>4.8</td>
<td>Discussion</td>
<td>84</td>
</tr>
<tr>
<td>Chapter 5</td>
<td></td>
<td>91</td>
</tr>
<tr>
<td>5</td>
<td>Summary and Conclusions</td>
<td>91</td>
</tr>
<tr>
<td>5.1</td>
<td>Future Directions</td>
<td>93</td>
</tr>
<tr>
<td>5.2</td>
<td>Limitations</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figures</td>
<td></td>
<td>99</td>
</tr>
<tr>
<td>Tables</td>
<td></td>
<td>116</td>
</tr>
<tr>
<td>Endnotes</td>
<td></td>
<td>121</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>122</td>
</tr>
<tr>
<td>Appendices</td>
<td></td>
<td>136</td>
</tr>
</tbody>
</table>
List of Tables

Table 1 ........................................................................................................................................ 116
Table 2 ........................................................................................................................................ 117
Table 3 ........................................................................................................................................ 118
Table 4 ........................................................................................................................................ 119
Table 5 ........................................................................................................................................ 120
List of Figures

Figure 1 .......................................................................................................................... 99

Figure 2 .......................................................................................................................... 100

Figure 3 .......................................................................................................................... 101

Figure 4 .......................................................................................................................... 102

Figure 5 .......................................................................................................................... 103

Figure 6 .......................................................................................................................... 104

Figure 7 .......................................................................................................................... 105

Figure 8 .......................................................................................................................... 106

Figure 9 .......................................................................................................................... 107

Figure 10 ......................................................................................................................... 108

Figure 11 ......................................................................................................................... 109

Figure 12 ......................................................................................................................... 110

Figure 13 ......................................................................................................................... 111

Figure 14 ......................................................................................................................... 112

Figure 15 ......................................................................................................................... 113

Figure 16 ......................................................................................................................... 114

Figure 17 ......................................................................................................................... 115
List of Appendices

Appendix A .................................................................................................................. 136
Appendix B .................................................................................................................. 137
Appendix C .................................................................................................................. 138
Appendix D .................................................................................................................. 139
Appendix E .................................................................................................................. 140
Appendix F .................................................................................................................. 142
Appendix G .................................................................................................................. 143
Appendix H .................................................................................................................. 144
Appendix I .................................................................................................................. 145
Appendix J .................................................................................................................. 146
Chapter 1

From Moral Philosophy to Moral Psychology

Memorial Medical Center in New Orleans was battered by Hurricane Katrina. As the flood waters rose, the building’s electrical system failed, cutting power to life-saving equipment, the elevators, and the air conditioning system. At that point, it was clear that the patients needed to be evacuated from the building. However, due to the severity of the storm and the number of people in need of emergency assistance, there were not enough helicopters and boats available to get all of the patients to safety. This posed a serious dilemma for the doctors at the hospital. Which patients should be evacuated first (Adler & McEwen, 2016)?

Moral philosophers, scholars, and theologians have long debated how to successfully resolve this type of moral dilemma. Deontology is the view that the morally correct action is the one that upholds duties, rights, and obligations (Kant, 1785/1949). This perspective might argue that there is a duty to prioritize and dedicate the most resources to the patients who are in the most serious condition. This ensures that the sickest patients will get treatment, but provides no guarantee that, having received treatment, these patients will survive. Furthermore, because patients in the most severe condition also require more medical resources, fewer total patients will receive care.

In contrast, Consequentialism takes the view that the morally correct action is the one that leads to the greatest overall good (Bentham, 1790/2007; Mill, 1861/2007; Singer, 2011). From this perspective, resources should be dedicated to the patients who are most likely to survive. Therefore, patients in the most serious condition should be given the lowest priority. This ensures that the greatest number of patients survive, but also means that those patients in the gravest condition are all but certain to die. In the case of Memorial Medical Center, the medical staff enacted a more consequentialist protocol, giving patients in the most critical condition
lowest priority and focusing resources on the patients who were most likely to survive (Adler & McEwen, 2016).

The example of Memorial Medical Center should make clear that the moral position a person takes can have serious consequences for those directly and indirectly involved. While the debate over the moral superiority of deontology or consequentialism continues in philosophical circles, psychologists have begun to focus on a different question: What are the psychological processes that lead an individual to favor deontological or consequentialist beliefs?

1.1 Rise of the Dual-Process Model of Moral Cognition

The most influential attempt to characterize the psychology of deontology versus consequentialism is Greene and colleagues’ Dual-Process model of moral judgments (Greene, Nystrom, Andrew, Darley, & Cohen, 2004; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Greene, Morelli, Lowenberg, Nystrom, & Cohen, 2008; Greene, 2013; Greene, 2014).

Greene and colleagues (2001) were intrigued by an asymmetry in the way participants responded to two variations of the classic trolley problem (Foot, 1967). In one variant, a runaway trolley is headed for five people who will be killed if the trolley continues down its current path. The only way to save these five people is to hit a switch that will turn the trolley onto an alternate track where it will kill one individual instead of five. Faced with this dilemma, most participants indicated that it is appropriate to hit the switch thereby killing one individual and saving five others. However, in another variant of the trolley problem, instead of hitting a switch, the only way to save the five people on the track is to push a fat man off a bridge into the path of the trolley (Thomson, 1985). Most people say it is wrong to push the fat man into the path of the trolley. In both variants of the problem, one individual is killed and five are saved. What explains the difference in people’s responses?

According to the Dual-Process model, thinking about pushing a man to his death is more
emotionally vivid than thinking about hitting a switch. Therefore, when an individual is faced with a moral dilemma that involves directly harming an individual to help others, the thought of causing harm immediately and automatically elicits negative affect (Cushman, Gray, Gaffey, & Mendes, 2012; Greene et al., 2001; Haidt, 2001). If the negative affect is of significant magnitude, or if there is insufficient time (Suter & Hertwig, 2011), motivation, and/or resources (Paxton, Ungar, & Greene, 2012) to engage is further deliberation, the negative affect will dominate the decision-making process. This averseness to harming another individual prevents individuals from endorsing an action that will cause harm. This leads to more deontological moral judgment (Cushman et al., 2012; Greene et al., 2004, 2001, 2008; Paxton et al., 2012; Suter & Hertwig, 2011).

If, however, the dilemma involves indirectly harming an individual to help others (such as hitting a switch to redirect the trolley), the emotional response will be of minimal magnitude. Therefore, in the absence of strong negative affect attached to the required action, or if the individual has adequate time, resources, and/or motivation, a more thorough, cost-benefit analysis of the situation will be conducted. If the action is calculated to result in a net increase in well-being for all those concerned, the individual will make a more consequentialist judgment (Cushman et al., 2012; Greene et al., 2004, 2001, 2008; Paxton et al., 2012; Suter & Hertwig, 2011).

In short, the main tenet of the Dual-Process model is summarized by Greene’s Central Tension Principle (Greene, 2014): “characteristically deontological judgments are preferentially supported by automatic emotional responses, while characteristically consequentialist judgments are supported by conscious reasoning and allied processes of cognitive control” (pg. 699).

Since Greene and colleagues’ (2001) paper was published, a considerable body of research has produced results consistent with the Dual-Process model’s hypotheses. In several studies,
neural regions associated with emotion showed increased activation (relative to regions of the brain associated with cognitive processes) when participants were asked to think about sacrificing and individual for the good of a group by physically touching the victim (Greene et al., 2001; 2004). In a related vein, when emotional distance from victims was increased, participants made fewer deontological judgments (Petrinovich, O’Neill, & Jorgensen, 1993). Furthermore, individuals who had been diagnosed with damage to regions of the brain involved in emotional experience made fewer deontological judgments (Koenigs et al., 2007). In contrast, when emotionality was up-regulated either by induced physiological distress, (Starcke, Ludwig, & Brand, 2012) or by having participants vividly imagine the harm being committed (Amit & Greene, 2012; Bartels, 2008; Petrinovich & O’Neill, 1996), participants produced more deontological judgments.

A considerable body of research also supports the claim that consequentialist judgments are the result of deliberative processes. Greene and colleagues (2001) provided evidence that areas of the brain associated with more rational or deliberative processes showed increased activation when participants evaluated moral dilemmas in which the victim was indirectly harmed (i.e. by flipping a switch). Furthermore, Greene and colleagues (2004) provided evidence that ‘cognitive’ brain regions showed increased activation (relative to ‘emotional’ regions) when participants made consequentialist judgments. Participants who were induced to be more reflective (via the Cognitive Reflection Test) made more consequentialist moral judgments (Paxton et al., 2012). Furthermore, participants with greater working memory capacity were more likely to make the consequentialist decision (Moore, Clark, & Kane, 2008). In addition, limiting the cognitive resources available by putting participants under time pressure (Suter & Hertwig, 2011) led to fewer consequentialist judgments; putting participants under cognitive load interfered with reaction times for consequentialist judgments only (Greene, et al., 2008). In
summary, a substantial body of research has suggested that deontological judgments are underpinned by emotional psychological processes that act quickly and are relatively resource-independent. Consequentialist judgments, in contrast, are the result of deliberative, cognitive psychological systems that act slowly and are relatively resource-draining.

1.2 Challenges to the Dual-Process Model of Moral Cognition

Despite this body of research, there are several reasons to be skeptical of the Central Tension Principle’s “emotion vs. reason” dichotomy. Whereas the Dual-Process model characterizes deontological judgments as resulting from emotional processes that lack reflection and cognitive control, Kant (1785/1949), who is often cited as the prototypical deontologist, took pains to emphasize that his philosophy was based on sound logical inference and not emotionality (Kant, 1785/1949, p. 8). Moreover, psychological research has documented at least two paths to deontological judgment, one via emotionality and another through deliberation (Körner & Volk, 2014). For example, Körner and Volk (2014) found evidence for quick, intuitive deontological judgments but also reported that more deliberative deontological judgments resulted when participants were primed to take on a more abstract (vs. concrete) construal level.

On the other side of the coin, the Dual-Process model characterizes consequentialist judgments as deliberative/reflective processes that lack emotionality. As such, several studies have linked consequentialist judgments to negative traits such as psychopathy and Machiavellianism (Bartels & Pizarro, 2011; Gao & Tang, 2013; Koenigs, Kruepke, Zeier, & Newman, 2012). This has led to a portrait of the consequentialist decision maker as a cold and calculating individual. However, at the core of consequentialism is the motivation to address and alleviate the suffering of others. John Stuart Mill (1861/2007) lamented that his version of consequentialism (utilitarianism) was viewed as cold and heartless. Mill himself is admired for being ahead of his time in the high value he placed on freedom of expression, tolerance (Mill,
1859/1955) and equal rights for women (Mill, 1869/1984). In more modern times, Peter Singer has used consequentialist arguments to express a need to address global poverty (Singer, 2011) and the treatment of animals (Singer, 1975). This position requires one to empathize with the suffering of others and to be compassionate, desiring their suffering be reduced or eliminated. This is an inherently emotional experience.

In addition, several recent findings have documented ways in which emotionality does play a role in consequentialist decisions. For instance, consequentialist decisions may result from feelings of anger at an unequal distribution of well-being (Baron, 2011; Choe & Min, 2011), or feelings of empathy with the larger group (Robinson, Joel, & Plaks, 2015) that are driven by a need to belong (Lucas & Livingston, 2014; Robinson et al., 2015). In recent research, Francis and colleagues (2016) placed some participants in the classic trolley problem dilemma using virtual reality technology. Other participants read the same dilemma in text. Although participants experienced significantly higher arousal (heart-rate) in the virtual reality condition than in the text condition, this arousal did not predict the type of moral judgment participants made (consequentialist vs. deontological). In summary, whereas the Central Tension Principle states that deontological judgments are preferentially supported by emotional/intuitive systems and consequentialist judgments are preferentially supported by deliberative/cognitive control systems, mounting evidence indicates that there are multiple routes – both emotional and deliberative – to both types of moral judgment (Conway & Gawronski, 2013; Körner & Volk, 2014; Robinson et al., 2015).

In addition, although previous research has presented emotion and cognitive control as conflicting systems (Metcalfe & Mischel, 1999), recent research has suggested that emotion and cognition are best thought of as fully integrated, without clear demarcation either conceptually or neurophysiologically (Barrett, 2013; Lindquist & Barrett, 2012; Pessoa, 2008). As an extension
of this line of thinking, Inzlicht, Bartholow, and Hirsh (2015) have suggested that instead of considering cognitive control and emotion as antagonistic systems, cognitive control may be best understood as an emotional process. In their model, cognitive control is initiated when conflicting goals are detected. Engaging cognitive control is effortful (Kurzban, 2016) and is experienced as aversive, negative affect. This negative, affective experience makes goal conflicts salient, focusing attention to specific aspects of the situation, and importantly providing motivation to engage in goal-directed behaviour to resolve the conflict (Inzlicht et al., 2015). This perspective is difficult to reconcile with The Central Tension principle (Greene, 2014) and suggests that a simple link between emotion and deontology / cognitive control and consequentialism is inadequate.

Secondly, the Dual-Process model, like other ethical theories, proposes that humans have a universal moral grammar (Mikhail, 2007) which prohibits intentional harm (Gray, Young, & Waytz, 2012). Accordingly, the Dual-Process model argues that it is this aversion to harm that drives deontological judgments. But a baseline aversion to harming others seems unlikely to be the entire story. For instance, a doctor may intentionally perform a painful procedure on a patient, a boxer strives to render his or her opponent unconscious, parents may use corporal punishment to discipline their child, and a soldier may kill an enemy combatant. Fiske and Rai (2015) argued that although inflicting pain and suffering is aversive to the actor, this aversion does not necessarily prevent the actor from following through on the act. In fact, causing pain and suffering can be morally commendable or even obligatory (in cases such as war). In addition, Relationship Regulation Theory (Rai & Fiske, 2011) proposes that people are often morally motivated to commit harmful or violent actions to “create, conduct, protect, redress, terminate, or mourn social relationships” (Fiske & Rai, 2015, p. 2). According to this view, violent acts such as honor-based infanticide can only be understood within a broader set of
values and beliefs that govern interpersonal relationships within a given culture or society (Fiske & Rai, 2015; Graham et al., 2011; Haidt & Joseph, 2004; Rai & Fiske, 2011). Thus, while Fiske and Rai (2015) acknowledge that humans often experience an aversive emotional reaction to causing others harm, their theory highlights that this aversion can be moderated by contextual factors that allow an individual to follow through on committing harmful acts. Therefore, the most useful research approach may be to investigate which contextual factors allow this baseline aversion to harm to be overridden.

Finally, although moral dilemmas often contain a complex set of features, much of the research on the Dual-Process model has focused on manipulating features of the act. Most notable are the findings demonstrating that people are less willing to endorse actions that directly cause harm versus indirectly cause harm (Cushman et al., 2012; Greene et al., 2004, 2001; Greene et al., 2009). While the nature of the act itself is undoubtedly an important factor in peoples’ moral judgments, it is likely that other features of the situation are also relevant. For instance, the identity and mental states of the actor, victims, and beneficiaries have been often overlooked in this body of research (for exceptions see: Everett, Pizarro, & Crockett, 2016; Uhlmann, Pizarro, Tannenbaum, & Ditto, 2009). Below, I will describe studies in which we shifted participants’ deontological/consequentialist judgments by manipulating information about the actor’s wishes and motivations.

In summary, these criticisms provide reasons to question the Central Tension Principle and suggest that the Dual-Process model is in need of revision. I suggest that a more elaborate model is needed – one that takes into account both the nature of act itself and a range of additional features of the agent, the patient, and the beneficiaries. Figure 1, while not meant to be exhaustive, outlines some features of the situation, and their interrelationships, that should be
relevant to predicting moral judgments. Next, I will describe some of these features in greater detail.

1.3 Toward a More Comprehensive Model

Observers bring to the situation different abilities, motivations, and prior attitudes and beliefs that shape how different features of the situation are perceived. For example, individual differences in cognitive abilities predict deontological vs. consequentialist judgment; those who are more reflective (Paxton et al., 2012) and have greater working memory (Moore et al., 2008) are more likely to make consequentialist moral judgments. Other studies have focused on perceivers’ motivational tendencies; Moore, Stevens, and Conway (2011) found that participants who were more sensitive to rewards were more likely to make consequentialist judgments, while Gamez-Djokic and Molden (2016) found that those who were more sensitive to losses were more likely to make deontological judgments. In other work, Uhlmann and colleagues (2009) showed that participants flexibly applied deontological versus consequentialist principles to match their political orientation. For instance, although participants generally indicated that the race of the individuals described in the dilemma should have no bearing on moral judgments, liberals were less likely to endorse the consequentialist option if the individual who needed to be sacrificed was identified as Black (versus White).

While Figure 1 highlights a direct relationship between the observer’s beliefs, motivations and moral judgments, the model also posits several indirect effects through features of the situation. I suggest that individual differences between observers will predict differences in sensitivity to different features of the situation, in turn mediating or moderating the final judgment. Features of the act may include, for example, whether the action was direct or indirect (Greene et al., 2009) or whether it involved a taboo norm violation (Tetlock, Kristel, Elson, Green, & Lerner, 2000). Features of the patients, agents, and beneficiaries may include variables
such as the number of individuals involved (Moore et al., 2008), the intentions of the agent (Pizarro, Uhlmann, & Bloom, 2003; Plaks, McNichols & Fortune, 2009), the desires of the patient(s) (Robinson, Joel, & Plaks, 2015; Study 3), as well as identifying features of the individuals involved (Uhlmann et al., 2009).

This model is consistent with the subjective theory of utility proposed by Cohen & Ahn, (2016). According to this model, people choose the option (deontological or consequentialist) that holds the most personal value. The personal value of each response option varies based on the value assigned to each feature of the situation. Therefore, the value of each node of the model in Figure 1 is determined by the attitude, beliefs, and emotional appraisals toward node-specific features. In line with the simple attribute integration model (Clithero & Rangel, 2013; Fehr & Rangel, 2011; Hutcherson, Montaser-Kouhsari, Woodward, & Rangel, 2015), which posits that judgments are influenced by appraisals of multiple attributes in parallel and then integrated into an overall value that determines the judgment that is made, I suggest that the values of each node depicted in Figure 1 are integrated into a moral judgment. Therefore, moral judgments are determined by the subjective value of each feature of the situation, and the process that is engaged when integrating these valuations into an overall value.

The goal of the research presented here is to provide evidence for several of the links in Figure 1. In Chapter 2, I will provide evidence that a feature of the observer, namely a specific type of chronic emotionality (attachment anxiety) predicts consequentialist judgment. I will argue that this finding is inconsistent with the Central Tension Principle. Furthermore, I will demonstrate that different forms of attachment insecurity (anxious vs. avoidant) precipitate different ways of using information about the beneficiaries (i.e., their desires) when formulating a moral judgment. In addition, in Chapter 3 I will provide evidence that deontological and consequentialist decision makers invoke different, discrete emotions when arguing for the
correctness of their position: deontologists (more so than consequentialists) invoke *anger* whereas consequentialists (more so than deontologists) invoke *sadness*.

While much of the research examining the Dual-Process model has focused on actions alone, in Chapter 4 I will demonstrate that judgments result from the interaction of the act with specific features of the agent. I will describe studies demonstrating that the amount of effort exerted by the actor during the decision making process systematically influences observers’ moral judgments. I will provide evidence that observers pay special attention to the amount and type of effort the protagonist exerted. I will show that at least one type of effort (information gathering) conveys positive character information that causes observers elevate their normally low opinion of consequentialist actors.

Taken together, the data presented will provide support for a more elaborate model of moral judgment than the one outlined in the Central Tension Principle and will highlight some important psychological constructs that predict moral judgments.
Chapter 2

2 Insecure Attachment Motivates Consequentialist Moral Judgments

Contents of this chapter have been published in the Journal of Experimental Social Psychology:


Much of the work in the literature specifically focused on the Dual-Process model has largely been silent regarding the interpersonal or relational dimensions of moral judgment. Researchers however have increasingly argued for the need to place moral perceivers within their broader social context. For example, studies have demonstrated that individuals’ moral beliefs are heavily influenced by their surrounding culture (Graham et al., 2013; Rai & Fiske, 2011; Shweder, Mahapatra, & Miller, 1987). Furthermore, Rai & Fiske (2011) argued that moral judgments and actions are best thought of as motivated to maintain specific types of social relationships. Therefore, as noted in Figure 1, moral judgments should be influenced by the observers’ beliefs, attitudes, and normative expectations regarding interpersonal relationships. As such, individual differences in specific interpersonal motivations may predict different types of moral judgments.

Recently, research has found that one such interpersonal variable that that fits the above description is attachment style (Koleva, Selterman, Iyer, Ditto, & Graham, 2014). Koleva and colleagues (2014) reported that anxiously attached individuals show greater preoccupation with issues of harm, fairness, and purity, while avoidantly attached individuals show a lack of concern for harm and fairness violations. In addition, the authors found that higher attachment avoidance
predicted a greater tendency to make consequentialist judgments, an effect that was mediated by lower trait empathy. Of particular interest to the current research, Koleva et al. (2014) also reported (in a table, pg. 188) that attachment anxiety predicted greater consequentialist judgments. They did not, however, discuss this association any further.

The present research brings this link between anxious attachment and consequentialism to the forefront. Attachment style may be understood through a motivated cognition perspective (Gardner, Pickett, & Brewer, 2000; Higgins, King, & Mavin, 1982). According to this approach, individual differences in attachment style are associated with differential interpersonal motivational concerns. These differing motivational concerns, in turn, raise or lower sensitivity to different aspects of interpersonal situations. These differential sensitivities, in turn, help to foster corresponding patterns of decision-making. In the present studies, these differential sensitivities translated into different patterns of moral judgment.

I concluded, therefore, that by examining and comparing how both forms of insecure attachment influence moral judgment, one might elucidate 1) how individual differences in interpersonal experience influence moral judgment and 2) begin to isolate distinct sets of motivations that will lead to consequentialist moral judgments.

I suspected that attachment anxiety would predict consequentialist judgments through a different set of motivations than that of attachment avoidance. In particular, I hypothesized that anxious participants would select the consequentialist option via a motivation to maximize social approval. In contrast, I hypothesized that avoidant participants would select the consequentialist option via a motivation to avoid caring for others. I turn next to the rationale for these hypotheses.
2.1 The Interpersonal Roots of Moral Judgment

Whereas much of the literature focused on the Dual-Process model has treated the moral decision maker as an isolated entity, there is evidence from both classic and recent sources that individuals’ moral judgments are meaningfully shaped by their history of interpersonal relationships (Kogut & Kogut, 2013; Koleva et al., 2014; Turiel, 1983). Why might this be? Theorists have long noted that moral values are not only beliefs about how we ought to act toward others but also *expectations about how others will act toward us* (Kohlberg, 1969; Turiel, 1983). Given that a fundamental source of interpersonal behavioral expectations is each individual’s history of secure or insecure interpersonal relationships (Bowlby, 1969), there may be a connection between attachment style and moral reasoning.

