

University of Tasmania Open Access Repository

Cover sheet

Title

The effects of perceived intent and affective anger on moral judgements : a CNI model analysis

Author

Halliwell, E

Bibliographic citation

Halliwell, E (2021). The effects of perceived intent and affective anger on moral judgements : a CNI model analysis. University Of Tasmania. Thesis. https://doi.org/10.25959/23250584.v1

Is published in:

Copyright information

This version of work is made accessible in the repository with the permission of the copyright holder/s under the following,

Licence.

Rights statement: Copyright 2021 the author.

If you believe that this work infringes copyright, please email details to: oa.repository@utas.edu.au

Downloaded from University of Tasmania Open Access Repository

Please do not remove this coversheet as it contains citation and copyright information.

University of Tasmania Open Access Repository

Library and Cultural Collections University of Tasmania Private Bag 3 Hobart, TAS 7005 Australia E oa.repository@utas.edu.au

The Effects of Perceived Intent and Affective Anger on Moral Judgements: a CNI Model Analysis

Eli Halliwell

BPyschSc

A report submitted as a partial requirement for the degree of Bachelor of Psychological Science with Honours at the University of Tasmania, 2021

Statement of Source

I declare that this report is my own original work and that contributions of others have been

duly acknowledged.

Signature:

Date: 14/10/2021

Acknowledgments

I would first like to thank my project supervisor Matthew Palmer, for partial funding of participant attainment, assistance with data collation, feedback on study progress, and general supervisory support. Thank you to also to postgraduate students Jessica Hughes and Paul Schokman, for assistance with Lime-survey software. I would like to thank Allison Matthews for coordinating the honours research year, and Helen Derbyshire for administrative support and oversight of the online student participation platform. I would like to acknowledge the University of Tasmania's School of Psychology for majority funding of participant attainment, as well as the Human Research Ethics Committee for providing approval for the current study. Thank you also to all the participants involved in this study, particularly the large number of volunteer participants who made this study possible. Lastly, thank you to my family, friends, and my wonderfully supportive partner Anthea, for ongoing moral support throughout the year.

Table of Contents

Statement of Sourcesii
Acknowledgementsiii
List of Tables & Figuresv
Abstract1
Introduction
Benefits of the CNI Model4
Perceived Intent and Moral Judgement8
Anger Sensitivity and Moral Judgement13
Hypotheses and Rationale Summary16
Methods17
Design17
Participants18
Materials18
Procedure19
Analysis
Results
Intent Effects
Anger Effects
Discussion27
Implications and Recommendations
Reference List
Appendices

List of Tables and Figures

Table 1.	Mean Parameter Estimate Comparison between Intent Conditions:
	Full Sample
Table. 2.	Mean Parameter Estimate Comparison between Intent Conditions:
	Lower Anger Sensitivity24
Table 3.	Mean Parameter Estimate Comparison between Intent Conditions:
	Higher Anger Sensitivity24
Table 4.	Mean Parameter Estimate Comparison between Anger Sensitivity
	Groups: Good-Intent condition and Bad-Intent Condition
Figure 1.	CNI Multinomial processing tree predicting action versus inaction
	responses in moral dilemmas with costs of action greater-than vs
	lesser-than benefits of action and with normative prescription vs
	prohibition of taking action
Figure 2.	Comparison of parameter estimates for sensitivity to consequences,
	sensitivity to norms, and preference for agent-inaction between anger
	sensitivity groups. Error bars show 95% CI25

The Effects of Perceived Intent and Affective Anger on Moral Judgements: a CNI

Model Analysis

Eli Halliwell

Word count - 9470

Abstract

Existing moral judgement studies suggest that perceiving a moral agent as having bad intentions is associated with negative moral judgement of that agent. However, the extent to which intent-related negative moral judgement is associated with moral sensitivities has seen comparatively little research. The current study measured participant sensitivity to consequences (C), sensitivity to norms (N), and general preference for agent-inaction (I) in response to a series of moral dilemmas. Participants (N = 130, mean age = 29.9) were assigned to 2 conditions: depicting moral agent's as having good vs bad intentions. Dilemma manipulations (2x2) consisted of: costs of action being greater-than vs lesser-than benefits of action, and normative prescription vs prohibition of taking action. Contrary to the second and third hypotheses, perceived-intent was found to have no significant effect on C or N parameters. As hypothesised, perceived-intent did effect preference for agent-inaction, such that a greater preference was associated with the bad-intent condition. Participant's responses to a short anger scale were used to compare intent-effects between high and low angersensitivity groups. Variation of intent-effects was observed between anger-sensitivity groups, such that, contrary to the hypothesis, no significant differences remained between intent conditions at higher anger levels.

Conventional moral decision making research has traditionally focused on the relative influence of two moral concerns: deontological (the rightness or wrongness of a given action) and utilitarian (the desirability of a given action's consequences) (Greene et al., 2004; Strohminger et al., 2011; Trémolière & Bonnefon, 2014). Traditional moral psychology studies often make use of sacrificial dilemmas in which participant responses reflect a preference for deontological vs utilitarian decision making. A well-known sacrificial dilemma example is the trolley-problem (Thomson, 1976), depicting an out of control trolley that is going to collide with five people, killing all of them, unless it is rerouted to an alternate track, in which case it will only kill one person. The participant is then asked to choose one of two options: reroute the trolley to an alternate track, causing the death of one person in order to save five lives (utilitarian), or, do not reroute the train, thereby causing the death of no-one (deontological choice), but failing to prevent the death of the other five (Thomson, 1976). While the classic trolley-problem was initially intended as a personal dilemma; asking the participant to choose a moral-action, researchers have made use of similar moral dilemmas in which a fictional moral agent is presented with similar choices, with participants judging particular actions as permissible or impermissible, thereby allowing for measurement of moral-judgement decision making (Dubljević et al., 2018; Hechler & Kessler, 2018; Pizarro et al., 2003).

Moral decision making studies have provided great insight into the cognitive and intuitive processes underlying moral decision making (Conway & Gawronski, 2013; Greene et al., 2004; Strohminger et al., 2011; Trémolière & Bonnefon, 2014). Perhaps most notably, a default-interventionist interpretation of the dual-process-model of moral decision making, in which utilitarian processing requires slower, more effortful cognition, while deontological processing is a relatively effortless process involving intuitive, emotionally associated responding (Greene et al., 2004; 2008; 2001). Moral judgement research has also provided a

greater understanding of the personal and situational factors that can influence moral decision making, such as the anger level of the decision maker (Hechler & Kessler, 2018; Nadler, 2012) and the perceived-intent of moral agents (Dubljević et al., 2018; Hechler & Kessler, 2018; Pizarro et al., 2003).

While deontology and utilitarianism are typically viewed as the most significant moral considerations involved in moral-action decision making, when engaging in moral judgement it is suggested that virtue-ethical consideration of the moral agent in question constitutes a third moral influence on decision making (Dubljević et al., 2018; Hechler & Kessler, 2018; Pizarro et al., 2003; Svensson, 2010; Swanton, 2001). Indeed the majority of existing experimental evidence suggests that perceived harmful-intent is significantly predictive of negative moral judgment (Cushman, 2008; Ginther et al., 2021; Hechler & Kessler, 2018; Pizarro et al., 2003). However, the extent to which negative moral judgement is influenced by sensitivity to consequences and norms, or reflects an otherwise motivated preference for agent-inaction, has not been directly investigated. Therefore, the current experiment sought to explore the extent to which the perceived intentions of moral agent's would affect sensitivity to deontology (norms), sensitivity to utilitarianism (consequences), and an otherwise motivated general preference for agent-inaction. Similarly, while there is evidence that higher levels of anger are associated with increased impermissibility judgements (Hechler & Kessler, 2018) and punishment (Nadler, 2012), the existing literature is lacking in exploration of anger's effects on sensitivity to norms and consequences, when measured independently from inaction preference. Therefore, the secondary aim of this experiment is to explore the potential moderating effect of anger on intent-effects between conditions. In step with traditional moral decision making studies, the current experiment analysed participant responses to a series of sacrificial moral dilemmas to explore these relationships.

Dilemmas were manipulated, and responses explored, in line with the CNI model of moral decision making (Gawronski et al., 2017), which was developed to address measurement limitations associated with traditional dilemma study designs. The CNI model was chosen as it measures preference for inaction independently from sensitivity to norms and consequences, thereby disentangling measurement of impermissibility from measurement of moral sensitivities. The combined literature informing the current study was interpreted as supporting the existence of intent-effects on moral judgement, as measured by the CNI model. It was expected that a greater preference for agent-inaction, as well as a greater sensitivity to norms, would be observed in the bad-intent condition, than in the good-intent condition, with the good-intent condition corresponding with a greater measured sensitivity to consequences. Existing moral judgement research was also interpreted as supporting the existence of a moderating effect of anger on intent-effects. It was expected that participants with a greater sensitivity to anger would give responses reflecting an increase in intent-effects between conditions, with respect to a sensitivity to norms, and a general preference for agentinaction. The literature collated for this experiment indicated no existing research employing direct and independent measurement of perceived-intent-effects on moral sensitivities and preference for agent-inaction during moral judgement. Therefore the results of this experiment may help to inform a more detailed understanding of the interplay of factors that influence moral judgement decision making.

Benefits of the CNI Model

Recent research concerning moral decision making has resulted in substantial developments in models used to measure participant responding. One such model: the CNI model (Gawronski et al., 2017), was developed to address a number of limitations suggested to plague traditional dilemma study designs. The CNI model is suggested to addresses these limitations by employing a 2x2 design, manipulating the cost-benefit ratio of taking action