According to attachment theory, early attachment-related experiences with caregivers teach children important lessons about how to relate to close others (Bowlby, 1969; Zayas, Mischel, Shoda, & Aber, 2011). Those lessons are, in turn, applied to adult relationships later in life (Mikulincer & Shaver, 2007). Caregivers who are consistently available and attentive teach the child that close others can be relied upon in times of need. This results in a secure attachment style in adulthood, characterized by a tendency to trust and rely on others (Hazan & Shaver, 1987). Caregivers who provide care inconsistently or insensitively teach the child that close others are not reliably available for care. These uncertain models of self and other translate into an anxious attachment style in adulthood, characterized by excessive dependence on close others. Finally, caregivers who are absent or punishing of the child’s demands for reassurance teach the child that relying on others is futile at best, and dangerous at worst. These negative models of self and other translate to an avoidant attachment style in adulthood, characterized by a discomfort with closeness with others.
Considerable evidence suggests that adult attachment represents a fundamental lens that helps to shape people’s construal of the actions of others (Mikulincer & Shaver, 2007). As such, attachment style appears to play an important role in shaping people’s moral perspectives. Attachment style has been found to predict a wide range of morally-relevant behavior, including lying to others (Ennis, Vrij, & Chance, 2008), volunteering for non-profit organizations (Gillath et al., 2005), and selling one’s material possessions (Kogut & Kogut, 2011). It follows that attachment style may also help to explain people’s differing perspectives on consequentialist moral dilemmas.

2.2 Different Paths to Consequentialism

When presented with a consequentialist dilemma, the decision maker is generally asked to choose between killing versus not killing one person in order to save a larger group of people. I propose that two distinct motivations could lead an individual to reach the consequentialist decision of killing the person to save the group. One such path is through lack of concern for the individual being sacrificed. If the decision maker does not feel particularly moved by the plight of the would-be sacrificed individual, then he or she may be more willing to sacrifice that individual in exchange for the greater good. However, a second path to the consequentialist conclusion is through a heightened concern for the group. Decision makers could choose to sacrifice an individual not because they lack empathy for that individual, but because they are especially motivated by the wellbeing of the group, which outweighs their concern for the single individual. I discuss next how attachment style may relate to each of these motivational pathways.
2.2.1 Avoidant Attachment

Koleva et al. (2014) found that avoidant attachment was associated with more consequentialist judgments and that this effect was mediated by lower levels of trait empathic concern. One purpose of the present set of studies was to unpack this association by asking *toward whom* do avoidantly attached individuals lack empathy?

Avoidantly attached people are deeply uncomfortable with having others rely on them: being asked to care for another person threatens avoidantly attached individuals’ strong need for independence and autonomy (Shaver, Mikulincer, & Shemesh-Iron, 2010). As a result, avoidantly attached individuals are motivated to avoid providing comfort and support to their romantic partners, particularly when their partners are in a state of distress (Feeney & Collins, 2001). I suggest that this tendency applies beyond romantic contexts; encountering *any* individual in distress is a threatening situation for avoidant individuals.

The ‘victim’ in a consequentialist dilemma represents a particularly vivid case of an individual in distress. Thus, I predict that, due to their motivation to avoid caregiving, people who are high in avoidance will display less empathy for the victim than will people who are low in avoidance. Similar effects have been documented for participants who were high in Machiavellianism and psychopathy (Bartels & Pizarro, 2011; Koenigs et al., 2012). However, because groups are more abstract targets than individuals (Lickel et al., 2000) and groups generally elicit less empathy than do individuals (Cameron & Payne, 2011; Slovic, 2007), the difference between high and low avoidant participants will be less evident for group targets than for individual targets. Taken together, I predict that because high avoidants display less empathy than low avoidants for the victim, but similar levels of empathy for the group, high avoidants will show a greater preference than low avoidants for the option that favors the group over the victim.
2.2.2 Anxious Attachment

Koleva et al. (2014) further found a positive association between attachment anxiety and consequentialism. A second purpose of the present research was to unpack this association to understand why anxiously attached individuals would be motivated to make consequentialist judgments. Unlike avoidantly attached individuals, anxiously attached individuals are not threatened by the prospect of giving care to others (Shaver et al., 2010). Therefore, it seems unlikely that anxiously attached individuals prefer consequentialist judgments because they lack empathy for the person being sacrificed. Rather, I hypothesized that anxiously attached individuals choose the consequentialist option because (relative to both avoidant people and secure people) they are motivated to please others and therefore will experience higher empathy for the group.

Anxiously attached individuals crave approval, connection, and reassurance from others, but are uncertain that they will receive it (Feeney & Noller, 1990; Rom & Mikulincer, 2003). This uncertainty fosters a strong need to belong and motivates continual efforts to gain the approval of others, including a greater willingness to comply with others’ requests (Impett & Peplau, 2002). In a group context, the best way to gain widespread acceptance is to conform to the desires of the group as a whole, rather than any specific individual. For example, in the paradigmatic ‘trolley problem’, individuals are asked whether it is permissible to kill one individual to save five. Killing one person to save five (the consequentialist option) dispenses the good outcome (survival) to more people, thereby potentially creating more opportunities for gratitude and social approval. Therefore, I propose that a motivation for the approval of others and a strong need to belong leads anxiously attached individuals to be more sensitive to the needs of the group, leading them to prefer the consequentialist option.
To summarize, numerous studies indicate that anxious and avoidant attachment are associated with different interpersonal motivations (i.e. connection and distancing, respectively). As proposed in Figure 1, I suggest that these different motivational concerns precipitate different levels of sensitivity (Gardner et al., 2000; Higgins et al., 1982; Uhlmann et al., 2009) to specific aspects of the dilemma situation. Whereas high avoidant individuals’ discomfort with caregiving leads them to focus less (than low avoidant individuals) on the sacrificed individual, high anxiously attached individuals’ need for belongingness leads them to focus more (than low anxiously individuals) on the group. In sum, I hypothesized that both types of attachment insecurity would promote consequentialist moral judgments, but for different reasons.

2.3 Pretesting

First, because the zero-order correlation between attachment anxiety and consequentialism reported by Koleva et al. (2014) was small \((r = .09, p < .05, n = 7,533)\), I deemed it necessary to test whether this association would replicate. This is because an alternative hypothesis seemed plausible: anxiously attached people’s high need to belong may lead them to adhere especially fervently to societal rules, in the hopes of being identified as an accepted and valued member of the group (Hechter & Opp, 2001; Posner, 2000). Therefore, the first priority was to test whether anxiously attached individuals’ strong need to belong would lead them to make more consequentialist judgments or more deontological judgments.

The second goal of pretesting was to account for the potential confound of trait neuroticism and trait empathic concern. Neuroticism refers to a general proneness to negative affect. As such, neurotic behavior overlaps with anxious behavior. It may be that neuroticism explains the relationship between anxious attachment and reactions toward a wrongdoer. Previous results suggest, however, that whereas neuroticism is a good predictor of emotional responses to negative events in general, anxious attachment is a better predictor of emotional
responses to negative *interpersonal* events in particular (Joel, MacDonald, & Plaks, 2012). Given the interpersonal nature of consequentialist dilemmas, I predicted that the association between attachment anxiety and consequentialist judgment would remain significant even when controlling for neuroticism.

In addition, attachment insecurity, particularly avoidance, is associated with less empathy toward others (Mikulincer et al., 2001). Thus, it is possible that any association between attachment insecurity and moral judgment is merely a proxy for low levels of trait empathy, and this low empathy could be the driving force behind the willingness to sacrifice an individual (Koleva et al., 2014). I expected, however, that attachment insecurity would uniquely predict consequentialist judgment over and above individual differences in empathic concern.

### 2.3.1 Method

**Participants**

I recruited 1205 residents (464 male, 5 provided an alternate gender identification) of the United States through Amazon Mechanical Turk. The average age of the participants was 32.09 (Range=18–74).

**Materials and Procedure**

As part of a larger survey, participants completed a set of questionnaires (Attachment Style Questionnaire, Big Five Aspects Scale, Interpersonal Reactivity Index, and the Consequentialist Scale) and evaluated six consequentialist dilemmas. The order of the questionnaires and moral dilemmas was randomized to control for any effects of item presentation.

**Moral Dilemmas.** Most consequentialist moral dilemmas used in previous morality research involve the extreme act of killing, which the vast majority of participants rate as severely wrong. Therefore, in order to reduce ceiling effects, I selected vignettes with high
disagreement over whether the killing was justified. Of the total number of vignettes reported by Greene, et al., (2008), I identified six in which participants made the consequentialist judgment (i.e. it is appropriate to kill one to save many) an average of 57% of the time (Appendix A).

Participants evaluated each of the six dilemmas. After reading each vignette, participants were asked, “Based on what you just read, how wrong would it be for you [to act in a consequentialist fashion, using the specifics of the scenario they had just read]?” Participants were asked to indicate their responses using a 7-point Likert scale (where 1 = not wrong at all and 7 = completely wrong). Lower ratings indicate more consequentialist moral judgments while higher ratings indicate a more deontological judgment. Wrongness ratings across the six dilemmas were highly reliable, $\alpha = .80$. Therefore, wrongness ratings across the six dilemmas were aggregated into a single variable.

**Consequentialist Scale.** Participants’ responses to consequentialist dilemmas do not directly assess their endorsement of more generalized deontological or consequentialist principles. For instance, people may make a deontological judgment not because they endorse the deontological position but because they oppose the consequentialist option (Conway & Gawronski, 2013). Therefore, I included an additional measure of general deontological and consequentialist tendencies that was independent of specific dilemmas. Participants completed the Consequentialist Scale (Robinson et al., 2015). This measure contains 10 items, five that assess endorsement of consequentialist beliefs (e.g. “The only moral principle that needs to be followed is that one must maximize happiness”) and five that assess deontological beliefs (e.g. “Some rules should never be broken”). Participants were asked to read each statement and indicate, using a 5-point Likert scale (1 = Completely Disagree, 5 = Completely Agree), how much they agreed with each statement. The deontological beliefs sub-scale showed good internal reliability, $\alpha = .74$. The consequentialist beliefs sub-scale also demonstrated good internal
reliability, \( \alpha = .83 \). For a full description of the validation of this measure, including an EFA and a CFA see Robinson, Joel & Plaks, (2015).

**Attachment Style Questionnaire (Feeney, Noller, & Hanrahan, 1994).** Attachment anxiety was measured with 13 items (e.g., “I find that others are reluctant to get as close as I would like”, \( \alpha = .89 \)), and avoidance was measured with 16 items (e.g., “I prefer to depend on myself rather than other people”, \( \alpha = .85 \)).

**Trait Neuroticism and Empathic Concern.** In addition, I measured the potential confound of trait neuroticism and empathic concern. Trait neuroticism was assessed by combining the Volatility and Withdrawal sub-scales of the Big Five Aspect Scale (BFAS: DeYoung, Quilty, & Peterson, 2007), \( \alpha = .91 \) (e.g. “I get upset easily”, “I am filled with doubts about things”). Trait empathy was assessed with the Interpersonal Reactivity Index (Davis, 1983), \( \alpha = .85 \) (e.g. “I am often quite touched by things that I see happen”).

### 2.3.2 Results

**Wrongness Ratings.** A correlation matrix (Table 1) is provided for the variables of interest. Both anxious attachment, \( r(1203) = -.16, p < .001 \), and avoidant attachment, \( r(1203) = -.11, p < .001 \), were negatively correlated with wrongness ratings, indicating that both forms of attachment insecurity predicted rating the consequentialist course of action as less wrong.

**Attachment Insecurity versus Neuroticism.** As depicted in Table 1, both anxious and avoidant attachment were associated with neuroticism. I conducted a hierarchical regression analysis to test whether neuroticism would explain the association between consequentialism and anxious attachment. In Step 1, wrongness ratings were regressed on neuroticism and revealed a significant relationship, \( R^2 = .07, F(1, 1197) = 6.07, p < .02 \). In Step 2, anxious and avoidant attachment were added to the model. The model that included anxious and avoidant attachment accounted for significantly more variance than the model that only included neuroticism,
\[ \Delta R^2 = .02, F(2, 1195) = 14.04, p < .001. \] In addition, the second model revealed a significant effect for attachment anxiety, \( b = -.27, SE = .06, t(1195) = -4.43, p < .001, d = .26, \) but there was no significant effect of neuroticism, \( b = .13, SE = .08, t(1195) = 1.71, p = .09, d = .10, \) or attachment avoidance, \( b = -.09, SE = .06, t(1195) = -1.47, p = .17, d = .08. \)

Given that anxious and avoidant attachment were significantly correlated, \( r(1203) = .47, p < .001, \) avoidant attachment may not have significantly contributed to the prediction of wrongness ratings in the full model due to overlapping variance. To address this possibility, I re-conducted the analyses separately for anxious attachment, then avoidant attachment. A hierarchical regression analysis with neuroticism added first and attachment anxiety added second showed that while attachment anxiety significantly predicted wrongness ratings, \( b = -.29, SE = .06, t(1196) = -5.17, p < .001, d = .30, \) the unique effect of neuroticism was not significant, \( b = .12, SE = .08, t(1196) = 1.6, p = .12, d = .09. \) A second analysis that substituted attachment avoidance for attachment anxiety showed that while attachment avoidance significantly predicted wrongness ratings, \( b = -.17, SE = .06, t(1196) = -2.9, p < .01, d = .17, \) neuroticism did not, \( b = -.07, SE = .06, t(1196) = -1.18, p = .24, d = .07. \) Thus, when assessed separately, both anxious attachment and avoidant attachment continued to predict wrongness ratings for the consequentialist action over and above neuroticism.

**Attachment Insecurity versus Empathic Concern.** To examine the effect of empathic concern on the relationships between both anxious and avoidant attachment and consequentialism, I performed a hierarchical regression analysis. In Step 1, wrongness ratings were regressed on empathic concern. In Step 2, anxious and avoidant attachment were added to the model. The model that included anxious and avoidant attachment accounted for significantly more variance than the model that included only empathic concern, \( \Delta R^2 = .02, \Delta F (2, 1196) = 15.92, p < .001. \) In addition the second model revealed significant main effects for
attachment anxiety, $b = -.26$, $SE = .05$, $t(1196) = -5.62$, $p < .001$, $d = .32$, attachment avoidance, $b = .14$, $SE = .06$, $t(1196) = 2.31$, $p = .02$, $d = .13$, and empathic concern, $b = .53$, $SE = .05$, $t(1196) = 10.65$, $p < .001$, $d = .62$. These results demonstrate that the links between both attachment anxiety and attachment avoidance and consequentialist moral judgment are not reducible to empathic concern.

**Relationship of Attachment Style to Consequentialist Scale.** Recall that the Consequentialist scale measures endorsement of statements supporting a generalized deontological or consequentialist position (independent of any specific scenario). I found that anxious attachment was positively correlated with the endorsement of generalized consequentialist statements, $r(1203) = .21$, $p < .001$, but was not correlated with the endorsement of generalized deontological statements, $r(1203) = .01$, $p = .83$. Avoidant attachment was positively correlated with endorsement of consequentialist beliefs, $r(1203) = .16$, $p < .001$, and negatively correlated with endorsement of deontological beliefs, $r(1203) = -.14$, $p < .001$. This highlights an interesting asymmetry between anxious and avoidant attachment. While both anxious and avoidant attachment were associated with greater endorsement of consequentialist beliefs, only avoidant attachment was negatively associated with deontological beliefs. This relationship suggests that, compared to anxious individuals, avoidant individuals feel less bound to uphold moral principles. In summary, the pretest results demonstrated that both anxious and avoidant attachment predict (a) rating the consequentialist course of action as less wrong and (b) the endorsement of consequentialist concepts more generally. These associations (which were small in magnitude) could not be explained by differences in trait neuroticism or empathic concern.
2.4 Study 1

In Study 1 I turned to the main purpose: to identify the mechanisms driving the association between consequentialist judgments and anxious and avoidant attachment. As noted, I predicted that anxiously attached individuals would be more likely to endorse the consequentialist option, motivated by their strong need to belong, which leads to a focus on the welfare of the larger group. In contrast, I expected that avoidant individuals would be more likely to endorse the consequentialist option, motivated by their discomfort in caring for others, which would lead to less empathy for the individual being sacrificed.

2.4.1 Method

Participants

I recruited 421 residents (159 male) of the United States through Amazon’s Mechanical Turk survey service. The average age of participants was 30.29 (Range = 18 to 74). The sample size was selected based on the criteria of 20 participants per free parameter outlined by Tanaka (1987). The unconstrained model tested below consisted of 20 free parameters and therefore this sample provided 21 participants per free parameter.

Materials and Procedure

As part of a larger survey, participants completed the Attachment Style Questionnaire, the Need to Belong scale, and the Caregiving System scale (described in detail below). Participants were also asked to evaluate the six moral dilemmas. After the participants had evaluated the dilemmas, they were asked to complete the individual versus group focus scale (see below) to help provide insight into what motivated their moral judgments. The individual differences questionnaires and the moral dilemma questions were counterbalanced.
Dilemmas. Participants evaluated six dilemmas as in Study 1 (Appendix B). Three of the dilemmas were used in the pilot study (Vitamins, Sophie’s Choice, and Crying Baby) and three I used for the first time (Nuclear Reactor, Vaccine, and Nobel Prize) (Greene et al., 2008; Moore, et al., 2008). Wrongness ratings across the six dilemmas were reliable, \( \alpha = .76 \). Therefore, I aggregated the ratings into a single variable.

Attachment Style Questionnaire (Feeney, et al., 1994). Attachment anxiety was measured with 13 items (e.g., “I find that others are reluctant to get as close as I would like”, \( \alpha = .87 \)), and avoidance is measured with 16 items (e.g., “I prefer to depend on myself rather than other people”, \( \alpha = .85 \)).

Need to Belong (Leary, Kelly, Cotterell, & Schreindorfer, 2005). Ten items measured individuals’ self-reported need to belong (e.g., “I want other people to accept me”, \( \alpha = .84 \)), using a five-point scale, 1 = strongly disagree, 5 = strongly agree.

Discomfort with Caregiving (Shaver, et al., 2010). Ten items from the Caregiving System Scale measured discomfort with caregiving (e.g., “I feel uncomfortable when I’m required to help others”, \( \alpha = .91 \)), using a seven-point scale, 1 = strongly disagree, 7 = strongly agree.

Individual vs. Group Focus Scale. In typical consequentialist dilemmas, one individual must be sacrificed for the good of the group. In the present study, I devised four questions to assess participants’ subjective emphasis on the sacrificed individual’s outcomes or the group’s outcomes. To assess focus on the victim, participants rated how much their judgments were affected by 1) “The welfare of the person being sacrificed” and 2) “How the person being sacrificed would feel” (1 = Didn’t affect my judgments at all, 7 = Affected my judgments strongly), \( \alpha = .83 \). To assess sensitivity to the group’s welfare, participants were asked to rate the degree to which they considered 1) “The welfare of all the people involved as a whole” and
2) “What I thought would be best for the group as a whole”, $\alpha = .88$. Participants completed these questions once they had evaluated all six dilemmas.

### 2.4.2 Results

Recall that higher wrongness ratings indicated greater condemnation for the consequentialist course of action. In the present data, wrongness ratings were negatively correlated with both anxious attachment, $r(419) = -.14$, $p = .003$, and avoidant attachment, $r(419) = -.19$, $p < .001$. Thus, as in the pretest, both forms of attachment insecurity predicted rating the consequentialist option less wrong. Please see Table 2 for a complete summary of the correlations between the variables of interest.

I used path analysis to test for mediators of the respective links between attachment insecurity and consequentialism. The final model is depicted in Figure 2. This model had good fit, RMSEA = 0.02, 90% CI [0, 0.19]; CFI = .99, and all paths in the model were significant. Consistent with past research, anxiously attached participants reported a higher need to belong, $\beta = .77$, $Z = 20.46$, $p < .001$. Higher need to belong predicted higher focus on the group, $\beta = .12$, $Z = 2.42$, $p = .02$. Greater focus on the group was associated with lower wrongness ratings for the consequentialist option, $\beta = -.41$, $Z = -10.41$, $p < .001$. Although the correlational nature of these data prevent firm causal inferences, this pattern suggests that anxiously attached individuals are more accepting of the decision to sacrifice an individual to save a group because they were motivated by a strong need to belong than in turn led to a greater focus on the welfare of the group.

A different story emerged for avoidantly attached individuals. Replicating past research (Shaver et al., 2010), avoidantly attached individuals expressed greater discomfort with caring for others, $\beta = .36$, $Z = 7.86$, $p < .001$. This discomfort with caregiving was associated with lower empathy for the individual who was sacrificed, $\beta = -.34$, $Z = -7.35$, $p < .001$. Empathy for the
individual sacrificed, in turn, predicted wrongness ratings, $\beta = .42$, $Z = 10.59$, $p < .001$. Again, although the correlational nature of these data does not permit firm causal inferences, the following interpretation is plausible: avoidantly attached individuals were more accepting of the decision to sacrifice an individual to save a group because they empathized less with the victim. This tendency was predicted by their general discomfort with caring for others or put differently a motivation to avoid caring for others.

I also created an unconstrained model in which I included paths between anxiety and discomfort with caregiving, anxiety and victim empathy, avoidance and group empathy, and a direct path between avoidance and wrongness ratings (see Figure 3). This model would suggest that anxiously and avoidantly attached individuals reacted similarly to the dilemmas. As depicted in the figure, these added paths were not significant, suggesting that anxiously and avoidantly attached individuals reached consequentialist judgments for different reasons. Although the unconstrained model fit the data well, RMSEA = 0.02, 90% CI [0.0, 0.06]; CFI = .996, a Likelihood Ratio test of the two models suggested that the fit of the unconstrained model was not superior to that of the constrained model, $\chi^2(4) = 5.08$, $p = 0.28$. Thus, the constrained model (with the additional, non-significant paths removed) is preferred for its parsimony.

To summarize, Study 1 provided support for the hypothesis that anxiously attached and avoidantly attached individuals are less likely to condemn the consequentialist course of action but do so for different reasons. Although both favor the group over the sacrificed individual, for anxious people this tendency was associated with a stronger need to belong and greater focus on the welfare of the group, whereas for avoidant people this tendency was associated with discomfort with caring for others and lower empathy for the individual to be sacrificed.
2.5 Study 2

Because the multiple paths linking attachment insecurity and consequentialist judgments have not been demonstrated before, I considered it important to replicate the effects with a new sample (Schimmack, 2012; Simmons, Nelson, & Simonsohn, 2011).

2.5.1 Method

Participants

I recruited 488 residents (181 male) of the United States through Mechanical Turk. The average age of participants was 29.99 (range = 18 to 70). Participants reported an average of 15.02 ($SD = 2.696$) years of formal education (beginning at grade one). The models tested in Study 2 were identical to those tested in Study 1. Therefore, the sample size met Tanaka’s (1987) required sample size criteria of 20 participants per free parameter.

Materials and Procedure

The materials and procedure were identical to Study 1.

2.5.2 Results

Replicating the previous findings, wrongness ratings were negatively correlated with both anxious attachment, $r(417) = -.18, p < .001$, and avoidant attachment, $r(417) = -.15, p = .003$, Both forms of attachment insecurity predicted rating the consequentialist course of action as less wrong. Please see Table 3 for a complete summary of the correlations between the variables of interest.

Again, I used path analysis to test for the hypothesized pathways between attachment insecurity and consequentialist judgment. The final model is presented in Figure 4. This model was highly similar to that of Study 1 (Figure 2). The model had good fit, RMSEA = 0.05, 90% CI [0, 0.22]; CFI = .98, and all paths presented in the model were significant. As in Study 1,
greater anxious attachment was associated with a greater need to belong, $\beta = .79, Z = 21.87, p < .001$. Need to belong predicted a greater focus on the group’s welfare (as opposed to that of the sacrificed individual), $\beta = .13, Z = 2.72, p = .007$. This greater emphasis on the group’s welfare, was associated with the rating the consequentialist course of action as less wrong, $\beta = -.36, Z = -9.67, p < .001$.

In contrast, increased avoidant attachment predicted greater discomfort with caring for others, $\beta = .41, Z = 9.20, p < .001$. Discomfort with caring for others was associated with lower empathy for the individual being sacrificed, $\beta = -.31, Z = -6.53, p < .001$. Lower empathy for the individual being sacrificed, in turn, predicted lower wrongness ratings for the consequentialist course of action, $\beta = .53, Z = 14.28, p < .001$. Thus, as in Study 1, anxiously and avoidantly attached individuals both favored the consequentialist option, but for distinct reasons.

As in Study 1, I also compared the model in Study 2 to a less constrained model (see Figure 5) which included paths between anxiety and discomfort with caregiving, anxiety and victim empathy, avoidance and group empathy, and a direct path between avoidance and wrongness ratings. Like Study 1 these additional paths were not significant. While the unconstrained model fit the data adequately, RMSEA = 0.06, 90% CI [0.03, 0.09]; CFI = .98, a Likelihood Ratio test of the two models suggested that the models fit the data equally well, $\chi^2(4) = 3.98, p = 0.41$. Thus, as in Study 1, the constrained model is preferred for its parsimony.

To summarize, Study 2 replicated Study 1: both anxious and avoidant attachment predicted consequentialist moral judgment, but via different associations. Anxiously attached individuals reached the consequentialist option by being more focused on the group’s welfare, whereas avoidant individuals reached their judgment via reduced empathy toward the victim.
2.6 Study 3

The evidence so far suggests that anxiously attached individuals, due to their strong need to belong, make consequentialist moral decisions not because they care less about the victim’s welfare, but because they care more about the group’s welfare. By aiding the group (at the expense of one individual), anxiously attached individuals maximize opportunities for approval, gratitude, and acceptance, thereby increasing the likelihood of meeting their belongingness needs. What would happen, however, if anxiously attached people were informed that the group wanted them to make the deontological decision and choose the sacrificed individual over themselves? Would they continue to follow the wishes of the group?

In Study 3, I manipulated the desires of the group. I hypothesized that if gaining social approval is truly important to anxiously attached people, then when they are informed that the group prefers the consequentialist option, they will endorse it especially strongly, but when the group prefers the deontological option, they will endorse the consequentialist option less strongly. If anxiously attached people’s judgments shifted according to the group’s desires, this would suggest that the motivation to fulfill the group’s wishes is a significant contributor to their moral judgment. Study 3’s approach of manipulating a proposed mediator follows Spencer, Zanna, & Fong, (2005) claim that such an approach can helpfully supplement traditional meditational analyses.

2.6.1 Method

Participants

G*Power 3.1 (Linear multiple regression: Fixed model $R^2$ increase; Faul, Erdfelder, Lang, & Buchner, 2007) was used to conduct a power analysis. I assumed the interaction would have a small to medium effect size. Therefore, the total sample required to achieve 80% power
was 187 participants. Participants were American residents who were recruited through Mechanical Turk. The final sample consisted of 218 individuals (109 male, 108 female, and one participant did not indicate their gender). The average age of participants was 36.68 years (range = 19-72). Fifty-seven participants began the survey but did not complete the critical measures and thus could not be included in the analyses. Furthermore, because I have observed an increasing number of rote participants (e.g., those who marked the same response for all questionnaire items), I included three questions designed to identify uninterested participants.

When the survey had been completed, participants were asked to rate, using a 5-point Likert Scale (1 = Strongly Disagree, 5 = Strongly Agree), how strongly they agreed with three statements (1. “I was completely distracted while completing this task” 2. “I answered each question honestly and to the best of my ability” and 3. “I did not take this task seriously at all”). These three items (item #2 reversed scored) showed reasonable reliability, $\alpha = .67$, and were aggregated to from an attention check variable. I decided a priori that participants who scored 2 or higher on this variable failed the attention check. Based on this criterion, a total of 37 participants failed the attention check and were removed prior to conducting the analyses.

**Materials and Procedure**

Participants completed demographics information and the Adult Attachment Scale. Participants then worked on a filler task (word unscramble – see below) before finally completing the experimental manipulation.

**Attachment Style Questionnaire (Feeney, et al.,1994).** The same scale used in the previous studies was used to assess attachment style. The items measuring anxious attachment showed good internal reliability, $\alpha = .91$. The items measuring avoidant attachment also showed good internal reliability, $\alpha = .87$. 
Filler Task. Participants then completed a filler task between the questionnaires and the moral dilemma. The purpose of this task was to clear working memory, thereby reducing potential contamination between the Adult Attachment Scale and participants’ moral judgments. On this task, participants unscrambled 10 incoherent letter strings into actual words. Participants were given five minutes to complete this task. Whether or not the participant had completed all ten word puzzles, the experiment continued once the five minutes had elapsed. Next, participants were randomly assigned to one of three experimental conditions in which the content of the moral dilemma was altered.

Experimental Manipulation. Recall that the purpose of this study was to examine whether knowledge of the characters’ wishes would influence participants’ moral judgments. I therefore created two versions of the “Vitamins” dilemma (Greene et al., 2008). In the “consequentialist consensus” condition, participants read that the group who could be saved wanted the actor to force another individual to make a sacrifice involving extreme bodily harm. (“You discuss the situation with the six vitamin-deficient family members. The family members all agree that removing the man’s kidney is the right thing to do. They tell you that they would feel very grateful if you were to commit this act in order to save their lives.”) In the “deontological consensus” condition, participants read that the group who could be saved did not want the actor to force another individual to sacrifice his kidney. (“You discuss the situation with the six vitamin-deficient family members. The family members all agree that removing the man’s kidney is the wrong thing to do. They tell you that they would feel very upset if you were to commit this act in order to save their lives.”) The control condition included no information about characters’ desires (See Appendix C for the full text of the dilemmas).

After reading the dilemma, participants were asked to respond to two questions: (1) “How wrong would it be to remove the man’s kidney resulting in the lives of the vitamin
deficient family being saved?” (consequentialist choice) and (2) “How wrong would it be NOT to remove the man’s kidney resulting in the deaths of the vitamin deficient family?” (deontological choice). The order of these questions was randomized between participants to minimize any presentation effects. Participants indicated their responses on 6-point scales (1=Not wrong at all, 6=Extremely Wrong). Responses to these two questions were highly negatively correlated, \( r = -.66 \). Thus, I calculated a single aggregate term (with Question #1 reverse-scored), such that higher scores indicated greater endorsement of the consequentialist course of action.

2.6.2 Results

Overall, the consensus manipulation did not influence participants’ judgments (\( R^2 < .01, F(2, 215) = .41, p = .66, M_{Deontological} = 2.57, SD = 1.32; M_{Consequentialist} = 2.75, SD = 1.60; M_{Control} = 2.75, SD = 1.28 \)).

How, if at all, did participants’ responses to the consensus manipulation vary according to their attachment style? To conduct a regression analysis, I created dummy variables for the different experimental conditions. The control group was coded as the reference group. Next, attachment anxiety and attachment avoidance scores were mean centered and all interaction terms were created (West, Aiken, & Krull, 1996). In the first step of a hierarchical regression analysis, I regressed aggregate endorsement of the consequentialist course of action on the three main effects (consensus condition, attachment anxiety, and attachment avoidance). This model predicted wrongness ratings, \( R^2 = .05, F(4, 213) = 2.49, p < .05 \). In the second step, I added the two two-way interactions (consensus condition * attachment anxiety and consensus condition * attachment avoidance). More variance in endorsement of the consequentialist course of action was accounted for when the interaction terms were added to the model, \( \Delta R^2 = 0.05, F(4, 209) = 3.46, p = .03 \). To test whether the two-way interaction between experimental condition and attachment anxiety was significant, I removed the consensus condition * attachment anxiety
terms from the model calculated in step 2 and observed $\Delta R^2$ value. This revealed a significant two-way interaction between condition and attachment anxiety, $\Delta R^2 = .04$, $F(2, 209) = 4.36$, $p = .01$. Using the same method, I also tested whether the two-way interaction between experimental condition and attachment avoidance was significant. The results revealed a significant interaction between experimental condition and attachment avoidance, $\Delta R^2 = 0.03$, $F(2, 209) = 3.22$, $p = .04$. I also tested the attachment anxiety * attachment avoidance interaction as well as the three-way interaction and neither were significant predictors of wrongness ratings. Next I examined to the simple effects for both two-way interactions.

**Anxious Attachment**

The simple effects were calculated using the method suggested by West et al., (1996). Because attachment anxiety and attachment avoidance were correlated, $r(216) = .49$, I included attachment avoidance as a covariate in the model. Furthermore, Yzerbyt, Muller, & Judd, (2004) suggested that when including a covariate in a model with a manipulated variable, the interaction term between the manipulated variable and the covariate should also be included in order to prevent a biased estimate. With this suggestion in mind, I included the interaction term between the consensus manipulation and attachment avoidance. See Figure 6 for a depiction of the experimental condition * attachment anxiety interaction. Tests of the simple slopes revealed that endorsement of the consequentialist course of action did not vary as a function of attachment anxiety in the deontological consensus condition, $t(209) = 1.27$, $p = .21$, $d = .18$ or in the control condition, $t(209) = .08$, $p = .94$, $d = .01$. Endorsement of the consequentialist course of action did vary significantly as a function of attachment anxiety in the consequentialist consensus condition, $t(209) = 4.10$, $p < .0001$, $d = 0.58$. In other words, when the group preferred the consequentialist option (i.e. to remove the man’s kidney to save the others), the higher participants’ attachment anxiety, the more they endorsed the consequentialist course of action.
However, when the group expressed a preference for the deontological option (i.e. not to remove the man’s kidney to save the others), participants’ degree of attachment anxiety no longer influenced their judgment. Put differently, when the group favored the consequentialist option, anxiously attached participants endorsed that option with enthusiasm. However, when the group favored the deontological option, anxiously attached participants appeared less committed to the consequentialist option.

Examining this effect further, I found that at high levels of attachment anxiety, participants in the consequentialist consensus condition were more likely to endorse the consequentialist option than were participants in the deontological consensus condition, $t(209) = 2.25, p = .03, d = .31$. In contrast, at low levels of attachment anxiety, there was no difference in the endorsement of the consequentialist option between the deontological consensus and consequentialist consensus conditions, $t(209) = .96, p = .34, d = .13$. This pattern is consistent with the suggestion that individuals who are high in anxious attachment make moral judgments that more are sensitive to the group’s wishes.

**Avoidant Attachment**

I next examined the experimental condition*attachment avoidance interaction (using the same procedure described above) and found a different pattern of results (See Figure 7). Tests of the simple slopes revealed that endorsement of the consequentialist option did not vary as a function of attachment avoidance in the deontological consensus condition, $t(209) = 1.24, p = .22, d = .17$, or in the control condition, $t(209) = .97, p = .33, d = .13$. Endorsement of the consequentialist course of action did vary significantly as a function of attachment avoidance in the consequentialist consensus condition, $t(209) = 2.50, p = .01, d = .35$, but in the opposite direction of anxiously attached participants. In other words, when the group preferred the
consequentialist option, those who were higher in attachment avoidance were more likely to condemn the consequentialist option.

This effect, which exceeded expectations, may represent a boundary condition to avoidantly attached people’s general preference for the consequentialist option (Koleva et al., 2014). These data suggest that avoidantly attached people prefer the consequentialist option unless it is the option preferred by the majority; in that case, they defect toward the deontological option. This pattern is consistent with findings indicating that avoidant people tend to actively resist influence from others (Overall & Sibley, 2008; Overall, Simpson, & Struthers, 2013) in order to defensively protect their autonomy (Simpson, Rholes, Orina, & Grich, 2002). The present data indicated that avoidantly attached individuals preferred to make more deontological judgments rather than conform to the opinions of the group, potentially because the latter choice poses a threat to their independence.

Note that in the control condition, although the correlation between attachment anxiety consequentialist judgment was of similar magnitude as in previous studies ($r = .11$), the effect was not significant. This was most likely because the power was inadequate to detect this small effect; this condition contained only 72 participants whereas the previous studies and Koleva et al. (2014) report samples ranging from $n = 421$ to $n = 7,533$.

In summary, the differences between the consequentialist consensus condition and the deontological consensus condition suggests that both anxiously and avoidantly attached people base their judgment at least in part on their view of the group’s preference. Whereas anxiously attached participants shifted toward the group’s preference, avoidantly attached participants shifted away from the group’s preference. The notion that moral decision makers may take into account the wishes of those who are actually in the situation has been largely absent from previous studies on consequentialist reasoning.
2.7 Discussion

Moral reasoning does not occur in a social vacuum. One important feature of the observers that has influence on moral reasoning appears to be attachment style (Kogut & Kogut, 2013; Koleva et al., 2014). This is not surprising given that attachment style represents a fundamental lens through which adults interpret their social environment and shapes the motivations individuals bring to interpersonal interactions (Mikulincer et al., 2007). In the pretest, I found that (a) both anxious and avoidant attachment were associated with decreased wrongness ratings for the consequentialist course of action and (b) this association could not be explained by neuroticism or empathic concern. In Studies 1 and 2, I found that while the moral judgment output was the same for anxious and avoidant people, the pattern of associations differed. Anxious attachment predicted a higher need to belong, which in turn was associated with greater focus on the group as a whole. This translated into wrongness judgments that prioritized the welfare of the group as a whole over the welfare of the sacrificed individual. On the other hand, avoidant attachment was related to discomfort with caring for others, which in turn was associated with less empathy for the individual to be harmed. Lower empathy toward the victim was associated with viewing the act of sacrificing an individual for the good of the group as less wrong. This pattern is consistent with recent results reported by Kogut et al. (2013) in which anxiously attached individuals donated more money to identifiable victims than to unidentifiable victims, while avoidant individuals donated equivalent (and lower) amounts of money to identifiable and unidentifiable victims. According to my reasoning, because anxiously attached individuals are powerfully motivated to seek social acceptance, they are more willing to provide help when there is a possibility of their help being recognized. Similarly, in consequentialist dilemmas, providing help to the larger number of people increases the likelihood of recognition and acceptance.
In Study 3, I demonstrated that the moral judgments of anxiously attached individuals are influenced by what they believe the group desires. When the group desired the consequentialist option, those who were high in attachment anxiety were more likely to endorse the consequentialist course of action. However, when the group desired the deontological option, attachment anxiety played no role in predicting moral judgments. In other words, I eliminated the effect of attachment anxiety on moral judgments by providing feedback that the group desired a deontological outcome. This pattern suggests that a principal reason why anxiously (and not avoidantly) attached people choose the consequentialist option is that they see that option as a vehicle to social approval. When the consequentialist option does not promise to yield such approval, they are less likely to endorse that option.

In contrast, whereas in general avoidant people choose the consequentialist option, in Study 3, when the group desired the consequentialist option, high (but not low) avoidant participants made a point of condemning that option. This reactance-like tendency to actively resist influence from others has been demonstrated in previous work on avoidantly attached individuals (Overall & Sibley, 2008; Overall et al., 2013).

**Implications for Adult Attachment Research**

The present studies build on the findings of Koleva et al. (2014) by unpacking the process through which avoidant attachment leads to consequentialist judgment and, perhaps more importantly, by identifying a second, separate potential pathway to consequentialism. Because avoidantly attached individuals are uncomfortable with caring for others, their focus is on refraining from empathizing with the individual to be sacrificed. In contrast, because anxiously attached individuals are motivated by a pronounced need to belong, their focus is on satisfying the desires of the group.
The finding that attachment style plays a fundamental role in conscious perceptions of right and wrong adds to a growing body of work suggesting that humans’ social relatedness needs are so pervasive that they influence domains that, at first glance, seem to have little to do with relationships (Joel, MacDonald, & Plaks, 2012). There is increasing evidence that working models of self and other play an important role not only in our more intimate relationships, but in a wide range of other life domains, including work performance (Vasquez, Durik, & Hyde, 2002), consumer choice (Thomson, Whelan, & Johnson, 2012), and health behavior (Feeney & Ryan, 1994). The present findings add moral judgment to that list.

I suggest that the wide-reaching effects of attachment style may be understood through a motivated cognition perspective (e.g., Higgins, et al., 1982; Gardner, et al., 2000). According to this approach, different attachment styles are associated with different interpersonal motivational concerns. These differing motivational concerns, in turn, raise or lower sensitivity to different aspects of interpersonal situations. These differential sensitivities, in turn, help to foster corresponding patterns of decision-making. In the present studies, these differential sensitivities translated into different patterns of moral judgment.

The association between attachment style and moral judgment may have important implications for real-life moral decision-making. For example, securely attached individuals’ more deontological framework – a framework that values individual rights over outcomes – might help to explain their stronger prosocial tendencies (e.g., Gillath et al., 2005). Similarly, avoidantly attached individuals’ more consequentialist framework – a framework that places less value on following rules for their own sake – may help to explain their greater stated willingness to cheat on their romantic partners (Dewall et al., 2011).

**Implications for Moral Judgment Research**
The Central Tension Principle (Greene, 2014) asserts that consequentialist judgments are preferentially supported by the cognitive control system and deontological judgments are preferentially supported by the intuitive/emotional system. However, as outlined in Chapter 1, research has begun to expand the range of processes associated with each type of judgment. As such, it is important to identify contexts where the Central Tension Principle does not hold. For example, Conway and Gawronski (2013) demonstrated that there are at least two reasons to make a consequentialist moral judgment (i.e. endorsement of consequentialist principles or rejection of deontological principles). The present research extends this line of research by identifying two additional psychological routes to the consequentialist option. The results suggest that avoidantly attached individuals’ consequentialist judgment is motivated by lower empathy for the person who must suffer in the name of the group. Researchers have found similar effects for people who were high in Machiavellianism and psychopathy (Bartels & Pizarro, 2011; Koenigs et al., 2012). In contrast, anxiously attached individuals’ endorsement of the consequentialist choice was not associated with coldness toward the victim, but was motivated by a desire to meet the needs of the group. This second path to consequentialist judgment suggests that any variable that increases the desire for group acceptance may activate consequentialism, including, for example, higher assimilation needs (Brewer, 1991). Moreover, given that cultures vary in the degree to which they emphasize conformity (Bond & Smith, 1996), some cultures may show a greater tendency to reach consequentialist judgment through the route that is associated with an increased need to belong and the welfare of the group as a whole, whereas others do so through route that is associated with discomfort caring for others and decreased empathy for the individual sacrificed for the group. I suggest that, moving forward, future researchers should be mindful of this distinction.
In addition, these studies suggest the need to move beyond the Dual-Process model’s assumption that consequentialist judgments are the result of a decrease in emotionality (Greene et al., 2001; Greene et al., 2008; Greene, 2013). Anxious attachment, by definition, implies a high degree of chronic emotionality (specifically, anxiety in regard to interpersonal relationships), yet in the present studies, attachment anxiety consistently predicted more consequentialist judgments.

Furthermore, research in this area has until recently tended to be relatively silent regarding the moral decision maker’s larger relational context. The present data suggest that different histories of relationship experiences lead to systematic differences in the likelihood of endorsing consequentialist actions. Incorporating this type of information about individuals into our understanding of their moral judgments has important implications for future research.

In addition, much of the work related to the Dual-Process model has focused on how features of the act itself alter moral judgments (Greene et al., 2009, 2004, 2001; Moore et al., 2008) and has tended not to examine other features of the situation that may affect moral judgments. The present data indicate that certain features of the beneficiaries, namely their desires, interact with attachment insecurity to influence moral judgments. This was despite the fact that the act required in the dilemma was a personal transgression and therefore should have elicited a strong emotional reaction for participants. This suggests that, while moral judgments are undoubtedly influenced by the type of action committed, a complete understanding of moral judgments will require taking into account other features of the situation.

**Limitations and Future Directions**

First, it should be noted that although the associations between attachment insecurity and consequentialist judgment were robust and replicable, the effect sizes were small. Nevertheless, I suggest that future researchers may gain a more detailed glimpse into the psychology of moral
decision by examining additional features of the observer including – but not limited to – attachment style.

In addition, while Figure 1 suggests other features of the scenario that may influence moral judgments I only examined how attachment insecurity interacted with one specific feature of the beneficiaries (the outcome the group desired). One may reasonably hypothesize that attachment insecurity interacts with other features of the situation such as specific features of the victim. For example, given that anxiously attached individual strongly seek the approval of others, if the potential victim was popular or influential, this may push anxiously attached individuals away from the consequentialist course of action.

In addition, if anxiously attached individuals are deeply concerned with social acceptance, why do they not gravitate toward the deontological position by upholding universally cherished societal rules such as “Thou shalt not kill”? Perhaps in Study 3 anxiously attached individuals were not acquiescing to the wishes of the people in the scenario as much as they were conforming to what they presumed was the consensus choice in society. In other words, in the manner of “intuitive politicians” (Tetlock, 2002), anxiously attached individuals may steer their behavior toward what they believe people in general view with the most approval. This explanation has some merit. Research has demonstrated that anxiously attached individuals are prone to overestimate the similarity between their own opinions and the opinions of others (Mikulincer, Orbach, & Iavnieli, 1998). However, if the desires and wishes of the individuals in the scenario did not matter, I would expect to see them choose the consequentialist course of action regardless of the group’s wishes. This is not what I observed in Study 3. The desires of the individuals involved in the scenario did influence the judgments of anxiously attached individuals. Nonetheless a fruitful area for future research would be to identify more
precisely when moral judgments are influenced by the wishes of the individuals involved in the scenario and when they are not.
Chapter 3

3 Appealing to anger and sadness: Differential use of emotion language when justifying deontological and consequentialist moral judgments

In Chapter 2, I provided evidence for one emotional route to consequentialism. In Chapter 3, I approached the role of emotion in moral judgment from a different angle: participants’ moral justifications for their judgments. Rather than analyzing participants’ subjective emotional experience, I analyzed the types of emotions participants invoked when making their moral argument. I assumed that this approach would shed light on peoples’ lay theories about which emotions tend to underlie deontological and consequentialist judgments.

One way to address this question is to analyze the type of emotional language individuals spontaneously generate to justify their moral judgments. While some researchers (Haidt, 2001) suggest that a moral justification represents post-hoc rationalization for a moral judgment, Pennebaker and colleagues (Pennebaker, Booth, Boyd, & Francis, 2015; Tausczik & Pennebaker, 2010) suggest that the types of words people use can provide a window into concurrent feelings, beliefs, and thinking patterns. Furthermore, Fiske & Rai (2015) suggest that moral justifications reflect an individual’s understanding of the moral standards to which they are being held. In other words, moral justifications provide insight into the type of content the individual thinks an audience will find morally persuasive. Therefore, by analyzing the emotional content of participants’ moral justifications, I hoped to identify the types of emotional information that was activated as participants made their deontological and consequentialist arguments.

I hypothesized that when justifying a deontological moral judgment, participants would emphasize anger. Anger is, by definition, an emotional reaction to a perceived harm or justice violation (Cannon, Schnall, & White, 2011; Horberg, Oveis, Keltner, & Cohen, 2009;
Hutcherson & Gross, 2011). Thus, a deontological argument, with its emphasis on rule-based morality, should contain more anger related language than a consequentialist argument.

In contrast, I hypothesized that when justifying a consequentialist decision, participants’ emotional appeals would not be limited to anger. Consequentialism often involves an acknowledgement of the tragic nature of moral dilemmas; i.e., that there is no solution that results in zero harm (Singer, 2011). As such, I hypothesized that consequentialist arguments would contain a comparatively a greater amount of language related to sadness.

To measure spontaneous emotion language use, I used the Linguistic Inquiry Word Count (LIWC) – an often-used computer program for coding free response data. LIWC has been demonstrated to be a valid measure of emotional word usage such as predicting increased use of anger language in response to the terrorist attacks on 9/11 (Back, Küfner, & Egloff, 2010) and use of sadness language in response to the tragedy of the Sandy Hook school massacre (Dore, Ort, Braverman, & Ochsner, 2015). In addition, participants are likely to be unaware of the proportion of emotion related language they are using when making a moral justification. Therefore, LIWC measurements of emotional language may provide an implicit measure of the emotional concepts accessible to participants at the time of making the moral judgment.

3.1 Study 4

3.1.1 Method

Participants

251 participants (109 male, 141 female, 1 participant that did not provide a gender identification) were recruited through Amazon’s Mechanical Turk. The average age of participants was 36.76 years ($SD = 12.41$). The minimum required sample size to achieve 80%
power was determined using G*Power 3.1 (ANOVA: Repeated measures, within-between interaction: Faul et al., 2007). I hypothesized a 3 (discrete emotion: anger, sad, anxiety) X 2 (decision type: deontological vs. consequentialist) with discrete emotion being a within-subject variable. Assuming a small effect size ($\eta^2=.01$) and a moderate correlation between repeated-measures ($r=.25$) of the minimum recommended sample size to achieve 80% power was 240. Our final sample exceeded this minimum requirement.

**Materials and Procedure**

Participants were randomly assigned to evaluate one of two moral dilemmas. After reading the dilemmas, participants were asked to indicate what they would do in this situation. After making their selection, participants were given 10 minutes to type a written justification for their response. Participants then completed a demographics questionnaire and were debriefed.

**Dilemmas.** Participants were randomly assigned to evaluate the dilemma “Sophie’s choice” (Greene et al., 2008) or “Nuclear reactor” (Moore, Clarke, & Kane, 2008). In each dilemma participants are asked to violate a sacred rule in order to maximize outcomes (consequentialist decision) or uphold a sacred rule but forgo a positive outcome (deontological decision). Please see appendix D for the full text of the dilemmas.

**Justifications.** Content of the written justifications was analyzed using the Linguistic Inquiry Word Count (Pennebaker et al., 2015). Participants’ responses were on average 110.43 words long ($SD = 66.23$). For each participant, LIWC provides the percentage of words that fall into a range of difference categories. LIWC’s coding dictionary contains categories for general emotion language use (“affect”), positive emotion language use (“posemo”), and negative emotion language use (“negemo”). In addition, LIWC provides variables measuring the use of anger (“anger”), sadness (“sad”), and anxiety (“anx”) related language.
3.1.2 Results

First, I analyzed whether the type of action participants decided to pursue (deontological vs. consequentialist) predicted general affective language use. I conducted ANOVAs using response type (deontological response vs. consequentialist response) to predict the three different measures of general affect (general affect = “affect”; positive emotions = “posemo”; negative emotions = “negemo”), controlling for word count and the dilemma participants evaluated (Sophie’s Choice or Nuclear Reactor). Results revealed that decision type had no effect on use of general affective language, $F(1, 245) = .46, p = .40, \eta^2 < .01$. That is, making the deontological (vs. consequentialist) choice was not associated with greater use of emotion language. This null finding may be interpreted as inconsistent with the Central Tension Principle.

Furthermore, results revealed no significant effect of response type when predicting use of positive emotions, $F(1, 245) = .06, p = .81, \eta^2 < .01$, or negative emotions, $F(1, 245) = .53, p = .47, \eta^2 < .01$. Overall, this pattern suggests that, in general, participants used an equivalent amount of emotion language in their responses regardless of whether they chose the deontological or consequentialist option.

Next, I conducted a repeated-measures ANOVA with the percentage of words used as the dependent variable. The within-subjects variable was the type of emotion language (anxiety, anger, and sadness). The between-subjects variable was participants’ response to the dilemma (deontological vs. consequentialist). The dilemma to which participants were assigned and total word count were entered as covariates.

The analysis revealed a significant main effect of emotion type, $F(2, 490) = 10.66, p < .001, \eta^2 = .04$, and a significant emotion type X response interaction, $F(2, 490) = 13.05, p < .001, \eta^2 = .05$ (see Figure 8). There was no significant main effect of response, $F(1, 245) < .01, p = .95, \eta^2 < .001$. 
Next, I probed the simple effects. The amount of anxiety-related language used did not differ between deontological ($M=.38, SE=.09$) and consequentialist ($M=.53, SE=.09$) responses, $t(245) = 1.17, p = .25, d = .15$. However, deontological responders ($M=1.54, SE=.14$) used significantly more anger-related language, $t(245) = 3.01, p < .01, d = .38$, than did consequentialist responders ($M=.91, SE=.14$). In addition, deontological responders ($M=.27, SE=.08$) used significantly less sadness-related language, $t(245) = 3.92, p < .001, d = .50$, than did consequentialist responders ($M=.77, SE=.08$). Thus far, the results are consistent with the notion that anger is more strongly associated with deontological justifications than consequentialist justifications, whereas sadness is more strongly associated with consequentialist justifications than deontological justifications.

Further analyses revealed that consequentialist responders used roughly equal amounts of anger and sadness related language, $t(490) = .84, p = .39, d = .11$. In addition, consequentialist responders used more anger-related language, $t(490) = 2.29, p < .05, d = .29$, and marginally more sadness-related language, $t(490) = 1.93, p = .054, d = .24$, than anxiety-related language. Deontological responders used more anger-related language than both anxiety-, $t(490) = 7.11, p < .001, d = .89$, and sadness-, $t(490) = 7.76, p < .001, d = .95$, related language. Deontological responders used roughly equal amounts of anxiety and sadness related language, $t(490) = .85, p = .39, d = .10$.

As an alternative approach to the analysis, I tested whether the ratio of anger to sadness language used would vary as a function of decision type. To test the hypothesis, I computed a difference score by subtracting “sad” values from “anger” values. Thus, a score of 0 on this variable reflects the use of equal amounts of anger and sadness language, positive scores reflect the use of more anger than sadness language, and negative values reflect the use of more sadness than anger language.
I tested my main hypothesis that deontological responders would use a larger ratio of anger- to sadness-related language than would consequentialist responders. I conducted an ANOVA using response type to predict the anger – sadness difference score while controlling for word count and dilemma. Results revealed that deontological responders (\(M=1.28, SE=.16\)) demonstrated a significantly larger anger/sadness ratio than did consequentialist responders (\(M=.14, SE=.16\)), \(t(245) = 4.56, p < .001, d = .58\) (see Figure 9). Furthermore, as depicted in Figure 2, the error bar for consequentialist responders crosses 0. This indicates that consequentialist responders used an equivalent amount of anger- and sadness related language in their response. In summary, whereas deontological responders used more anger than sadness language, this ratio was statistically equivalent for consequentialist responders.

### 3.2 Study 5

Next, I sought to ensure that the effects observed in Study 4 were not limited to the modality in which participants made their justification (i.e. writing vs. oral expression). Furthermore, I sought to ensure that the effects observed in Study 4 were not limited to the modality in which the dilemma was presented (i.e. text format vs. audio format). To that end, participants in Study 5 were asked to listen to a description of three moral dilemmas. After listening to each dilemma, participants were asked to indicate verbally what they would do in the given situation. Participants were then asked to give a verbal justification for their response. When participants had completed demographics questionnaire and then were debriefed.

#### 3.2.1 Method

**Participants**
Participants were undergraduate students enrolled in the introductory psychology course at the University of Toronto. At total of 128 (103 Female, 23 male, 2 participants did not provide a gender identification) students participated in the study. The average age of participants was 18.46 years ($SD = 1.87$). The minimum required sample size to achieve 80% power was determined using G*Power 3.1 (ANOVA: Repeated measures, within-between interaction: Faul et al., 2007). I hypothesized a 3 (discrete emotion: anger, sad, anxiety) X 4 (number of consequentialist judgments) with discrete emotion being a within-subject variable. Using the effect size for the interaction observed in Study 1 ($\eta^2 = .04$) and a moderate correlation between repeated-measures ($r = .25$) of the minimum recommended sample size to achieve 80% power was 60 participants. Our final sample exceeded this minimum criterion.

**Materials and Procedure**

**Dilemmas.** Participant evaluated three dilemmas similar in format to the dilemmas used in Study 4, but different in content. In response to criticism regarding the ecological validity of dilemmas previously used in the literature (Kahane, 2012, 2015), we constructed three moral dilemmas that have real-world application (see Appendix E for full transcript of each dilemma). As in Study 4, participants were asked to make a decision to violate a rule in order to maximize outcomes (consequentialist decision) or to uphold a rule and forgo a positive outcome (deontological decision). I grouped participants based on the total number of consequentialist responses (ranging from 0-3). The number of consequentialist responses was the main predictor in our analysis.

**Justifications.** After participants indicated their response, they were asked to imagine that they had met someone who disagreed with their response. Participants were asked to imagine standing face to face with this individual and trying to convince him or her that their response was the morally correct thing to do. Participants provided their argument verbally
while being audio-recorded. When each participant stopped speaking, the experimenter asked if they had anything else they would like to add. If yes, the experimenter allowed the participant to continue. If no, the participant moved on the next dilemma. Each participant received a maximum of two prompts.

Once participants had completed the experiment, their verbal responses were transcribed for analysis and then analyzed using the Linguistic Inquiry Word Count (Pennebaker et al., 2015). The length of participants’ responses averaged 158 words (SD = 79.36). For the analysis, we used the same LIWC variables as in Study 4. Each variable was calculated by aggregating across the three dilemmas that participants evaluated.

### 3.2.2 Results

First I analyzed whether the number of consequentialist responses predicted general affective language use. Participants were grouped based on the number of consequentialist decisions they made (0-3). In total, 7 participants made zero consequentialist decisions, 37 made one consequentialist decision, 49, made two consequentialist decisions, and 34 made three consequentialist decisions. Because so few participants made zero consequentialist decisions, these participants were dropped from the analysis. As in previous analyses, word count was entered as a covariate. As in Study 4, we conducted three ANOVAs using the number of consequentialist responses to predict the effect of three different measures of general affect (general affect = “affect”; positive emotions = “posemo”; negative emotions = “negemo”) on number of consequentialist responses, while controlling for word count. Results revealed no significant effect of number of consequentialist response on general affect, $F(2, 112) = .08, p = .92, \eta^2 < .01$, positive emotion, $F(2, 112) = .06, p = .94, \eta^2 < .01$, or negative emotion, $F(2, 112) = .18, p = .84, \eta^2 < .01$. Overall, the data indicated that, in general, participants used an equivalent
amount of emotional language regardless of the number of consequentialist judgments they made. This is consistent with Study 4; in both cases, deontologists and consequentialists did not differ in overall use of emotional language.

Next, I conducted a repeated-measures ANOVA with the percentage of words used as the dependent variable. The within-subjects variable was the type of emotion language (anxiety, anger, and sadness). The between-subjects variable was number of consequentialist responses (ranging from 1 to 3). Participants were grouped based on the number of consequentialist decisions they made (a variable I henceforth call “response”).

The analysis revealed a significant main effect of emotion type, $F(2, 224) = 3.11, p < .05, \eta^2 = .03$, and a significant emotion type X response interaction, $F(4, 224) = 2.66, p < .05, \eta^2 = .05$ (see Figure 10). There was no significant main effect of response, $F(2, 112) = .03, p = .97, \eta^2 < .001$.

Next, I probed the simple effects. Participants who made one consequentialist judgment used the same amount of anxiety language ($M=.50, SE=.08$) as those that made two consequentialist judgments ($M=.49, SE=.09$), $t(112) = .08, p = .94, d = .02$, or three consequentialist judgments ($M=.51, SE=.08$), $t(112) = .08, p = .93, d = .02$. There was also no difference in the use of anxiety related language between those who made two or three consequentialist judgments, $t(112) = .17, p = .86, d = .04$.

Furthermore, participants who made one consequentialist judgment used the same amount of anger language ($M=.95, SE=.11$) as those who made two consequentialist judgments ($M=.84, SE=.09$), $t(112) = .77, p = .45, d = .17$, or three consequentialist judgments ($M=.70, SE=.11$), $t(112) = 1.65, p = .10, d = .40$. There was also no difference in the use of anger-related language between those who made two or three consequentialist judgments, $t(112) = 1.01, p = .31, d = .23$. 
Next, we examined sadness-related language. Participants who made one consequentialist judgment used marginally less sadness language ($M=.27, SE=.06$) than those who made two consequentialist judgments ($M=.42, SE=.05$), $t(112) = 1.81, p = .07, d = .41$, and significantly less sadness language than participants who made three consequentialist judgments ($M=.57, SE=.06$), $t(112) = 3.29, p < .01, d = .80$. Participants who made two consequentialist judgments used an equal amount of sadness language compared to those who made three consequentialist judgments, $t(112) = 1.75, p = .84, d = .40$. This pattern is consistent with my hypothesis that an increase in consequentialist judgments would be positively related to use of sadness language.

Participants who made a single consequentialist response used significantly more anger- ($M=.95, SE=.11$), $t(224) = 3.93, p < .001, d = .82$, and significantly less sadness- ($M=.27, SE=.06$), $t(224) = 2.41, p < .05, d = .53$ related language than anxiety-related language ($M=.50, SE=.08$). Participants who made a single consequentialist response used significantly more anger than sadness language, $t(224) = 5.11, p < .001, d = 1.22$. This pattern is also consistent with my hypothesis that decreased consequentialist reasoning would be associated with increased anger language use and decreased sadness language use.

Further analyses revealed that participants who made two consequentialist responses used significantly more anger- ($M=.84, SE=.09$), $t(224) = 3.57, p < .001, d = .67$, and an equal amount of sadness- ($M=.42, SE=.05$), $t(224) = .80, p = .42, d = .15$ related language than anxiety-related language ($M=.49, SE=.07$). Participants who made two consequentialist responses used significantly more anger than sadness language, $t(224) = 3.65, p < .001, d = .66$.

Participants who made three consequentialist responses used equal amounts of anger- ($M=.70, SE=.11$), $t(224) = 1.61, p = .11, d = .25$, and sadness- ($M=.57, SE=.06$), $t(224) = .65, p = .51, d = .14$ related language than anxiety-related language ($M=.51, SE=.08$). Participants who
made a two consequentialist responses used equivalent amounts of anger and sadness language, 
\[ t(224) = .91, p = .37, d = .22. \]

As in Study 4, to test the hypothesis that the ratio of anger to sadness related language would vary with the number of consequentialist judgments, I first computed a difference score by subtracting sad values from anger values. Thus, a score of 0 reflected the use of equivalent amounts of anger and sadness language, positive scores reflected more anger than sadness language, and negative values more sadness than anger language. Next, I tested my main hypothesis: Participants who made fewer consequentialist judgments (reflecting stronger deontological beliefs) would exhibit a larger ratio of anger to sadness related language than those who made more consequentialist judgments. I conducted an ANOVA using the number of consequentialist responses to predict the anger – sadness difference score while controlling for word count.

Results revealed a significant effect of number of consequentialist responses on the anger – sadness difference score, \[ F(2, 111) = 4.49, p < .05, \eta^2 = .07 \] (see Figure 11). Analysis of the simple effects revealed no significant difference on the anger – sadness ratio between participants who made one consequentialist judgment (\(M=.68, SE=.13\)) and those who made two consequentialist judgments (\(M=.42, SE=.11\)), \[ t(111) = 1.50, p = .14, d = .33. \] There was also no significant difference between participants who made two consequentialist judgments and participants that made three consequentialist judgments (\(M=.12, SE=.13\)), \[ t(111) = 1.72, p = .09, d = .39. \] There was, however, a significant difference between participants who made one consequentialist judgment and those who made three consequentialist judgments, \[ t(111) = 2.99, p < .01, d = .72. \] Furthermore, as depicted in Figure 11, the error bar for participants who made three consequentialist judgments crosses zero. This indicates that the participants who made the
maximum number of consequentialist responses used equivalent amounts of anger and sadness language.

3.3 Discussion

The Central Tension Principle argues that deontological judgments - and not consequentialist judgments - are more strongly linked to emotionality. In both Studies 4 and 5, I found evidence to the contrary. Using a range of different dilemmas and modalities (writing vs. speaking), I found that deontological and consequentialist responders used equal amounts of emotional language overall. Moreover, I found that deontological responders used more anger language and consequentialist responders used more sadness language. Furthermore, the ratio of anger to sadness language was significantly larger for deontological responders than for consequentialist responders. In summary, the Central Tension Principle would predict a significant main effect in the amount of emotional language used by deontological versus consequentialist responders. I found that, instead, what varied was not the overall amount of emotional language, but the specific type of emotional language used. This suggests that the presence or absence of emotionality is not the key to predicting participants’ moral judgments. Instead, the specific type of emotional experience appears to be more important.

Limitations and Future Directions

There is considerable debate regarding how best to conceptualize emotions. While some argue that emotions are best understood as discrete categories (Ekman & Friesen, 1975), others argue that emotions are best understood as constructions that use domain general categorization processes (Barrett, 2013; Cameron, Lindquist, & Gray, 2015). From this latter ‘psychological constructionist’ perspective, one may criticize my use of the discrete categories of “anger” and “sadness”.
I would suggest, however, that although emotions may be best understood through the psychological constructionist framework, how *laypeople* communicate about their emotional experience relies on language that uses discrete emotion categories. As such, although my analysis of the language used to justify a moral judgment provides some insight into the concepts accessible to the individual at the time, these data cannot be interpreted as supporting a ‘discrete categories’ view of emotion in general.

Furthermore, while there is some research to support the claim that use of emotional language is correlated with emotional experience (Kahn, Tobin, Massey, & Anderson, 2016; Owen et al., 2006; Tausczik & Pennebaker, 2010), I wish to be cautious about concluding that, for example, use of anger language reflects actual, experienced anger. As suggested by Rai and Fiske (2015), participants may be expressing the type of emotional sentiment that they believe will be most persuasive to their audience. This could be done without experiencing the emotion at all. Future research should focus on using psychophysiological measure to assess whether emotional language use is related to concurrent emotional experience.

Although I posed hypotheses regarding the specific types of emotional language that would be used to justify each type of moral judgment, one limitation of the LIWC software is that it only provides three categories of emotion; anger, sadness, and anxiety. One emotion that is particularly relevant to moral judgment but is missing from the LIWC dictionary is disgust. The relationship between disgust and moral judgment has been extensively documented (e.g., Chapman & Anderson, 2013). Future research should expand the categories of emotions and include the use of disgust and contempt related language (Hutcherson & Gross, 2011).

In summary, Studies 4 and 5 provide additional data that are contrary to the Central Tension Principle’s hypotheses about emotion. Specifically, sadness was clearly associated with consequentialist justifications. These data, in conjunction with the data presented in Chapter 2,
suggests that the relationship between emotion and deontological/consequentialist reasoning is more complex than what is captured by the Central Tension Principle.
Chapter 4

4 The influence of an actor’s effort on observer’s moral judgments

Kathleen (Kay) Carter suffered from an untreatable degenerative spinal cord condition. As her health deteriorated, she decided that she wanted to end her life before her body “totally collapsed”. However, because physician-assisted suicide was at the time illegal in Canada, Kay Carter was forced to travel to Switzerland to obtain what she desired (Todd, 2015). Cases like this ultimately led the Supreme Court of Canada to rule that physician-assisted suicide should be made legal for individuals dealing with a “grievous and irremediable medical condition” (Carter v. Canada, 2015).

Should a doctor help a terminally ill patient commit suicide? In normative ethics, the deontological position (Kant, 1785/1949) asserts that morally correct acts are those that uphold rules and obligations (e.g., “Thou shalt not kill.”), a perspective that would likely prohibit euthanasia. The consequentialist position asserts that morally correct acts are those that maximize good outcomes even if doing so violates a rule or obligation (Mill, 1861/2007). Thus, a consequentialist could argue that if euthanizing a patient results in more overall good (e.g., reduced suffering, reduced financial burden), it is the morally correct thing to do³.

As discussed previously, in many of the studies examining how laypeople resolve such dilemmas, participants have read vignettes ostensibly designed to pit deontological inclinations against consequentialist inclinations (Greene et al., 2001, 2004, 2008, 2013, 2014). However, one of the criticisms of the Dual-Process Model that I detailed in Chapter 1 is that a significant portion of the literature has assumed that participants generally take an act-centered approach when faced with this type of dilemma. As such, participants’ responses to these dilemmas are
assumed to be driven by the condemnation or acceptance of the act in question (e.g. “Is this act right or wrong?”; Uhlmann, Pizarro, & Diermeier, 2015). According to the act-centered view, the “moral evaluation” node in Figure 1 is comprised solely of an evaluation of the act itself.

A second, comparatively under-examined approach states that observers evaluate not only the act, but also what the act indicates about the actor’s moral character (Uhlmann et al., 2015). This person-centered approach has been inspired by virtue ethics, a theory of normative ethics that originated in ancient Greek philosophy (Aristotle, 4th century BCE/2009) and has experienced a revival since the mid-20th century (Hursthouse, 1999). Whereas deontology emphasizes rules and obligations and consequentialism emphasizes outcomes, virtue ethics emphasizes the actor’s character. To the extent that laypeople take a virtue ethics approach, resolving a moral dilemma like euthanasia hinges not only on the question of the action’s intrinsic rightness/wrongness but also on “What kind of a person chooses the deontological (consequentialist) option?” (Uhlmann et al., 2015). According to the person-centered view, the “moral evaluation” node in Figure 1 is comprised of both an evaluation of the act committed and a related, but dissociable, evaluation of the character of the actor. While a moral evaluation under the act-centered approach can only take into account features of the act itself, the person-centered approach has the advantage of paths for other features of the situation (features of the actor, features of the victims, and features or the beneficiaries) to influence moral evaluations.

Furthermore, a person-centered approach to moral judgments may provide an adaptive advantage (Everett et al., 2016). Individuals who signal to others, via their actions, that they can be trusted are more likely to be chosen as cooperation partners. Moreover, observers motivated to make inferences about an actor’s character based on the actor’s action will be more successful at choosing beneficial cooperation partners (Everett et al., 2016).
To summarize, much of the research literature has treated the act alone as the decisive factor in moral judgment and considered information about the actor’s character, reputation, or decision procedure to be largely irrelevant. The person-centered approach (Critcher, Inbar, & Pizarro, 2013; Tannenbaum, Uhlmann, & Diermeier, 2011; Uhlmann, Zhu, & Diermeier, 2014) asserts that laypeople incorporate inferences about the character of the actor into their decision making calculus. Therefore, holding the act constant, participants’ moral judgments should be moderated by information that promotes different inferences about the actor’s character.

Several studies have demonstrated that character inferences often carry at least as much, if not more, weight in perceivers’ minds than the rightness/wrongness of the act itself. For example, participants were more likely to judge a driver as the cause of an accident if he was speeding home to hide cocaine versus to hide a present for a loved one (Alicke, 1992). In more recent work, participants rated an actor who made a prosocial decision quickly more favorably than an actor who made the same decision slowly (Critcher et al., 2013). At the same time, participants rated an actor who made an immoral decision quickly (vs. slowly) more negatively. In a third set of studies, participants were more willing to hire a more expensive CEO when a less expensive candidate requested a self-aggrandizing (but harmless) perk as part of the compensation package (Tannenbaum et al., 2011). The second CEO candidate’s frivolous request was perceived as diagnostic of negative moral character, which deterred participants from hiring him – even at a financial cost to the company. (For a conceptually related finding, see Uhlmann et al., 2014)

In other words, lay perceivers appear to make a clear distinction between an act’s moral rightness/wrongness and the moral character signified by the act. Such findings are consistent with other research indicating that humans place special importance on morally-relevant character information (Goodwin, 2015).
4.1 Deontological and Consequentialist Actions and Character

How do observers rate the character of actors who pursue deontological versus consequentialist courses of action? In general, lay observers appear biased toward judging deontological actors more favorably than consequentialist actors (Everett et al., 2016). For example, in several studies, participants judged throwing a dying man out of a lifeboat to prevent it from sinking (thereby saving several others) as the correct course of action; at the same, they judged the thrower to possess a more negative character (Uhlmann, Zhu, & Tannenbaum, 2013). Similarly, observers rated individuals who make consequentialist arguments more negatively (Kreps & Monin, 2014) and less trustworthy (Everett et al., 2016) than those who make deontological claims.

Kreps and Monin (2014) suggested that this deontological bias occurs for three reasons. First, whereas deontological claims generally invoke abstract principles (e.g., “Thou shalt not kill.”), consequentialist assertions tend to contain more concrete detail (Eyal & Liberman, 2012). As such, consequentialist claims are less likely to match people’s mental model of a general moral principle. Second, compared to deontological claims, consequentialist assertions often show a willingness to violate rules that may be considered sacred (Tetlock et al., 2000). Violation of sacred values may (a) signal that an actor does not share important emotional responses toward potential harms and (b) raise questions about the actor’s commitment to moral principles (Everett et al., 2016). Third, consequentialist claims may superficially resemble a self-interested perspective (Kreps & Monin, 2014). Failure to honor and respect normative values may signal that an actor is not trustworthy which may raise doubts about a consequentialist actor’s motives (Kreps & Monin, 2014; Everett et al., 2016). Indeed, participants rated
consequentialist claimants to be less authentic and less committed to the issue at hand (Kreps & Monin, 2014).

However, as I discussed in Chapter 1, consequentialism, as a philosophy, is a morally motivated position that cares deeply about benefitting society. Consequentialists have been defenders of freedom of expression, equal rights, and proponents of a reduction to global poverty and (Mill, 1859/1955, 1861/2007, 1869/1984; Singer, 2011). Therefore, given that several consequentialist positions have come to be widely accepted in the public sphere, certain types of information may encourage observers to overcome their default reservations about consequentialist actors.

For instance, studies have demonstrated a reduction in the deontological bias if the harm was caused indirectly (i.e. by flipping a switch; Greene et al., 2001; Greene et al., 2009), if it was the will of the group (Robinson, et al., 2015), or if the decision to cause harm was difficult for the actor (Everett et al., 2016). In this chapter I explore another source of information that may reduce the deontological bias: information about the actor’s level of exertion.

4.2 The Signaling Function of Effort

Quick decisions cause moral acts to appear more moral and immoral acts to appear more immoral (Critcher et al., 2013). This is presumably because people hold the lay theory that immediate, ‘gut’ responses reflect the actor’s authentic, unguarded self. The present studies build on this idea by examining the other side of the coin: deliberate, methodical effort may at times signal something positive: sincere conflict, as the person struggles toward the ‘right answer.’ If so, it may be possible to reduce the greater negativity assigned to consequentialist actors by providing information about the amount of effort an actor exerted while struggling to make a decision.
Several strands of evidence provide indirect evidence for this idea. Classic cognitive dissonance studies demonstrated that suffering creates value (Aronson & Mills, 1959); participants who underwent a severe group initiation (e.g., social embarrassment) subsequently rated that group more highly than those who underwent a mild initiation. More recent data demonstrated that participants were willing to donate more money to participate in a high-effort charity event (charity run) than a low-effort charity event (picnic). Thus, the amount of effort required to participate in the charity event altered the perceived value of the event itself (Olivola & Shafir, 2013). More generally, how a decision is made influences the perceived value of the decision (Higgins, Camacho, Idson, Spiegel, & Scholer, 2008). Participants in one study were asked to make a decision between owning a nice mug or a cheap pen. Participants asked to make the decision the “right way” subsequently assigned greater value to the mug than did those who were asked to make the “best choice”. In other words, instructions about how to make the decision altered the object’s perceived value. Based on this research, I suspected that in a dilemma involving euthanasia, information about how a doctor made his or her decision – i.e., with high versus low effort – would influence participants’ perceptions of both the wrongness of the act and the character of the doctor.

More specifically, I hypothesized that when no information about the doctor’s effort was provided, participants would show a deontological bias (Kreps & Monin, 2014) and rate physician-assisted suicide as less moral than refusing to assist in the suicide. However, when the physician exerted high effort, I expected this difference to be reduced or eliminated. This is because when participants disagree with a doctor who elects to assist the suicide, the doctor’s exertion of effort signals that at least the decision was made in the sincere pursuit of moral correctness. A quick consequentialist decision, on the other hand, may connote an underlying character of coldness, detachment, or a lack of respect for human life.
In contrast, I hypothesized that when the doctor refused the assist the suicide, effort would not appreciably alter participants’ judgment. This is because *not killing* is more closely aligned with a basic, widely-held sacred value (e.g., “Thou shalt not kill.”). Given the paramount importance of avoiding causing harm in most moral systems (Gray et al., 2012; Mikhail, 2007), perceivers may be especially attuned to evidence of avoiding killing. The question of *how* the actor reached his decision may assume comparatively less importance.

Put differently, I hypothesized that when the doctor refused to assist the suicide, participants’ judgments would be relatively act-based. However, when the doctor assisted the suicide, participants’ judgments would become more character-based. This is because the choice to uphold a sacred value provides little reason for an observer to question the actor’s character, whereas the choice to violate a sacred value leaves the observer with questions about the actor’s character.

### 4.3 Euthanasia Dilemmas

While the use of ‘trolley problem’-type moral dilemmas has been ubiquitous throughout the literature (Greene et al., 2001; 2004; 2008; Koenigs et al, 2007; Moore et al., 2008; Paxton et al., 2012; Uhlmann et al., 2013; Robinson et al., 2015), some researchers have called into question both their ecological validity and whether they validly assess individuals’ preference for the consequentialist or deontological positions (Kahane, 2012; Kahane, Everett, Earp, Farias, & Savulescu, 2015). With these concerns in mind, I constructed a vignette that depicted the real-world dilemma of physician-assisted suicide. Compared to scenarios involving a runaway trolley car, the present scenarios represent a realistic issue with significant policy consequences. I recognize, however, that the euthanasia dilemma differs in important ways from traditional ‘trolley problems’. For example, typical consequentialist dilemmas involve sacrificing one
person for the good of many, while the euthanasia dilemma involves sacrificing one person for that person’s own (perceived) good. In addition, the euthanasia dilemma involves an actor with high expertise (a doctor), whereas the actor in a typical scenario is a generic, unspecified person. Nonetheless, there are key similarities, including the notion of killing a person in order to maximize overall good (or reduce overall unhappiness).

In all versions of the dilemma, the terminally ill patient asked for the doctor’s help to end his life. This was included to mitigate potential concerns regarding whether the patient truly wanted to die. In the deontological version, Dr. Thomas refuses to help the patient end his life. In the consequentialist version, he agrees to help the patient end his life.

In operationalizing effort, I reasoned that observers may wonder whether the decision was well-informed. Therefore, in the low effort condition, the doctor took a few moments to consider his options before making his decision. In the high effort condition, the doctor took a month to gain as much knowledge as possible by engaging in research and careful deliberations before making his decision. (I return to the issue of the informational gain in Study 8.) Please see Appendix F for the complete text of the dilemmas.

I acknowledge potential ambiguity with regard to the choice to label “refusing to help the patient end their life” as deontological and “agreeing to assist the patient end their life” as consequentialist. For instance, refusing to help the patient may be motivated by the consequentialist belief that a world where euthanasia is practiced is worse than a world where it is forbidden. Likewise, agreeing to assist the suicide may be motivated by the deontological belief that one has a duty to respect an individual’s right to self-determination. To address this concern, I conducted a pilot study.
4.4 Pilot Study

4.4.1 Method

Participants. 134 participants (84 female; Mean Age = 40.15, SD Age = 13.73) were recruited from Amazon Mechanical Turk.

Procedure. Participants were randomly assigned to one of the four experimental conditions (See Appendix F for full text) 2 (Decision Type: Refuse to help vs. Agree to help) X 2 (Effort: Low effort vs. High Effort). The dependent measure of the pilot study was the Consequentialist Scale (Robinson, et al., 2015), which consisted of a set of deontological statements (e.g., Some rules should never be broken) and consequentialist statements (e.g., If rules and laws do not maximize happiness for people, they should be ignored). Of note, none of the statements referred to euthanasia in any way. In addition, none of the consequentialist items referred to reducing suffering. Participants were asked to indicate on a 7-point scale the degree to which Dr. Thomas’ action was motivated by each belief (1 = Dr. Thomas’ action was not at all motivated by this belief, 7 = Dr. Thomas’ action was strongly motivated by this belief). Both the deontological items, $\alpha=.93$, and consequentialist items, $\alpha=.90$ showed good internal reliability. I computed an aggregate motivation score by multiplying the deontological items by negative one and then averaging all items together. Therefore, scores greater than 1 reflect a belief that the doctor’s action was motivated by consequentialist beliefs, and scores less than 1 reflect the belief that the doctor’s action was motivated by deontological beliefs.

4.4.2 Results

I conducted an ANCOVA predicting aggregate motivation score from decision type while controlling for effort. This analysis revealed a significant effect of decision type, $F(1, 128)$
When the doctor refused to assist the suicide, participants indicated that his action was more motivated by deontological beliefs (Mean = -3.34, SE = .23). When the doctor agreed to help the patient end his life, participants indicated that his action was more motivated by consequentialist beliefs (Mean = 1.21, SE = .24). The fact that (a) none of the statements referred to euthanasia (or any specific dilemma) and (b) the consequentialist items were phrased in terms of maximizing happiness (rather than minimizing unhappiness) suggests that participants were invoking more general, abstract moral principles.

In summary, pilot testing supported the intuition that participants generally associate refusing to assist a suicide with deontological beliefs and agreeing to assist the suicide with consequentialist beliefs. With this finding, I turned to Study 6.

4.5 Study 6

In this study I tested my primary hypothesis: When the actor made the consequentialist choice, participants would rate the act more positively when he exerted high (versus low) effort. However, when he made the deontological choice, the doctor’s level of effort would not affect participants’ ratings.

4.5.1 Method

Participants. Originally, I recruited 2378 American participants through Mechanical Turk (Amazon). In light of recent suggestions to improve the quality of data collected through Mechanical Turk (Chandler, Mueller, & Paolacci, 2014), I established an a priori data cleaning procedure involving two elimination criteria. Participants had to correctly identify the action taken by the character in the vignette they read. Two hundred and eleven participants (8.9%) failed this check and were eliminated for the analysis. Next, I examined reading time. An
excessively short reading time was taken to reflect inattention; an excessively long reading time was taken to reflect distraction. Reading times were skewed right and were log transformed. The log transformed reading times were converted to z-scores. Forty-seven (1.9%) additional participants had z-scores plus or minus three standard deviations and were eliminated from the analysis.

The resulting sample consisted of 2120 participants (1260 females, 786 males, 6 participants provided an alternative gender, and 68 did not provide a gender identification). Mean age was 35.15 years ($SD=12.2$). A large majority (89%) of participants reported having complete at least some college or university training or higher.

**Materials and Procedure**

**Moral Dilemmas.** Participants were randomly assigned to read one of four euthanasia dilemmas that varied the decision the doctor made and the amount of effort he put into the decision (See Appendix F for full text). Participants read that Dr. Thomas is treating a patient with a terminal disease and the medications are no longer helping. With the disease spreading slowly, the patient could live several more years in agony. One day the patient asks Dr. Thomas to end his life via lethal injection. In the low effort condition, participants read “To figure out the morally correct thing to do, Dr. Thomas begins to think. After a few moments of deliberation Dr. Thomas…” Participants then read either “agreed to help the patient end their life” (consequentialist condition) or “refused to help the patient end their life” (deontological condition). In the high effort condition participants read “To figure out the morally correct thing to do, Dr. Thomas does extensive research, reading several books on the issue, meeting with families that have dealt with similar situations, consulting with religious leaders, philosophers, and scientists. After a month of deliberation Dr. Thomas…” either “agreed to help the patient
end their life” (consequentialist condition) or “refused to help the patient end their life” (deontological condition).

**Moral Judgments.** After reading the dilemma, participants completed moral judgment items modified from those used by Uhlmann, Zhu, and Tannenbaum (2013). Using 1-7 scales, participants rated how moral, ethical, and morally good Dr. Thomas’ decision was. Because these items showed high reliability, $\alpha=.89$, I aggregated them into a moral judgment index.

**Manipulation check.** Participants were asked, “How much effort did Dr. Thomas put in when trying to figure out the morally correct thing to do?” (1=No effort at all, 7=Lots of effort).

**Procedure.** After consenting to participate, participants were randomly assigned to one of the four dilemma conditions. After reading the dilemma, participants completed a manipulation check item and three items evaluating the decision the doctor had made. Finally, participants completed a demographics questionnaire and were debriefed.

4.5.2 Results

**Manipulation Check**

Participants indicated that the doctor exerted more effort in the high effort condition ($M=6.49$, $SE = .03$) than in the low effort condition ($M=4.07$, $SE = .06$), $t(2118)=33.68$, $p<.001$, $d=1.46$.

**Moral Judgments**

I conducted a 2 (decision type: deontological vs. consequentialist) X 2 (effort: high effort vs. low effort) between-subject ANOVA predicting participants’ scores on the moral judgment index. This revealed significant main effects of both decision type, $F(1, 2110)=27.61$, $p<.001$, $\eta^2_p=.01$, and effort, $F(1, 2110)=55.05$, $p<.001$, $\eta^2_p=.03$. I also observed the predicted two-way interaction, $F(1, 2110)=10.01$, $p<.01$, $\eta^2_p=.01$ (Figure 12).
Simple effects analyses indicated that at low effort, participants rated the deontological decision \((M=4.62, SE = .07)\) more moral than the consequentialist decision \((M=4.02, SE = .07)\), \(t(2110)=5.98 , p<.001, d=.36\). However, as predicted, at high effort, the difference between deontological \((M=4.92, SE = .07)\) and consequentialist \((M=4.77, SE = .07)\) decisions was no longer significant, \(t(2110)=1.47, p = .14, d = .09\).

In summary, at low effort, participants showed a deontological bias by favoring the doctor who refused to assist the suicide. However, at high effort, the two actions were rated equivalently. This suggests that participants were comparatively dismissive of the consequentialist action unless it was arrived at in a diligent and thoughtful manner.

4.6 Study 7

In Study 6, observers’ deontological bias was eliminated when the doctor exerted effort to ensure his decision was well informed. In Study 7, I examined a potential mechanism. I hypothesized that perceptions of character would play a key role. In the case of euthanasia, the consequentialist actor must be willing to harm his patient. Willingness to cause harm is generally seen as indicative of deficient moral character. Therefore, in the absence of information about how the actor arrived at the decision, a willingness to cause harm should lead observers to question the actor’s character. However, when an actor puts significant effort into the decision, this signals that the actor acknowledges the moral severity of the situation and is willing to expend resources to do the right thing. Effort expenditure, therefore, may attenuate fears that the consequentialist actor is morally deficient and reassure observers that the actor’s willingness to cause harm is morally motivated.

In contrast, I hypothesized that increased effort would have little to no effect on perceptions of the moral character of a deontological actor. Whereas the consequentialist actor’s willingness to cause harm gives reason for an observer to question the actor’s character, the
deontological course of action signals a willingness to uphold rules or principles regardless of the outcomes. This willingness to uphold certain sacred values is generally viewed as indicative of good moral character (Kreps & Monin, 2014; Tetlock et al., 2000). While the deontological course of action could be pursued for immoral reasons, the action itself provides no obvious signal for an observer to question the actor’s character. Taken together, I hypothesized that as effort increases, perceptions of the deontological actor’s character would remain comparatively stable while perceptions of character for the consequentialist actor would increase sharply.

4.6.1 Method

Participants

G*Power 3.1 (ANOVA: Repeated measures, within-between interaction; Faul, Erdfelder, Lang, & Buchner, 2007) was used to conduct a power analysis. Unlike in Study 6, effort was a within-subject variable. Therefore, a smaller sample was required to achieve 80% power. Using the effect size for the interaction between decision type and effort from Study 6, ($\eta^2_p = .01$), and assuming a medium correlation among the repeated measures ($r = .25$), a sample of 552 participants was required. Originally, 697 participants were recruited through Mechanical Turk. Participants’ MTurk IDs were screened to ensure none of the participants in Study 7 had participated in Study 6.

As in Study 6, I implemented a data cleaning procedure that was conducted prior to any analyses. With effort manipulated within-subjects, all participants read two dilemmas. After reading each dilemma, participants were asked to identify the protagonist’s decision. Participants had to correctly identify the protagonist’s decision in both dilemmas to be included in the analyses. Thirty-seven participants (5.3%) failed this check. Next, embedded within the manipulation check items (see below), participants were asked how much they agreed (1=Strongly disagree, 100=Strongly agree) with the statement “An Earth Year has 400 days”.
Twenty-seven participants (3.8%) provided a response of 10 or above and were eliminated. Lastly, I examined reading times. As in Study 6, reading times were skewed and thus log transformed and converted to z-scores. Thirteen participants’ (1.8%) Z-scores were plus or minus three standard deviations and were thus excluded from the analysis.

The resulting sample consisted of 620 American participants (358 females, 261 males, 1 alternative gender, mean age=35.15 years, SD=11.9), 90% of whom reported having completed at least some portion of a college degree.

**Materials and Procedure**

**Moral Dilemma.** I used the dilemmas used in Study 6. Participants were randomly assigned to the deontological or consequentialist condition. However, unlike Study 6, participants read and evaluated both the high effort and low effort version of the vignette. Thus, Study 7 used a mixed model design with effort (high effort vs. low effort) as a within-subject variable and decision type (deontological: refuse to assist the suicide vs. consequentialist: agree to assist the suicide) as a between-subject variable.

**Moral Judgments.** After reading each dilemma, participants completed the same moral judgment items used in Study 6. The items displayed good internal reliability in both the low effort, $\alpha=.93$ and the high effort, $\alpha=.96$ version of the dilemma, Therefore, items were aggregated to create a moral judgment index.

**Character Judgments.** After reading each dilemma, participants evaluated the doctor’s character. Participants indicated their agreement with a set of six statements using a 100-point slider (1=strongly disagree, 100=strongly agree; modified from Critcher et al., 2013 and Uhlmann et al., 2013): An example items is “I think Dr. Thomas is an extremely moral person.” (see Appendix G for all items). The six items in the low effort ($\alpha=.97$) and high effort ($\alpha=.98$)
versions of the dilemma showed good internal reliability and were aggregated to create a character judgment index.

**Manipulation Checks.** After reading each vignette, participants indicated the amount of effort the doctor exerted using two items: (1) “How much mental or psychological effort did Dr. Thomas exert when making his decision?” and 2) “How much physical effort did Dr. Thomas exert when making his decision?” (1=No physical (mental) effort, 100=Extreme physical (mental) effort).

**Procedure.** Participants were randomly assigned to the consequentialist or deontological condition. In each condition, they read two versions of the euthanasia dilemma, one where little effort was exerted and a second were high effort was exerted. After reading each dilemma, participants completed the manipulation check items, the moral judgment items, the moral character items, and the Consequentialist Scale. Lastly, participants completed a demographics form and were debriefed.

**4.6.2 Results**

**Manipulation Check**

Participants indicated that more psychological effort was exerted, \( t(619)=9.5, p<.001, d=0.45 \), in the high effort condition (\( M=89.99, SE = 0.6 \)) than in the low effort condition (\( M=81.54, SE = 0.9 \)). Participants also indicated that more physical effort was exerted, \( t(619)=20.56, p<.001, d=0.88 \), in the high effort condition (\( M=51.38, SE = 1.39 \)) than in the low effort condition (\( M=23.78, SE = 1.12 \)).

**Mediated Moderation Analysis**

I hypothesized that the effect of the decision type by effort interaction on moral judgments would be mediated by character judgments. To test this hypothesis I conducted a mediated moderation analysis (Muller, Judd, & Yzerbyt, 2005).
Study 7 featured a “between-within” design in which participants evaluated two moral dilemmas. The between-subjects factor was the type of decision (refusing or agreeing to help the patient end his life). This decision was held constant across the two vignettes participants evaluated. The within-subject factor was the amount of effort (high versus low) the doctor exerted reaching his decision. After reading each dilemma, participants made judgments about the doctor’s action and his moral character. In other words, character judgments and moral judgments were nested within participants.

Zhen, Zyphur, & Preacher, (2009) demonstrated the need to differentiate and test both between and within subject effects in the multilevel mediation setting. Therefore, the proposed mediator, character judgment, was decomposed into two separate terms. The first was each participant’s average character judgment across the two dilemmas. This term accounts for between-subjects variability in character judgments. The second term was computed by subtracting each participant’s average character judgment from the character judgment from each dilemma. This term accounts for changes in moral character judgments between the low effort and high effort conditions.

To enact this model in a mediated moderation framework (Muller, et al., 2005), I tested three multilevel models (See Table 4). First, as in Study 6, moral judgments were modeled as a function of the independent variable (decision type: deontological vs. consequentialist), the moderator (effort: high vs. low), and their interaction term. This revealed significant effects of decision type, $b=-5.45$, $SE = .88$, $t(1077.93)=6.19$, $p<.001$, $R^2_{β}=.03$, effort, $b=5.28$, $SE = .48$, $t(608.91)=11.08$, $p<.001$, $R^2_{β}=.15$, and their interaction, $b=1.66$, $SE = .48$, $t(680.913)=3.48$, $p<.01$, $R^2_{β}=.02$. Probing the interaction (Aiken & West, 1991), I observed a similar pattern of results to those observed in Study 6 (see Figure 13). The deontological decision (refused to assist the suicide) was rated more moral at high effort ($M=77.37$, $SE = 1.52$) than low effort ($M=70.12$, $SE = 1.52$)
$SE = 1.51), b=3.62, SE = .66, t(680.91)=5.46, p<.001, R^2_= .04. The consequentialist decision (agreed to assist suicide), was also rated more moral at high effort ($M=69.8, SE = 1.56$) than low effort ($M=55.92, SE = 1.56$), $b=6.94, SE = .66, t(680.913)=10.15, p<.001, R^2_= .13$. Note, however, that the amount of change between low and high effort was significantly greater when the doctor made the consequentialist decision.

At low effort, participants rated the deontological decision ($M=70.12, SE = 1.51$) more moral than the consequentialist decision ($M=55.92, SE = 1.56$), $b=-7.1, SE = 1.0, t(1225.77)=7.09, p<.001, R^2_= .04$. At high effort, the difference between deontological ($M=77.37, SE = 1.52$) and consequentialist ($M=69.8, SE = 1.56$) decisions, while still significant, $b=-3.78, SE = 1.0, t(1225.77)=3.78, p<.001, R^2_= .01$, was reduced. In short, while the deontological course of action was generally judged more moral than the consequentialist course of action, the doctor could reduce the discrepancy by demonstrating that his decision was arrived at in a diligent manner.

Next, character judgments were predicted using the same model. Character judgments were predicted by decision type, $b=-3.66, SE = .81, t(1083.57)=-4.51, p<.001, R^2_= .02$ effort, $b=2.6, SE = .44, t(678.39)=5.94, p<.001, R^2_= .05$, and their interaction, $b=1.35, SE = .44, t(678.39)=3.09, p<.01, R^2_= .01$. Probing the interaction (see Figure 14) I observed that when making the deontological decision, the doctor’s character was rated more positively at high effort ($M=79.32, SE = 1.40$) than at low effort ($M=76.83, SE = 1.24, b=1.24, SE = .61, t(678.39)=2.04, p<.05, R^2_= .01$. When making the consequentialist decision, the doctor’s character was rated more positively at high effort ($M=74.7, SE = 1.44$) than at low effort ($M=66.8, SE = 1.44, b=3.95, SE = .63, t(678.39)=6.3, p<.001, R^2_= .06$. As predicted, the effect of effort was stronger when the doctor made the consequentialist decision.
At low effort, the doctor’s character was rated more positively when he made the deontological decision ($M=76.83$, $SE = 1.40$) than the consequentialist decision ($M=66.8$, $SE = 1.44$), $b=-5.02$, $SE = .92$, $t(1226.65)=5.44$, $p<.001$, $R^2_\beta=.02$. At high effort, the doctor’s character was also rated more positively when he made the deontological decision ($M=79.32$, $SE = 1.40$) than the consequentialist decision ($M=74.7$, $SE = 1.44$), $b=-2.31$, $SE = .93$, $t(1226.65)=2.50$, $p<.05$, $R^2_\beta<.01$. However, the magnitude of this difference was significantly reduced compared to the low effort condition. In short, at low effort, participants exhibited a large deontological bias in character ratings. At high effort, this difference, while still significant, was also significantly attenuated.

Lastly, following the steps outlined by Muller and colleagues (2005), moral judgments were modeled by decision type, effort, the interaction term for decision type and effort, the between-subjects character term, the within-subjects character term, the interaction between effort and the between subject character term, and the interaction between effort and the within-subjects character term. According to Muller and colleagues (2005), mediated moderation is evidenced by at least one of two patterns of significance and non-significance in this final model.

The results reflected both patterns. Both the between-subjects character factor, $b=92$, $SE = .02$, $t(944.91)=47.07$, $p<.001$, $R^2_\beta=.70$, and within-subjects character factor, $b=.58$, $SE = .04$, $t(687.63)=13.26$, $p<.001$, $R^2_\beta=.20$ significantly predicted wrongness ratings. Critically, both the indirect effect from the decision type X effort interaction to moral judgment through the between-subjects character factor, $Sobel z=3.31$, $p<.001$, and the indirect effect from the decision type X effort interaction to moral judgment through the within-subject character factor, $Sobel z=3.23$, $p < .01$, were highly significant (see Figure 15). Thus, while the decision type X effort interaction remained a significant predictor in this model, $b=1.13$, $SE = .34$, $t(687.63)=3.34$, $p<.001$. However, the magnitude of this difference was significantly reduced compared to the low effort condition. In short, at low effort, participants exhibited a large deontological bias in character ratings. At high effort, this difference, while still significant, was also significantly attenuated.
\[ p < .01, R^2 = .02, \] the direct effect of the interaction was attenuated when controlling for character judgments.

In addition, the interaction between effort and the between-subjects character factor, \[ b = .06, SE = .01, t(687.63) = 4.56, p < .001, R^2 = .03, \] was significant. This pattern suggests that, as hypothesized, effort increased the degree to which character judgments were related to moral judgments.

In summary, these results replicate the finding that the actor’s effort influences observers’ judgments of wrongness more strongly for the consequentialist act than for the deontological act. In addition, Study 7 indicated that this effect was mediated by change in character judgments.

### 4.7 Study 8

In Studies 6-7, I observed a reduction in the deontological bias in moral judgment (Studies 6 and 7) and character judgment (Study 7) when the actor exerted high effort. In both cases, “effort” was operationalized as effort exerted in the pursuit of knowledge. However, other forms of effort may signal moral character. Virtue ethics suggests that the moral status of an action is not solely determined by how the actor arrived at his decision, but by the feelings experienced by the actor (Hursthouse, 1999). Therefore, another indicator that observers may seek is the actor’s emotional state. When resolving a difficult ethical dilemma such as euthanasia, one might expect an individual who is torn about what action to take, and who cares about the ethical ramifications of his action, to experience a great deal of stress.

Therefore, in Study 8 I sought to deconfound and compare the effects of two distinct types of effort: effort exerted through the pursuit of knowledge (henceforth called “research”) versus effort exerted in the form of emotional strain (henceforth called “stress”). I hypothesized that for high versus low effort research, I would replicate the results of Studies 4 and 5 by observing an interaction with decision type.
For the stress variable, multiple outcomes appeared plausible a priori. If stress operates in a similar manner to research, then I should observe an equivalent interaction between decision type and stress. However, if observers consider the actor’s emotional state independently of the actor’s pursuit of knowledge, a different pattern may emerge. For example, high stress might elevate observers’ ratings of the actor’s favorability equivalently for deontological and consequential decisions. Presumably in such a case, high stress signals sincere anguish over the difficult moral dilemma. Alternatively, high stress might reduce observers’ ratings, to the extent that stress signals weakness of character, or a lack of moral clarity. In Study 8, I examined which hypothesis would be best supported by the data.

In addition, I examined how these two types of effort (research versus stress) might interact. Specifically, I examined whether combining the two types of effort would lead to an additive effect that would yield a decision type X research X stress interaction. For example, might the effect of the actor’s stress on observers’ deontological bias vary according to the amount of effort the actor exerted?

Finally, in Studies 6 and 7, the doctor in the low effort condition made his decision quickly (within a few moments) compared, whereas in the high effort condition, the doctor took a month to reach his decision. In other words, effort was confounded with time. Given that time spent on the decision alters judgments of the actor (Critcher et al., 2013), I removed this potential confound in Study 8 by holding time constant (one month) across all conditions.

4.7.1 Method

Participants

G*Power 3.1 (Linear multiple regression: Fixed model $R^2$ increase; Faul, et al., 2007) was used to conduct a power analysis. I used regression analysis to examine the effect of decision type (deontological vs. consequentialist), research effort (continuous variable) and stress
(continuous variable). Assuming a small effect size \((R^2=.01\), comparable to the previous effect sizes), a total sample of 779 participants was required to achieve 80% power. Originally, 1035 participants were recruited through Mechanical Turk. Participants’ MTurk IDs were screened to ensure that none of the participants in Study 8 had participated in Studies 6 or 7. I followed an \textit{a priori} data cleaning procedure involving two elimination criteria. Forty participants (3.9%) failed to correctly identify the choice made in the vignette and were eliminated from the analysis. Next, I examined the time spent reading the dilemma. Reading times were skewed and were therefore log transformed and converted to z-scores. Ninety (8.7%) additional participants who had Z-scores plus or minus three standard deviations were eliminated from the analysis. The resulting sample consisted of 905 participants (554 females, 345 males, 5 alternative gender). Mean age was 36.44 years \((SD=12.18)\). A large majority (88.6%) of participants reported having complete at least some college education.

\textbf{Materials and Procedure}

\textbf{Moral Dilemmas.} The euthanasia dilemma stimuli used in Study 6 and 7 were altered to reflect the specific impact of effort exerted to gain knowledge (i.e. research) versus effort exerted through the experience of stress (see Appendix H for full text). Participants were randomly assigned to either the deontological or consequentialist decision type condition. Within each decision type condition, participants were randomly assigned to one of four vignettes. In the control condition, participants read that after a month of deliberation, the doctor made his decision. In the Research condition, participants read that the doctor conducted extensive research and after a month made his decision. In the Stress condition, the doctor took a month to make his decision, but in that time developed health issues linked with chronic stress, such as, cardiovascular disease (Dimsdale, 2008) and stomach ulcers (Levenstein et al., 1994). In the
Research + Stress condition, participants read all of the information provided in both the Research and Stress conditions.

**Manipulation Checks.** After reading the dilemma, participants were asked to indicate their agreement (1=Strongly Disagree, 7=Strongly Agree) with nine manipulation check items. Three items asked about the doctor’s effort, suffering, and knowledge gained (see Appendix I for all items).

**Moral Judgments.** Participants completed the same moral judgment items used in Studies 4 and 5. The items displayed good internal reliability, $\alpha=.83$, and were aggregated to create a moral judgment index.

**Character Judgments.** Participants completed the same character items used in Study 7. The items displayed good internal reliability, $\alpha=.97$, and were aggregated to create a character judgment index.

**Procedure.** Participants were randomly assigned to one of the eight conditions. After reading the dilemma, participants completed the manipulation check items, the moral judgment items, and the moral character items. These final two questionnaires were presented in random order.

### 4.7.2 Results

**Manipulation Checks**

I wished to ensure that the stress and research manipulations had the desired effects. Table 5 shows the means and standard deviations for each of the manipulation check items for the control, research, and stress groups. I omit the Research + Stress condition, as the knowledge and stress variables were conflated in this condition. Post-hoc tests for each item revealed that the Stress condition scored significantly higher than both the control and Research conditions on the “effort” and “suffering” items, (all $t's>2.09$, all $p<.04$). These seven items showed good
internal reliability, $\alpha=.84$, and were aggregated into an overall stress variable. Furthermore, the Research condition scored significantly higher than both the control and Stress conditions on the “knowledge” items (both $t's>14.61$, both $p's<.001$). The two knowledge items showed good internal reliability, $\alpha=.87$, and were aggregated into an overall research variable. The two, new continuous, aggregate measures of perceived stress and perceived research effort were used in all subsequent analyses.

**Dissociation Between Act and Character Judgments**

**Moral Judgments**

**Stress.** Moral judgments were regressed on decision type (deontological vs. consequentialist), the continuous variable stress, and their interaction term. This revealed significant main effects of decision type, $b=5.47$, $SE = .86$, $t(900)=6.38$, $p<.001$, $R^2=.04$, and stress, $b=2.78$, $SE = .78$, $t(900)=3.56$, $p<.001$, $R^2=.01$. The interaction term was not significant, $b=.08$, $SE = .78$, $t(900)=.10$, $p=.92$, $R^2<.0001$. This indicates that the actor’s experience of stress generally boosted the perceived moral correctness of his action, independently of whether he assisted or refused to assist the suicide.

**Research.** Next, I regressed moral judgment index scores on decision type (deontological vs. consequentialist), stress, research, and their interaction terms. This revealed significant main effects of both decision type, $b=5.73$, $SE = .86$, $t(896)=6.71$, $p<.001$, $R^2=.05$, and research, $b=3.32$, $SE = .50$, $t(896)=6.93$, $p<.001$, $R^2=.05$. The interaction between decision type and research observed in Studies 6 and 7 was marginally significant, $b=.91$, $SE = .46$, $t(896)=1.84$, $p=.065$, $R^2=.004$.

Although the interaction between decision type and research was marginally significant, because the analogous interaction was significant in Studies 6 and 7, I examined the simple
effects. The analysis revealed a pattern of results consistent with those of Studies 6-7 (Figure 16). At low effort research, the deontological decision ($M=66.56, SE = 1.66$) was rated more moral than the consequentialist decision ($M=51.88, SE = 1.81$), $b=7.34, SE = 1.23, t(896)=5.97, p<.001, R^2=.04$. However, at high effort research, the difference between the deontological ($M=75.03, SE = 1.70$) and the consequentialist decision ($M=66.79, SE = 1.75$), though still significant, $b=4.12, SE = 1.22, t(896)=3.37, p<.001, R^2=.01$, was marginally reduced.

**Research + Stress.** High stress boosted moral judgments independently of whether the doctor made the deontological or consequentialist decision. However, when research was added to the model, the effect of stress was reduced to marginal, $b=1.35, SE = .81, t(896)=1.68, p=.09, R^2=.003$. In other words, the presence/absence of high effort research was a stronger predictor of moral judgments than the presence/absence of high stress. In addition, stress was not involved in any significant interactions, all $b's<.53, t's(896)<.87, p>.39, R^2's<.001$. The lack of a significant three-way interaction suggests that these two different forms of exertion do not produce an additive effect when predicting moral judgment. While virtue ethics suggests that how a person feels while making a moral decision is vital in evaluating the moral status of their action (Hursthouse, 1999), these results suggest that how the decision was made was even more important.

**Summary of moral judgment results.** In Study 8, I replicated and extended the pattern of results from Studies 6-7. When the doctor exerted little effort to gain knowledge through research, participants rated the deontological action more favorably than the consequentialist action. However, when the doctor exerted significant effort to gain knowledge, this deontological bias was reduced. These data suggest that participants were more dismissive of the consequentialist option unless the doctor arrived at it via significant effort to gain knowledge. This pattern held when controlling for the amount of stress the doctor experienced. Moreover,
time taken to reach a decision was held constant across all conditions. Therefore, the results of Studies 4-5 cannot be attributed to differences in the perceived stress the doctor may have been experiencing, nor to the amount of time taken to reach his decision.

**Character Judgments**

I conducted equivalent analyses with character judgments as the dependent variable.

**Stress.** I regressed character judgments on decision type (deontological vs. consequentialist), the continuous variable stress, and their interaction term. Results revealed significant main effects of decision type, $b=3.09$, $SE = .67$, $t(901)=4.59$, $p<.001$, $R^2=.02$, and stress, $b=4.67$, $SE = .61$, $t(901)=7.63$, $p<.001$, $R^2=.06$. The interaction between decision type and stress was not significant, $b=-.67$, $SE = .61$, $t(901)=1.09$, $p=.28$, $R^2=.001$. Stress generally boosted character judgments independently of the doctor’s decision.

**Research.** Next, I regressed character judgments on decision type (deontological vs. consequentialist), stress, research, and their interaction terms. This revealed significant main effects of decision type, $b=3.49$, $SE = .66$, $t(897)=5.25$, $p<.001$, $R^2=.03$, stress, $b=3.38$, $SE = .63$, $t(897)=5.41$, $p<.001$, $R^2=.03$, and research, $b=3.07$, $SE = .38$, $t(897)=8.01$, $p<.001$, $R^2=.07$. I observed a significant interaction between decision type and research, $b=-.95$, $SE = .38$, $t(897)=2.50$, $p<.05$, $R^2=.01$. This two-way interaction was qualified by a significant three-way interaction between decision type, stress, and research, $b=-.62$, $SE = .30$, $t(897)=2.10$, $p<.05$, $R^2=.01$.

Next, I probed the simple effects (Figure 17). First, I examined the pattern of results at high stress. At low research effort, the deontological decision ($M=83.84$, $SE = 1.82$) yielded more positive character judgments than the consequentialist decision ($M=71.51$, $SE = 2.08$, $b=6.17$, $SE = 1.38$, $t(897)=4.47$, $p<.001$, $R^2=.02$. However, at high research effort, the difference in character judgment between the deontological decision ($M=89.05$, $SE = 1.73$) and the
consequentialist decision \( (M=88.27, SE = 1.66) \) became nonsignificant, \( b=.39, SE = .20, t(897)=.33, p=.74, R^2<.001 \). These results mirror those of Study 7.

Next, I examined the results at low stress. Here, the magnitude of the deontological bias was equivalent whether the doctor conducted low effort research, \( b=4.20, SE = 1.20, t(897)=3.83, p<.001, R^2=.02 \), or high effort research, \( b=3.22, SE = 1.51, t(897)=2.12, p<.05, R^2=.005 \).

**Summary of character judgment results.** While perceived stress had little impact on moral judgments, it played a significant role in predicting character judgments. I replicated the results of Study 7, observing a significant interaction between decision type and research effort when predicting character judgment. This two-way interaction was qualified by a three-way interaction involving decision type, research, and stress. The presence of a significant three-way interaction suggests an additive effect between research effort and stress when a consequentialist decision was made. In three of the four conditions (Control, Research, Stress), the deontological doctor received more favorable character ratings than the consequentialist doctor. However, when both research effort and stress were high, the deontological bias in character judgment was eliminated.

### 4.8 Discussion

In all three studies in this chapter, when the actor exerted little effort to make his moral decision, participants displayed a deontological bias, rating the deontological action (refusing to assist a suicide) more morally correct than the consequentialist action (assisting the suicide). However, when the decision was arrived at in an effortful manner, this deontological bias was significantly reduced (Studies 7 and 8) or eliminated (Study 6).

How did exertion affect character judgments? In Studies 7-8, when the actor exerted little effort to make the decision, the deontological action elicited more favorable character ratings
than did the consequentialist action. However, when significant effort was exerted, the difference in character judgment was attenuated (Study 7 and Study 8 - low stress condition) or eliminated (Study 8 - high stress condition). Furthermore, character judgments mediated the relationship between the decision type X effort interaction and moral judgments (Study 7).

In Study 8, I tested whether different varieties of effort - conducting research to gain knowledge versus experiencing emotional and physiological stress - would exert differential effects on moral judgments and character judgments. Stress played little role in predicting moral judgments when research effort was included in the model. However, when predicting character judgments, stress did play a role, interacting with decision type and research effort. Put differently, whereas exerting high effort through research affected both character and moral judgments, high stress affected only character judgments. Taken with the results of the mediation analysis in Study 7, these results suggest that while stress does not exert a direct effect on moral judgments, it does exert an indirect effect through its impact on character judgment.

**Implications**

These data suggest several noteworthy implications. First, while a considerable body of research has assumed that observers take an act-centered perspective, addressing the question “*Is action ‘x’ wrong?*”, when responding to moral dilemmas (Greene et al., 2001; 2004; 2008), the present results suggest that participants simultaneously take a person-centered perspective, answering the question “*What type of person would do action ‘x’?*” (Uhlmann et al., 2015). Based on the mediation results in Study 7, the answer to the second question appears to influence the answer to the first. In all three studies, the difference in moral judgment between two radically different courses of action – killing versus not killing – was eliminated or significantly attenuated when the question “*What type of person would do action ‘x’?*” could plausibly be answered with “*someone who is diligently committed to making the best moral choice.*” This
suggests that the “moral evaluation” node depicted in Figure 1 consists of both evaluations about the act in question and also evaluations about the actor’s character.

In a related vein, Tetlock et al. (2000) provided evidence that actors faced with a tragic trade-off are viewed more favorably when they reached their decision slowly. I extend that line of research by demonstrating a similar effect when the actor was faced with a consequentialist ethical dilemma. Furthermore, Study 8 indicated that distinct types of effort elicit differential perceptions (even when holding deliberation time constant). Whereas exerting high effort to gain knowledge yielded a positive effect on both character and moral judgments, experiencing high stress yielded a positive effect on character judgments only. It appears that different types of effort exert differential influence on different features of the moral judgment calculus.

Secondly, as suggested in Figure 1, information about the actor, namely character information (whether inferred or explicit) appears to represent an additional, potent element in laypeople’s moral judgment calculus. These findings suggest advantages to expanding the Dual Process Model’s emphasis on consequentialist judgments resulting solely from cognitive control. Data across the three studies showed that as the actor’s effort increased moral and character judgments became more favourable. While one may argue that the presence of effort forced participants to engage in more deliberate reasoning, the most straightforward explanation for this effect is that an actor who engages in careful deliberation elicits a stronger positive emotional reaction than an actor who acts quickly. This, in turn, leads to a more positive reaction toward the decision. Note that this explanation suggests an emotional route to a consequentialist judgment that does not square with the Central Tension Principle.

More generally, experiments in the Dual Process Model tradition have used sets of dilemmas with radically different content (everything from runaway trolleys to smothering crying babies), but have generally treated all scenarios as equivalent. The next generation of
research, however, has begun to indicate that perceivers focus on specific features of the scenario, such as the features suggested in Figure 1 (Everett et al., 2016). For example, the studies presented in Chapter 2 used a dilemma involving killing one person to save a group and found that participants’ judgments systematically varied depending on a feature of the beneficiaries, namely their preference for the deontological versus consequentialist option. The data presented here provide additional evidence in this vein suggesting that moral judgments are sensitive to how the actor reached his decision. Thus, mounting evidence suggests that additional content, over and above features of the act and the number of people involved, matter and must be accounted for in a more comprehensive theory of moral judgment.

Third, the Dual-Process Model assumes that, all things being equal, humans find the thought of causing harm aversive. Although I agree with this claim, the data presented here outline a set of conditions in which individuals are more likely to endorse a harmful action. Specifically, participants were more likely to endorse causing harm when the decision was arrived at in an effortful manner. This suggests that future research should focus on the contexts in which the aversion to harm can be moderated.

Lastly, this work has implications for how best to convey consequentialist ideas. Given the documented deontological bias, Kreps and Monin (2014) suggested that consequentialists in leadership positions who need to express their views publically should frame their consequentialist claims in deontological language. The results presented here suggest an additional method: Consequentialists should focus less on the principle behind their claims (e.g., minimizing overall harm) and more on the process they engaged in to arrive at their position (see also Everett et al., 2016).

Limitations and future directions
I suggest that in many moral dilemmas, effort exertion signals a willingness to expend valuable resources to make the morally correct decision. This, in turn, signals that the individual can be trusted (Everett et al., 2016), authentically acknowledges the difficult moral nature of the situation, and represents a commitment to high moral standards. While I consider these reasonable interpretations of the effort manipulation, I did not measure the constructs of trust, authenticity and commitment directly. Moreover, while I assume that these constructs are highly correlated, it may be that trust, authenticity, and commitment are dissociable. Future research should focus on the relationships among trust, perceived authenticity, and commitment and how these constructs, in turn, impact moral judgments and beliefs.

Similarly, as always with mediation approaches, there are likely other indirect relationships between the knowledge of a morally relevant action and moral judgment. Specifically, in the case of euthanasia, Figure 1 suggests that observers likely consider other features of the situation in their moral evaluations. For instance, the wishes of the patient (beneficiary / victim), his or her loved ones (victims), and the stage and severity of the disease (beneficiary / victim). Furthermore, I examined how the actor’s effort expenditure impacted moral evaluations, there are likely other features of the actor that influence moral judgments. The studies presented were simplified to test the specific hypotheses, but future researchers would do well to expand the basic design to examine these questions.

As noted, some researchers have recently called into question whether moral judgments in response to moral dilemmas are indicative of deontological or consequentialist beliefs (Kahane et al., 2015; Kahane, 2012). I have argued that refusing to assist the patient commit suicide is deontological and agreeing to help the patient commit suicide is consequentialist. In support of this categorization, I conducted a pilot study that confirmed that participants perceived refusing to help the patient end their life to be motivated by general deontological beliefs and
agreeing to help a patient end their life to be motivated by general consequentialist beliefs. I do
acknowledge, however, that there exist multiple deontological and consequentialist rationales
that could be used to justify either refusing or agreeing to help the patient. Future research
should focus on testing what affect a diverse range of deontological and consequentialist
rationales may have on moral judgments.

In addition, given that I sacrificed breadth for depth by focusing on a specific moral topic
(euthanasia), I acknowledge that it remains to be demonstrated if the effects hold across a variety
of moral situations. Based on the results of the pilot study, I would expect that the effect would
hold for any situation where participants perceive that a course of action is motivated by
consequentialist beliefs. I do, however, expect that the effect can be readily moderated by
additional features of the situation. For instance, while a slow and diligent response was favored
when dealing with a euthanasia dilemma, there is clear evidence that in some situations, a quick
intuitive response is perceived as morally superior (Critcher et al., 2013). Therefore, future
research should focus on identifying the features of a situation that lead to either a slow or fast
response being perceived as morally superior. Tetlock and colleagues (2000) showed that slow
decision makers were viewed more favorably when faced with a tragic trade-off situation and
less favorably when faced with a taboo trade-off situation. Other features of how events are
perceived are likely to impact how favorably the speed of deliberation is viewed.

Another feature may be ambiguity. Whereas the scenarios used by Critcher et al. (2013)
contained a clear “correct” response (e.g., returning a dropped wallet to its owner), in classic
consequentialist dilemmas – including euthanasia dilemmas – the morally correct response is
inherently ambiguous. Thus, in cases when the morally correct response is clear, a slower
decision – a hesitation to “do the right thing” – may signal deficient moral character. In contrast,
in ambiguous scenarios, a slower decision may signal a sincere, virtuous attempt to “get it right”, whereas a quicker decision may be perceived as comparatively detached or glib.

More generally, such a lay theory may have its roots in the Protestant Work Ethic (PWE), which exalts the virtuousness of effort and toil (Furnham, 1987). Thus, future researchers may do well to examine whether the effects reported here are moderated by endorsement of the PWE, or reduced in cultures without roots in the PWE. In a related vein, at least two decades of studies have demonstrated cultural differences in the tendency to make characterological attributions for all types of actions (morally-relevant or morally-neutral; e.g., Choi & Nisbett, 1998; Morris & Peng, 1994). Thus, future researchers may gain important insights by investigating cultural variation in the findings reported here.

**Conclusion**

The studies in this section indicate that laypeople place a good deal of weight on information that several moral philosophies either do not discuss or consider irrelevant – the actor’s effort. These studies go on to suggest that the reason why people are sensitive to effort is that they believe it represents a window into the actor’s character. As such, these data provide support for the view that moral evaluations are person-centered (Uhlmann, et al., 2015) and that participants are keenly interested in judging not only the act, but the character of the person, as well.
Chapter 5

5 Summary and Conclusions

Greene’s (2014) Central Tension Principle states that deontological judgments are generally reached via emotionality while consequentialist judgments are generally reached through cognitive control. The data presented here challenge that assertion. Data presented in Chapter 2 indicate that there are at least two distinct paths to consequentialist judgments. Consequentialist judgments can result via a cold and callous route characterized by a discomfort with caring for others and less empathy for the individual to be sacrificed. However, consequentialist judgments can also be reached via a warm and caring route characterized by a strong need to belong and empathy for the larger group. Notably, the tendency to follow this route to consequentialism covaried with the strength of an emotion-related trait (attachment anxiety). In addition, the data presented in Chapter 3 suggest that deontological and consequentialist judgments are associated with equivalent levels of overall emotionality; what differs is the specific type of emotionality. Deontological responders used more anger language and consequentialist responders used more sadness language when justifying their moral judgments. These data suggest, contrary to the Central Tension Principle, that there are multiple routes to the consequentialist decision, including emotion-laden routes.

Furthermore, central to the Dual-Process Model is the claim that deontological judgment results from the strong emotional response that is generated by an inherent aversion to causing others harm. The data presented here provide evidence for contexts in which this aversion to harming others can be moderated. In Chapter 2, individuals with a strong need to belong and who empathized with the group were more likely to endorse harming a single individual to save many others. Furthermore, anxiously attached individuals were more willing to harm a single...
individual when it was the will of the group. Based on the results of Chapter 3, participants were more likely to endorse harming a single individual in the service of the group if reviewing such a scenario elicited more sadness. In Chapter 4, participants were more accepting of a doctor who assisted a suicide if his decision was arrived at in an effortful manner. Although, all things being equal, I accept that people are generally averse to causing others harm, the data presented here suggests that this aversion can be readily moderated so that individuals are willing to endorse harmful actions.

In addition, several researchers (Everett et al., 2016; Tannenbaum et al., 2011; Uhlmann et al., 2013) have criticized the moral judgment literature for taking an act-centered approach; assuming that participants are only evaluating the act when making moral judgments. The data presented here support a person-centered model of moral judgment in which participants use information presented in the dilemmas to infer the character of the actor. In Chapter 4, I demonstrated that both consequentialist acts and actors are rated lower than deontological acts and actors. However, this discrepancy is attenuated or eliminated when participants are informed that the decision was made with considerable effort. Furthermore, different types of effort had differential effects. Namely, effort to gain knowledge and information positively influenced both act and character judgments, whereas effort in the form of stress only positively influenced character judgments.

In summary, the data presented here call into question key assumptions made by the Central Tension Principle and the Dual-Process Model more generally. This suggests a more elaborate model is required to fully understand how individual make moral judgments. I wish, however, to make clear that neither the model presented in Figure 1 nor the data presented here refute the Dual-Process Model. What Figure 1 does suggest is that the Dual-Process Model represents a specific case of a larger model: specifically, an event involving an act that violates a
sacred rule (thou shalt not kill) but no other information about the situation (e.g., features of the actor, features of the victims, and features of the beneficiaries) is available to the observer. In other words, the Dual-Process Model provides insight into the specific case when the only information available is about the act and the outcome, but has less to say about cases when additional information is available.

At a more general level, I suggest, consistent with the perspective of Ahn and Cohen (2016), that individuals make the judgment that holds the greatest personal value. The subjectively-computed value varies as a function of the amount and type of information available to the individual at the moment of the decision. Although the Dual-Process Model has provided insight into how features of the act influence moral judgment (Greene et al., 2009), in most moral situations, observers have a much richer set of information to draw on when making personal value calculations. This additional information may attenuate or enhance the influence of the act on subsequent moral judgment. I recommend that the next generation of moral judgment research focus on these types of interactions and seek insight into how different features of the situations interact to influence moral judgments.

5.1 Future Directions

Ahn and Cohen (2016) proposed that individuals seek to maximize personal value when making moral judgments. I extend this line of thinking by specifying several features that go into the calculation of personal value (Figure 1). Each of these nodes provides a wealth of opportunity for future research.

First, results from Chapters 2 and 3 indicated that features of the observer (attachment style, type of emotions elicited by the situation) influence moral judgments. Considering features of the observer offers an excellent opportunity to merge two literatures that have explored human
morality. While research on the Dual-Process model has examined more proximal causes of moral judgments (i.e. the amount of emotionality or cognitive control experienced by an individual when making a judgment), Moral Foundations Theory (Graham et al., 2011; Haidt & Joseph, 2004) and Relationship Regulation Theory (Fiske & Rai, 2015; Rai & Fiske, 2011) have outlined a more distal set of fundamental moral beliefs and motivations that drive moral behavior. It seems likely that a fuller understanding of moral judgment will take into account these types of fundamental moral beliefs. In summary, this approach affords the opportunity to examine the path from more distal foundational moral beliefs to intermediate beliefs and attitudes to proximal moral judgments and action.

Second, results from Chapter 4 provided evidence that features of the actor (exertion to arrive at the decision) influence moral judgment. While other researchers have shown that the speed of a decision (Critcher et al., 2013) and difficulty of a decision (Everett et al., 2016) influence moral judgment, there are likely other features of the actor that could play a role. For instance, Hursthouse (1999) suggests that for an observer to view an action as moral requires not only that the act committed is morally correct but also that the actor experiences the appropriate emotional response. For example, to some observers, the consequentialist decision to harm one person for the greater good will only be seen as moral if the consequentialist actor also feels guilt or regret and/or makes reparations.

Thirdly, results from Chapter 2 demonstrated that features of the beneficiaries (expressed desire regarding the outcome) influence moral judgments. Future research should examine how varying features of the beneficiaries (i.e. moral vs. immoral; likeable vs. unlikeable) influences the likelihood of reaching deontological versus consequentialist judgments.

In addition, while not directly tested in this dissertation, other research has demonstrated that additional variables depicted in Figure 1, such as features of the act, influence moral
judgments. For example, Greene and colleagues (2001, 2009) have shown that moral judgments vary as a function of whether an act involved directly (pushing) or indirectly (flipping a switch) harming an individual. Tetlock and colleagues (2000) have shown that features of the act itself, whether it is tragic or taboo, influence moral judgments.

Furthermore, features of the victim also influence moral judgments. For example, Uhlmann and colleagues (2009) have demonstrated that race and nationality of the actor, patients, and beneficiaries interacts with political orientation to predict deontological/consequentialist judgments. Future researchers should test other features of acts and victims to determine how they influence moral judgments.

**Moral Persuasion and Process**

In addition to gaining a better understanding of how individuals make moral judgments, extending the lines of thought discussed above could provide insight into moral persuasion and effective rhetoric. Research has demonstrated that Moral Foundations Theory can be harnessed to shift political attitudes by framing political policy in moral foundation congruent with political orientation (Day, Fiske, Downing, & Trail, 2014; Feinberg & Willer, 2015; Haidt & Graham, 2007). The model I present in Figure 1 suggests alternative routes. For example, as demonstrated in Chapter 4, providing participants information about the actor’s procedure and motivations shifted moral judgments in a euthanasia scenario. This suggests that persuasion may be achieved not only by harnessing information about high level foundational moral beliefs, but by providing more proximal information regarding the actor’s decision-making procedure.

The model in Figure 1 provides insight into the type of information that might influence moral judgments. An extension of this approach would be to explore the process individuals engage in to arrive at their moral judgment. For instance, imagine being given a scenario with an
imperfect amount of information but with the opportunity to do some investigating to learn more about the situation and people involved. What types of information do people actively seek out? Another question for future research is how long do individuals persist in their information search before rendering their verdict? What individual differences variables predict these differential processes and what features of the situation alter the processes people engage in? Do different investigating styles lead to qualitatively different conclusions? Shifting the research question away from the decisions individuals make to the process they engage in may provide deeper insights into the workings of the moral mind.

In summary, while the Dual-Process Model has provided significant insight into how individuals make moral judgments, the evidence cited and presented here suggests that the model represents an insufficient characterization of the types of moral judgments people make. Understanding moral judgments will ultimately require examination of the complex dynamics between observer attributes and features of the situation.

5.2 Limitations

Figure 1 proposes a fairly elaborate model of moral judgments. While other research supports some of the paths depicted in the model, the research presented here only tests a subset of these paths. Furthermore, each of the nodes depicted in Figure 1 can be operationalized in multiple ways. I have only examined one type of observer attribute (attachment style), one type of features of the actor (actors effort/stress), and one type of features of the beneficiaries (desires of the group). Therefore, a considerable amount of research is needed to continue to probe this model.
In addition, while Figure 1 sets out a simple path structure, I expect that the relationships among variables in this model will be much more complex. It seems likely that different features of the situation will interact to influence moral judgments. For instance, one can imagine that features of the act will have a differential impact on moral judgments if the potential victims are outgroup members and the potential beneficiaries are ingroup members compared to when victims are ingroup members and beneficiaries are outgroup members. This interaction might, in turn, be modified by the degree to which an observer identifies with all of humanity. In sum, more work is needed not only to understand the nature of the different features of the situation, but to understand the dynamics at play among the different nodes in the model.

One criticism often levied against the moral judgment literature is that it tells us very little about how an individual will behave in a moral situation. For the research presented here, it is true that I cannot speak to the relationship between moral judgment and moral action. For instance, I cannot conclude that because someone indicated that they would be willing to kill to save others, that they would actually do so in real life. While this criticism has merit, it is important to note that much of the moralizing we do is not in the form of moral action, but in the form of discussing and thinking about moral scenarios we have heard about via the news and our through social interactions. These types of activities are directly analogous to the experimental paradigms I have utilized in which people read a vignette and then evaluate the action. Furthermore, the process of evaluating moral scenarios has significant impact. Judges and juries are engaging in this process. People are engaging in this process when deciding who to vote for in political elections. In sum, while understanding what types of moral actions people engage in is undoubtedly important, understanding the psychological mechanisms involved when evaluating more abstract moral situations also has the potential for significant real-world impact.
Finally, some researchers have been critical of the use of the labels consequentialist and deontological for responses to the types of dilemmas I have utilized (Kahane, 2012, 2015; Kahane et al., 2015). In short, these researchers claim the so called ‘consequentialist’ judgments to the type of dilemma used ubiquitously in the literature do not reflect the type of impartiality and self-sacrifice required by consequentialist philosophy. A similar case can be made for ‘deontological’ judgments. For the most part I agree with these objections. This is why in Chapter 4 I took steps to demonstrate that participants felt the ‘consequentialist’ action was indeed motivated by consequentialist beliefs and the ‘deontological’ action was motivated by deontological beliefs. Nonetheless, my results cannot speak to whether participants’ judgments reflect adherence to the consequentialism of John Stuart Mill (1861/2007) or the deontology of Immanuel Kant (1785/1949). The data only support the more modest claim that ‘consequentialist’ judgments reflect a willingness to violate a rule in order to achieve some larger good and that ‘deontological’ judgments reflect a desire to avoid causing harm even if some larger good could be achieved.

With these limitations in mind the research here provides some small, incremental, insights into how individuals’ make moral judgments. Many questions remain to be answered before we have a full understanding of how individuals deal with ethical dilemmas. Understanding how people make moral judgments and understanding human moral psychology more generally is crucial. It is only once we have knowledge of these processes that we will be able to fully cultivate the better angels of our nature.
Figures

Figure 1

Individual Differences & Motivations of an observer

Features of the situation

Moral Evaluation

Features of the ACT

Features of the Agent(s) (Actor)

Features of the Patient(s) (Victim)

Features of the Beneficiaries

Observer’s Dispositional attributes, attitudes, and values

Moral Evaluation
Figure 2

![Diagram showing relationships between variables such as Need to Belong, Group Empathy, Anxious Attachment, Avoidant Attachment, Discomfort with Caregiving, Wrongness Ratings, and Victim Empathy. The diagram includes arrows indicating the direction of relationships and correlation coefficients.]

*p < 0.05, **p < 0.01, ***p < 0.001
Figure 3

![Diagram showing correlations between Need to Belong, Group Empathy, Anxious Attachment, Avoidant Attachment, Discomfort with Caregiving, and Victim Empathy.](image)

* *p < 0.05, **p < 0.01, ***p < 0.001*
Figure 4

- Need to Belong → Group Empathy (0.13)
- Anxious Attachment → Need to Belong (0.79***)
- Anxious Attachment → Victim Empathy (0.41***)
- Avoidant Attachment → Discomfort with Caregiving (0.53***)
- Discomfort with Caregiving → Victim Empathy (0.31***)
- Group Empathy → Wrongness Ratings (0.36***)
- Wrongness Ratings → Discomfort with Caregiving (0.09*)

*p < 0.05, **p < 0.01, ***p < 0.001
Figure 5

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Figure 6

Endorsement of Consequentialist Action

Attachment Anxiety
Figure 7

[Graph showing the relationship between Attachment Avoidance and Endorsement of Consequentialist Action. The graph compares four conditions: Consequentialist Consensus, Control, and Deontological Consensus, with levels ranging from Low to High.]
Figure 8
Figure 10
Figure 11
Figure 12

![Bar chart showing Moral Judgment Index for Consequentialist Action and Deontological Action under Low Effort and High Effort conditions. The chart indicates higher Moral Judgment Index for High Effort compared to Low Effort for both action types.](chart.png)
Figure 13

- Moral Judgment Index
- Consequentialist Action
- Deontological Action

Low Effort vs. High Effort
Figure 14

![Graph showing the comparison of Character Judgment Index between Low Effort and High Effort scenarios. The graph displays two bars for each effort level, one representing Consequentailist Action (red) and the other Deontological Action (gray). The y-axis represents the Character Judgment Index ranging from 55 to 85. The x-axis indicates Low Effort and High Effort. The error bars indicate variability in the data.]
Figure 15
Figure 16

![Graph showing the relationship between Moral Judgment Index and Research level. The graph compares Consequentialist Action and Deontological Action. The x-axis represents Low Research and High Research, while the y-axis represents Moral Judgment Index. The graph shows a trend where Moral Judgment Index increases with increasing Research level for both Consequentialist and Deontological Actions.](image-url)
Figure 17

**Low Stress**

Character Judgment Index

- Consequentialist Action
- Deontological Action

**High Stress**

Character Judgment Index

- Consequentialist Action
- Deontological Action
Tables

Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wrongness Ratings</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Anxious Attachment</td>
<td>-.16**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Avoidant Attachment</td>
<td>-.11**</td>
<td>.47**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Deontological Beliefs</td>
<td>.43**</td>
<td>.01</td>
<td>-.14**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Utilitarian Beliefs</td>
<td>-.19**</td>
<td>.21**</td>
<td>.16**</td>
<td>-.14**</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Empathic Concern</td>
<td>.29**</td>
<td>-.06*</td>
<td>-.32**</td>
<td>.3**</td>
<td>-.31**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Neuroticism</td>
<td>-.07*</td>
<td>.67**</td>
<td>.38**</td>
<td>-.001</td>
<td>.12**</td>
<td>-.06*</td>
<td>-</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Note: Increased wrongness ratings indicate a stronger deontological moral judgment.
Table 2

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wrongness rating</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Anxious attachment</td>
<td>-.14**</td>
<td>-.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Avoidant attachment</td>
<td>-.19**</td>
<td>.4**</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Need to belong</td>
<td>-.01</td>
<td>.59**</td>
<td>-.18*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Discomfort with caregiving</td>
<td>-.2**</td>
<td>.21**</td>
<td>.36**</td>
<td>-.05</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Empathy for the victim</td>
<td>.43**</td>
<td>-.05</td>
<td>-.17**</td>
<td>.07</td>
<td>-.34**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>7. Empathy for the group</td>
<td>-.41**</td>
<td>.11*</td>
<td>.05</td>
<td>.12*</td>
<td>-.07</td>
<td>.02</td>
<td>-</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

Note: Increased wrongness ratings indicate a stronger deontological moral judgment.
### Table 3

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wrongness rating</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Anxious attachment</td>
<td>-.18**</td>
<td>-.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Avoidant attachment</td>
<td>-.15**</td>
<td>.39**</td>
<td>-.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Need to belong</td>
<td>-.08</td>
<td>.61**</td>
<td>-.16*</td>
<td>-.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Discomfort with caregiving</td>
<td>-.19**</td>
<td>.22**</td>
<td>.41**</td>
<td>-.08</td>
<td>-.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Empathy for the victim</td>
<td>.51**</td>
<td>-.08</td>
<td>-.16**</td>
<td>.08</td>
<td>-.3**</td>
<td>-.</td>
<td></td>
</tr>
<tr>
<td>7. Empathy for the entire group</td>
<td>-.31**</td>
<td>.1*</td>
<td>.03</td>
<td>.14*</td>
<td>-.12*</td>
<td>.13**</td>
<td>-.</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

*Note: Increased wrongness ratings indicate a stronger deontological moral judgment.*
<table>
<thead>
<tr>
<th>Predictors</th>
<th>Equation 1 (Y = MJ)</th>
<th>Equation 2 (Y = CJ)</th>
<th>Equation 3 (Y = MJ)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>t</td>
<td>b</td>
</tr>
<tr>
<td>X: Decision Type</td>
<td>-5.45</td>
<td>6.19***</td>
<td>-3.66</td>
</tr>
<tr>
<td>MO: Effort</td>
<td>5.28</td>
<td>11.08***</td>
<td>2.6</td>
</tr>
<tr>
<td>X*MO</td>
<td>1.66</td>
<td>3.48***</td>
<td>1.35</td>
</tr>
<tr>
<td>ME1: Between-Subject Character</td>
<td>0.92</td>
<td>47.07***</td>
<td></td>
</tr>
<tr>
<td>ME2: Within-Subject Character</td>
<td>0.58</td>
<td>13.26***</td>
<td></td>
</tr>
<tr>
<td>ME1*MO</td>
<td>0.06</td>
<td>4.563***</td>
<td></td>
</tr>
<tr>
<td>ME2*MO</td>
<td>0.02</td>
<td>0.24 ns</td>
<td></td>
</tr>
</tbody>
</table>

MJ = Moral Judgments; CJ = Character Juégements; X = independent variable; MO = Moderating Variable; ME1 = Mediator 1; ME2 = Mediator 2.
*p < .05,  ** p < .01,  *** p < .001,  **** p < .0001
Table 5

<table>
<thead>
<tr>
<th>Item</th>
<th>M</th>
<th>95% CI</th>
<th>M</th>
<th>95% CI</th>
<th>M</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Effort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Effort</td>
<td>2.95</td>
<td>2.72</td>
<td>3.18</td>
<td>3.02</td>
<td>3.27</td>
<td>3.17</td>
</tr>
<tr>
<td>Psychological Effort</td>
<td>5.51</td>
<td>5.34</td>
<td>5.72</td>
<td>5.62</td>
<td>5.77</td>
<td>5.67</td>
</tr>
<tr>
<td>Emotional Effort</td>
<td>5.54</td>
<td>5.36</td>
<td>5.72</td>
<td>5.62</td>
<td>5.79</td>
<td>5.65</td>
</tr>
<tr>
<td><strong>Suffering</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Suffering</td>
<td>2.96</td>
<td>2.74</td>
<td>3.18</td>
<td>2.80</td>
<td>2.59</td>
<td>3.01</td>
</tr>
<tr>
<td>Psychological Suffering</td>
<td>5.27</td>
<td>5.07</td>
<td>5.47</td>
<td>5.17</td>
<td>4.97</td>
<td>5.37</td>
</tr>
<tr>
<td>Emotional Suffering</td>
<td>5.21</td>
<td>5.01</td>
<td>5.41</td>
<td>5.20</td>
<td>5.01</td>
<td>5.39</td>
</tr>
<tr>
<td>Stress</td>
<td>5.65</td>
<td>5.46</td>
<td>5.84</td>
<td>5.74</td>
<td>5.58</td>
<td>5.90</td>
</tr>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge Gained</td>
<td>3.85</td>
<td>3.62</td>
<td>4.08</td>
<td>5.94</td>
<td>5.79</td>
<td>6.09</td>
</tr>
<tr>
<td>Research</td>
<td>4.09</td>
<td>3.87</td>
<td>4.31</td>
<td>6.40</td>
<td>6.28</td>
<td>6.52</td>
</tr>
</tbody>
</table>
Endnotes

1. Figure 1, while using the path model diagram features, is not meant to be interpreted as a path diagram. Links between nodes should be thought of as general relationships and could reflect either mediation or moderation processes. Furthermore, for the sake of clarity, no connections are depicted between ‘features of the situation’ nodes. However, I do hypothesize that dynamic relationships between these variables exist. In summary, although Figure 1 generally depicts the model I have in mind, the model also entails considerably more complexity than is shown.

2. Appendix J presents the results of Study 5 including the 7 participants who made zero consequentialist judgments. These results are analogous to, and do not alter the interpretation of the results presented in Chapter 3.

3. I acknowledge that a deontological argument could be made in favor of physician-assisted suicide and a consequentialist argument could be made against physician-assisted suicide. However, my goal was not to make philosophical claims about normative justifications for euthanasia. Instead, my goal was to better understand how individuals make moral judgments by utilizing a real-life moral dilemma in which lay individuals intuit that one course of action is motivated by deontological beliefs and the other is motivated by consequentialist beliefs. Furthermore, I provide evidence supporting the claim that participants do believe that doctor-assisted suicide is motivated by consequentialist beliefs and refusing to perform doctor-assisted suicide is motivated by deontological beliefs.
References


Clithero, J. A., & Rangel, A. (2013). Informatic parcellation of the network involved in the


Dore, B., Ort, L., Braverman, O., & Ochsner, K. N. (2015). Sadness Shifts to Anxiety Over Time and Distance From the National Tragedy in Newtown, Connecticut. *Psychological Science,*


Joel, S., MacDonald, G., & Plaks, J. E. (2012). Attachment Anxiety Uniquely Predicts Regret


within daily interactions with romantic partners. *Journal of Experimental Social Psychology, 44,* 95–104.


chooses-a-dignified-death-in-switzerland


## Appendices

### Appendix A. Pretesting Dilemma Summary

<table>
<thead>
<tr>
<th>Name</th>
<th>Dilemmas as they appeared to participants</th>
<th>%Consequentialist Judgment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin Deficiency</td>
<td>You are the leader of a mountaineering expedition that is stranded in the wilderness. Your expedition includes a family of six that has a genetically caused vitamin deficiency. A few people’s kidneys contain large amounts of this vitamin. There is one such person in your party. The only way to save the lives of the six members of this family is to remove one of this man’s kidneys so that the necessary vitamins may be extracted from it. The man will not die if you do this, but his health will be compromised. The man is opposed to this plan, but you have the power to do as you see fit. How wrong would it be for you to forcibly remove the man's kidney in order to save the lives of the six vitamin-deficient people?</td>
<td>35%</td>
</tr>
<tr>
<td>Lifeboat</td>
<td>You are on a cruise ship when there is a fire on board, and the ship has to be abandoned. The lifeboats are carrying many more people than they were designed to carry. The lifeboat you’re in is sitting dangerously low in the water—a few inches lower and it will sink. The seas start to get rough, and the boat begins to fill with water. If nothing is done it will sink before the rescue boats arrive and everyone on board will die. However, there is an injured person who will not survive in any case. If you throw that person overboard the boat will stay afloat and the remaining passengers will be saved. How wrong would it be for you to throw the injured person overboard in order to save the lives of the remaining passengers on the lifeboat?</td>
<td>71%</td>
</tr>
<tr>
<td>Sacrifice</td>
<td>You, your spouse, and your four children are crossing a mountain range on your return journey to your homeland. You have inadvertently set up camp on a local clan’s sacred burial ground. The leader of the clan says that according to the local laws, you and your family must be put to death. However, he will let yourself, your spouse, and your three other children live if you yourself will kill your oldest child. How wrong would it be for you to kill your oldest child in order to save your spouse and your other three children?</td>
<td>51%</td>
</tr>
<tr>
<td>Sophie's Choice</td>
<td>It is wartime and you and your two children, ages eight and five, are living in a territory that has been occupied by the enemy. At the enemy’s headquarters is a doctor who performs painful experiments on humans that inevitably lead to death. He intends to perform experiments on one of your children, but he will allow you to choose which of your children will be experimented upon. You have twenty-four hours to bring one of your children to his laboratory. If you refuse to bring one of your children to his laboratory he will find them both and experiment on both of them. How wrong would it be for you to bring one of your children to the laboratory in order to avoid having both of them die?</td>
<td>62%</td>
</tr>
<tr>
<td>Euthanasia</td>
<td>You are the leader of a small group of soldiers. You are on your way back from a completed mission deep in enemy territory when one of your men has stepped in a trap that has been set by the enemy and is badly injured. The trap is connected to a radio device that by now has alerted the enemy to your presence. They will soon be on their way. If the enemy finds your injured man they will torture him and kill him. He begs you not to leave him behind, but if you try to take him with you your entire group will be captured. The only way to prevent this injured soldier from being tortured is to shoot him yourself. How wrong would it be for you to shoot this soldier in order to prevent him from being tortured by the enemy?</td>
<td>63%</td>
</tr>
<tr>
<td>Crying Baby</td>
<td>Enemy soldiers have taken over your village. They have orders to kill all remaining civilians. You and some of your townspeople have sought refuge in the cellar of a large house. Outside you hear the voices of soldiers who have come to search the house for valuables. Your baby begins to cry loudly. You cover his mouth to block the sound. If you remove your hand from his mouth his crying will summon the attention of the soldiers who will kill you, your child, and the others hiding out in the cellar. To save yourself and the others you must smother your child to death. How wrong would it be for you to smother your child in order to save yourself and the other townspeople?</td>
<td>60%</td>
</tr>
</tbody>
</table>
### Appendix B - Study 1 Dilemmas
See Appendix A for Vitamin, Sophie’s Choice, Crying Baby dilemmas

<table>
<thead>
<tr>
<th>Name</th>
<th>Dilemmas as they appeared to participants</th>
<th>%Consequentialist Judgment</th>
</tr>
</thead>
</table>
| **Nuclear Reactor**| You are the inspector of a nuclear power plant that you suspect has not met its safety requirements. The plant foreman and you are touring the facility when one of the nuclear fuel rods overheats. The emergency coolant system fails to activate, and a chain reaction is about to begin which will result in a nuclear meltdown.  
This will release lethal radiation into the nearby town, killing thousands of people.  
You realize that the only way to stop the meltdown is to push the foreman into the fuel rod assembly.  
This will remove just enough heat energy from the rod assembly to prevent the nuclear chain reaction. However, it will also incinerate the foreman instantly.  
How wrong would it be to push the foreman into the fuel rod assembly in order to save the people in the nearby town? | 50% |
| **Modified Vaccine**| A viral epidemic has spread across the globe killing thousands of people. You are a medical researcher and have developed two substances in your laboratory. You know that one of them is a vaccine, but you don’t know which because both of the vials have been mislabeled as vaccine.  
You also know that the other substance is deadly. Once you figure out which substance is the vaccine you can create more to save thousands of lives. You have two lab assistants who work with you, and the only way to identify the vaccine with certainty is to inject the two substances into these people against their wishes.  
One person will live, the other will die, and you will be able to start saving lives with your vaccine.  
How wrong would it be to administer the two vaccines to the lab assistants in order to find the cure for the spreading epidemic? | 55.7% |
| **Nobel Prize**    | You and a fellow researcher have discovered a powerful new energy source that is cheap, safe, and clean. You realize that this could lead to the elimination of pollution and poverty around the world.  
However, your colleague wants to sell this discovery.  
You know your colleague well enough to know that he will sell the discovery to the highest bidder at the first opportunity. You know that he plans to contact the potential buyers today, some of whom will certainly try to use this as a horrible weapon.  
The only way that you can prevent him from doing so is to poison him with an extremely deadly chemical normally found in the lab working on these types of projects.  
Everyone will think that it was just a lab accident, and the discovery will not be sold to those who might create a weapon out of it.  
How wrong would it be for you to poison your colleague in order to prevent your discovery from being turned into a horrible weapon? | 40% |
## Appendix C - Study 3 dilemmas

<table>
<thead>
<tr>
<th>Dilemma Main Body</th>
<th>Deontological Consensus</th>
<th>Consequentialist Consensus</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are the leader of a mountaineering expedition that is stranded in the wilderness. Your expedition includes a family of six that has a genetically caused vitamin deficiency. A few people’s kidneys contain large amounts of this vitamin. There is one such person in your party. The only way to save the lives of the six members of this family is to remove one of this man’s kidneys so that the necessary vitamins may be extracted from it. The man will not die if you do this, but his health will be compromised.</td>
<td>You discuss the situation with the six vitamin-deficient family members. The family members all agree that removing the man’s kidney is the wrong thing to do. They tell you that they would feel very upset if you were to commit this act in order to save their lives. The man is opposed to having his kidney removed, but you have the power to do as you see fit.</td>
<td>You discuss the situation with the six vitamin-deficient family members. The family members all agree that removing the man’s kidney is the right thing to do. They tell you that they would feel very grateful if you were to commit this act in order to save their lives. The man is opposed to having his kidney removed, but you have the power to do as you see fit.</td>
<td>The man is opposed to this plan, but you have the power to do as you see fit.</td>
</tr>
</tbody>
</table>
Appendix D – Dilemmas Study 4

Sophie’s Choice

It is wartime and you and your two children, ages eight and five, are living in a territory that has been occupied by the enemy. At the enemy’s headquarters is a doctor who performs painful experiments on humans that inevitably lead to death.

He intends to perform experiments on one of your children, but he will allow you to choose which of your children will be experimented upon. You have twenty-four hours to bring one of your children to his laboratory. If you refuse to bring one of your children to his laboratory he will find them both and experiment on both of them.

What would you do if you were in this situation?

a) I WOULD bring one of my children to the laboratory

b) I WOULD NOT bring of my children to the laboratory

Nuclear Reactor

You are the inspector of a nuclear power plant that you suspect has not met its safety requirements. The plant foreman and you are touring the facility when one of the nuclear fuel rods overheats. The emergency coolant system fails to activate, and a chain reaction is about to begin which will result in a nuclear meltdown. This will release lethal radiation into the nearby town, killing thousands of people.

You realize that the only way to stop the meltdown is to push the foreman into the fuel rod assembly. This will remove just enough heat energy from the rod assembly to prevent the nuclear chain reaction. However, it will also incinerate the foreman instantly.

What would you do if you were in this situation?

a) I WOULD push the foreman into the fuel rod assembly.

b) I WOULD NOT push the foreman into the fuel rod assembly.
Appendix E – Dilemmas Study 5

**Euthanasia**

**Audio**

You are treating a patient with terminal cancer. The patient is in extreme pain and the medications available are no longer helping. You know that at the speed the cancer is spreading the patient could live for several years living each day in agony.

One day the patient tells you that he would rather die than continuing to live with the terrible pain. The patient asks for your help to end his life with a lethal injection.

The request causes you great emotional distress. On the one hand, you don’t want your patient to continue to live in pain. On the other hand, you know that killing a patient is wrong.

What is the morally correct thing to do?

**Response Screen**

If you were in this situation what would you do?

a) Help the patient to die  
b) Refuse to help the patient die

**Researcher:**

**Audio**

You are a research assistant at a leading medical institute under the supervision of one of the leading scientists in the world looking for a cure for a terminal disease that kills thousands of people a year. This brilliant scientist has been awarded massive amounts of funding, from taxpayers, through the national government which has made finding a cure for this terrible disease a national priority.

The most recent sets of results have led to a series of breakthroughs and the scientist is extremely confident that he is one or two steps away from being able to manufacture a drug that will cure the disease.

One day you are helping with some of the accounting when you notice some inconsistencies in the numbers. Digging deeper you discover that the scientist has been skimming money from the grants meant to fund the research and is instead using the money to subsidize a lavish and extravagant lifestyle. If the authorities found out what was happening the lab’s funding would be cut off immediately, the scientist would be sent to prison, and the work of finding a cure would come to a halt.

The whole situation causes you a great deal of emotional distress. You know that this type of fraud is wrong and should be immediately reported to the authorities. On the other hand, if the research is allowed to continue it is likely that a cure will be discovered soon.
What is the morally correct thing to do?

Response Screen

If you were in this situation what would you do?

a) Report the scientist’s fraud
b) Don’t report the scientist’s fraud

Commander-in-Chief:

Audio

You are the President of a military superpower with a large and powerful military. For months a radical terrorist group has begun taking over land in a country half-way around the world. This terrorist group employs brutal and ruthless tactics and has managed to occupy a considerable piece of land. The international community has pleaded with you to help put an end to this terrible situation through a military intervention.

Intelligence operatives have learned that the terrorist group is planning to expand their territory and will soon launch a new offensive. There is no doubt that the terrorist’s new campaign will result in the deaths of hundreds or thousands of innocent civilians. However, intelligence has also learned the location of the terrorist organizations weapons stockpile and the location of the groups top leaders. If the terrorist groups weapons were destroyed and their leaders killed this would put an end to the terrorist threat.

With this information, a drone bombing mission could be launched that would destroy the terrorist groups weapons and its leadership. However, Intelligence has also reported that the location of the weapons stockpile and the terrorist leaders is also were several dozen innocent civilians are being held prisoner. There is no way to destroy the weapons stockpile and eliminate the terrorist leaders without killing the innocent civilian prisoners.

The whole situation causes you a great deal of distress. You know that if the terrorist group is not stopped immediately hundreds if not thousands of innocent civilians will be killed. On the other hand, you know that if the bombing mission goes ahead you will be responsible for killing the innocent civilians being held prisoner by the terrorists.

What is the morally correct thing to do?

Response Screen

If you were in this situation what would you do?

a) Launch the drone bombing mission
b) Don’t launch the drone bombing mission
Appendix F: Dilemmas (Pilot Study, Study 6, Study 7)

**Main Body of Dilemma**

Dr. Thomas is treating a patient with terminal cancer. The patient is in extreme pain and the medications available are no longer helping. Dr. Thomas knows that at the speed the cancer is spreading the patient could live for several years living each day in agony.

One day the patient tells Dr. Thomas that he would rather die than continuing to live with the terrible pain. The patient asks for the doctor’s help to end his life with a lethal injection.

Dr. Thomas must decide what to do. On the one hand, he doesn’t want his patient to continue to live in pain. On the other hand, he knows that killing a patient is wrong.

**Text By Condition**

<table>
<thead>
<tr>
<th>High Effort</th>
<th>Low Effort</th>
</tr>
</thead>
<tbody>
<tr>
<td>To figure out the morally correct thing to do, Dr. Thomas does extensive research, reading several books on the issue, meeting with families that have dealt with similar situations, consulting with religious leaders, philosophers, and scientists. After a month of deliberation Dr. Thomas…</td>
<td>To figure out the morally correct thing to do, Dr. Thomas begins to think. After a few moments of deliberation Dr. Thomas…</td>
</tr>
</tbody>
</table>
Appendix G: Character Items (Studies 7 & 8)

1) I think Dr. Thomas has entirely good moral principles.

2) I think Dr. Thomas has good moral standards.

3) I think that deep down Dr. Thomas has the moral principles and knowledge to do the right thing.

4) I think Dr. Thomas is an extremely moral person.

5) I think Dr. Thomas is an extremely ethical person.

6) I think Dr. Thomas is an extremely morally good person.
Appendix H: Dilemma Study 8

Main Body of Dilemma

Dr. Thomas is treating a patient with terminal cancer. The patient is in extreme pain and the medications available are no longer helping. Dr. Thomas knows that at the speed the cancer is spreading the patient could live for several years living each day in agony.

One day the patient tells Dr. Thomas that he would rather die than continuing to live with the terrible pain. The patient asks for the doctor’s help to end his life with a lethal injection.

Dr. Thomas must decide what to do. On the one hand, he doesn’t want his patient to continue to live in pain. On the other hand, he knows that killing a patient is wrong.

<table>
<thead>
<tr>
<th>RESEARCH</th>
<th>Absent</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absent</td>
<td>After a month of deliberation Dr. Thomas…</td>
<td>While deciding what action to take Dr. Thomas experienced extreme stress. This caused Dr. Thomas to develop dangerously high blood pressure, hypertension, and extremely painful stomach ulcers. After a month of deliberation Dr. Thomas…</td>
</tr>
<tr>
<td>Present</td>
<td>While deciding what action to take Dr. Thomas did extensive research, reading several books on the issue, meeting with families that have dealt with similar situations, consulting with religious leaders, philosophers, and scientists. After a month of careful deliberation Dr. Thomas…</td>
<td>While deciding what action to take Dr. Thomas did extensive research, reading several books on the issue, meeting with families that have dealt with similar situations, consulting with religious leaders, philosophers, and scientists. During this period of time Dr. Thomas experienced extreme stress. This caused Dr. Thomas to develop dangerously high blood pressure, hypertension, and extremely painful stomach ulcers. After a month of careful deliberation Dr. Thomas…</td>
</tr>
</tbody>
</table>
**Appendix I: Manipulation check items (Study 8)**

1) Dr. Thomas exerted extreme physical effort when deciding what action to take.

2) Dr. Thomas exerted extreme psychological effort when deciding what action to take.

3) Dr. Thomas exerted extreme emotional effort when deciding what action to take.

4) Dr. Thomas experienced extreme physical suffering when deciding what action to take.

5) Dr. Thomas experienced extreme psychological suffering when deciding what action to take.

6) Dr. Thomas experienced extreme emotional suffering when deciding what action to take.

7) Dr. Thomas experienced extreme stress when deciding what action to take.

8) In dealing with this situation, Dr. Thomas gained a large amount of knowledge.

9) Dr. Thomas conducted a large amount of research when deciding what action to take.
Appendix J - Analysis including 7 excluded participants from Study 5

The results presented here include the 7 participants who made zero consequentialist judgments and were excluded from the analysis in Chapter 3. Inclusion of these participants did not affect the relationship between consequentialist responses and the three different measures of general affect (general affect = “affect”; positive emotions = “posemo”; negative emotions = “negemo”). Results revealed no significant effect of number of consequentialist response on general affect, $F(2, 118) = .07, p = .98, \eta^2 < .01$, positive emotion, $F(2, 118) = .36, p = .78, \eta^2 < .01$, or negative emotion, $F(2, 118) = .31, p = .82, \eta^2 < .01$.

Next, I re-ran the repeated-measures ANOVA with the 7 previously excluded participants. The within-subject variable was the type of emotion language (anxiety, anger, and sadness). The between-subject variable was number of consequentialist responses. The analysis revealed the same effects observed Chapter 3. A significant main effect of emotion type, $F(2, 236) = 4.25, p < .05, \eta^2 = .03$, and a significant emotion type X response interaction, $F(6, 236) = 2.17, p < .05, \eta^2 = .05$ (see Figure 10a). There was no significant main effect of response, $F(3, 118) = .26, p = .86, \eta^2 < .01$.

Probing the simple effects revealed a similar pattern of results as those seen in Chapter 3. Participants who made zero consequentialist judgments used the same amount of anxiety language ($M=.32, SE=.18$) as those that made one consequentialist judgment ($M=.49, SE=.08$), $t(118) = .88, p = .38, d = .36$, two consequentialist judgments ($M=.49, SE=.07$), $t(118) = .85, p = .39, d = .35$, or three consequentialist judgments ($M=.51, SE=.08$), $t(118) = .93, p = .35, d = .38$. There was also no difference in the use of anxiety related language between those who made one or two consequentialist judgments, $t(118) = .08, p = .94, d = .02$, one or three consequentialist
judgments, $t(118) = .09, p = .93, d = .02$, and two or three consequentialist judgments, $t(118) = .17, p = .86, d = .04$

**Figure 10a**

Furthermore, participants who made zero consequentialist judgments used the same amount of anger language ($M=.86, SE=.24$) as those that made one consequentialist judgment ($M=.95, SE=.11$), $t(118) = .36, p = .72, d = .15$, two consequentialist judgments ($M=.84, SE=.09$), $t(118) = .07, p = .94, d = .03$, or three consequentialist judgments ($M=.69, SE=.11$), $t(118) = .62, p = .53, d = .26$. There was also no difference in the use of anger related language between those who made one or two consequentialist judgments, $t(118) = .79, p = .43, d = .18$, one or three consequentialist judgments, $t(118) = 1.70, p = .09, d = .41$, and two or three consequentialist judgments, $t(118) = 1.03, p = .31, d = .23$.
In addition, participants who made zero consequentialist judgments used the same amount of sadness language ($M= .24, SE= .14$) as those that made one consequentialist judgment ($M= .27, SE= .06$), $t(118) = .17, p = .86, d = .07$, or two consequentialist judgments ($M= .42, SE= .05$), $t(118) = 1.19, p = .23, d = .48$, and significantly less sadness language compared to participants that made three consequentialist judgments ($M= .57, SE= .06$), $t(118) = 2.13, p < .05, d = .88$. There was no difference in the use of sadness related language between those who made one or two consequentialist judgments, $t(118) = 1.83, p = .07, d = .41$, however participants who made one consequentialist judgment used significantly less sadness language than participants who made three consequentialist judgments, $t(118) = 3.37, p < .01, d = .81$. There was no difference in the use of sadness language between those who made two or three consequentialist judgments, $t(118) = 1.86, p = .08, d = .42$.

Looking with each group, participants who made zero consequentialist judgments used significantly more anger- ($M= .85, SE= .24$), $t(236) = 2.15, p < .05, d = .43$, and equal amounts of sadness- ($M= .24, SE= .14$), $t(236) = .39, p = .70, d = .16$ related language than anxiety-related language ($M= .32, SE= .18$). Participants who made zero consequentialist judgments used significantly more anger than sadness language, $t(236) = 2.12, p < .05, d = 1.11$.

Participants who made a single consequentialist response used significantly more anger- ($M= .95, SE= .11$), $t(236) = 4.05, p < .001, d = .85$, and significantly less sadness- ($M= .27, SE= .06$), $t(236) = 2.45, p < .05, d = .54$ related language than anxiety-related language ($M= .50, SE= .08$). Participants who made a single consequentialist response used significantly more anger than sadness language, $t(236) = 5.24, p < .001, d = 1.24$.

Participants who made two consequentialist responses used significantly more anger- ($M= .84, SE= .09$), $t(236) = 3.64, p < .001, d = .69$, and an equal amount of sadness- ($M= .42$,
$SE=.05), t(236) = .83, p = .45, d = .15$ related language than anxiety-related language ($M=.49, SE=.07$). Participants who made a two consequentialist responses used significantly more anger than sadness language, $t(236) = 3.71, p < .001, d = .84$.

Participants who made three consequentialist responses used equal amounts of anger- ($M=.70, SE=.11), t(236) = 1.64, p = .10, d = .26, and sadness- ($M=.57, SE=.06), t(236) = .68, p = .50, d = .15$ related language than anxiety-related language ($M=.51, SE=.08$). Participants who made a two consequentialist responses used equivalent amounts of anger and sadness language, $t(236) = .92, p = .36, d = .23$.

We also tested whether participants who made fewer consequentialist judgments (reflecting stronger deontological beliefs) would exhibit a larger ratio of anger to sadness related language than those who made more consequentialist judgments. We re-ran an ANOVA using the number of consequentialist responses to predict the anger – sadness difference score while controlling for word count including the seven previously excluded participants.

Results revealed a significant effect of number of consequentialist responses on the anger – sadness difference score, $F(3, 117) = 3.36, p < .05, \eta^2 = .07$ (see Figure 11a). Analysis of the simple effects revealed no significant difference on the anger – sadness ratio between participants who made zero consequentialist judgments ($M=.66, SE=.29$) and those who made one consequentialist judgment ($M=.68, SE=.13), t(117) = .07, p = .95, d = .03$, two consequentialist judgments ($M=.42, SE=.11), t(117) = .79, p = .43, d = .32$, and a marginally larger ratio compared to participants that made three consequentialist judgments ($M=.12, SE=.13), t(117) = 1.71, p = .09, d = .71$. Examination of Figure 11a shows that despite the ratio of anger-sadness being of a similar magnitude for participants who made zero or one consequentialist judgment, the error around the estimate for participants who made zero
consequentialist judgments is much larger. This is due to the small number of participants who made zero consequentialist responses \((n = 7)\) and explains why we see no significant difference between participants who gave zero and participants who gave three consequentialist responses.

**Figure 11a**

![Figure 11a](image)

Furthermore, while there was no significant difference between participants who made one or two consequentialist responses, \(t(117) = 1.55, p = .12, d = .35\), there was a significant difference between participants who made one or three consequentialist responses, \(t(117) = 3.06, p = .01, d = .74\). There was also no significant difference between participants who made two or three consequentialist responses, \(t(117) = 1.75, p = .08, d = .39\). Furthermore, as can be seen on Figure 11a the error bar for participants that made three consequentialist judgments crosses zero. This indicates the participants who made the maximum number of consequentialist responses, used statistically equal amounts of anger and sadness language in their responses. In summary,
the ratio of anger to sadness language became more equal as participants made more consequentialist judgments. The main findings presented in Chapter 3 do not change when the seven participants previously excluded were included in the analysis.