(costs of action are greater-than vs lesser-than benefits of action), as well as the normative prescription vs prohibition of taking action (taking action satisfies vs violates deontological principles) (Gawronski et al., 2017) (see Figure 1). The first two limitations of traditional dilemma studies addressed by the CNI model relate to Conway and Gawronski's (2013) concept of 'congruent' and 'incongruent' dilemmas. Conway and Gawronski (2013) describe dilemmas in which the same choice satisfies both deontological and utilitarian principles as 'congruent', and dilemmas in which moral inclinations lead to opposing choices as 'incongruent'. Traditional dilemma studies are suggested by Conway and Gawronski (2013) to be limited as they make use of only incongruent dilemmas (e.g. Greene et al., 2004; Strohminger et al., 2011; Trémolière & Bonnefon, 2014), thereby neglecting to measure moral preferences in the absence of moral conflict. Measuring participant responses to both congruent and incongruent dilemmas on the other hand, is suggested to allow for a more nuanced measurement of the moral influences on participant responding (Conway & Gawronski (2013). Using the classic trolley-problem as an example, Conway and Gawronski (2013) argue that to pull the lever when it would save five people but also result in the death of one, suggests a greater utilitarian sensitivity than would choosing to pull the lever when it would save five people and cause the death of no-one. The CNI model contains both congruent and incongruent dilemmas by virtue of the manipulation of cost benefit ratios within its 2x2 design (Gawronski et al., 2017), thereby superseding the limited accuracy and generalisability of traditional measurements.

A second limitation of traditional dilemma study designs is the binary nature of participant responding options, which, in the absence of specific experimental manipulations, generate results that infer an inverse relationship between deontological and utilitarian sensitivities (e.g. Bartels, 2008; Greene et al., 2004; Moore et al., 2008; Nichols & Mallon, 2006; Strohminger et al., 2011; Trémolière & Bonnefon, 2014). In other words, as choosing



Figure 1. CNI Multinomial processing tree predicting action vs inaction responding in moral dilemmas with costs of action greater-than vs lesser-than benefits of action and with normative prescription vs prohibition of taking action (Gawronski et al., 2017).

either response can be equated to rejecting the alternative, results have invariably inferred that deontology and utilitarianism represent bipolar extremes of a single moral continuum. The concept that moral choices involve a trade-off between utilitarian and deontological sensitivity, such that activation of one sensitivity necessarily and directly corresponds with the diminishment of the other, is inconsistent with dominant theories of moral decision making. The dual process model for example, describes sensitivity to normative and consequentialist concerns as generating conflicting motivations that cause uncertainty (Greene et al., 2004; 2008; 2001). Indeed, a state of uncertainty could reasonably be said to be characteristic of, or indeed define, experiencing a moral dilemma (Greene et al., 2004; 2008; 2001). As normative and consequentialist concerns are suggested to reflect discrete neural processes that compete for expression (Conway & Gawronski, 2013; Greene et al., 2004; 2001), ensuring the use of measurements that do not impose a bipolar interpretation of results is necessary to remain consistent with current theory. The CNI model addresses this limitation once again by manipulating the cost-benefit ratio of dilemmas as part of its 2x2 design, resulting in both congruent and incongruent dilemmas. Combined analysis of

participant responses to both dilemma types disentangles moral sensitivity measurements resulting in no artificial inference of inversely related moral sensitivities.

Lastly, perhaps most noteworthy limitation of traditional dilemma study designs has been neglecting to manipulate the deontological prescription vs prohibition of taking action in the context of dilemmas (Gawronski et al., 2017). Specifically, traditional dilemma study designs are invariably framed such that the deontological choice is consistent with choosing not to act (e.g. Greene et al., 2004; Strohminger et al., 2011; Trémolière & Bonnefon, 2014). In the context of the classic trolley-problem, this means that choosing to act (pulling the lever) invariably constitutes a violation of deontological principles, while inaction is invariably a violation of deontological principles. Conway and Gawronski (2013) and Gawronski et al. (2017) point out that this renders the extent to which deontological responses can be inferred to represent deontological sensitivity, or an otherwise motivated preference for inaction, unclear. Indeed, preference for inaction under uncertainty, or 'omission bias', is a well-researched and generalizable phenomenon (Cushman et al., 2006; Spranca et al., 1991). As is the 'status quo effect': a bias towards maintaining existing circumstances when uncertain about how to proceed (Samuelson & Zeckhauser, 1988), and the 'action effect': a bias toward regarding harm resulting from action as worse than harm resulting from omission (Kahneman & Tversky, 1982). Therefore, it is important that experimental conditions are manipulated to disentangle measurements of general preference for inaction from moral sensitivity measurements. By manipulating the normative prescription vs prohibition of taking action, the CNI model presents a series of dilemmas in which the active choice equally corresponds to utilitarian and deontological outcomes, thereby disentangling preference for inaction from moral sensitivities. This allows for measurement of moral sensitivities, uncontaminated by extraneous factors influencing a

preference for inaction, as well as measurement of preference for inaction that is unexplained by moral sensitivities.

The validity and reliability of the CNI model was initially assessed as part of a series of experiments constituting the models original presentation, in which it was found that the model provided valid and reliable measure of moral dilemma responding, as well as for comparing conditions such as cognitive load, and participant groups such as gender and psychopathy scores (Gawronski et al., 2017). Since its development, the validity and reliability of the CNI model has been repeatedly demonstrated in a variety of moral decision making studies, exploring the effects of factors such as individual differences (Körner et al., 2020; Kroneisen & Heck, 2020), political ideology (Luke & Gawronski, 2021), and incidental emotions (Gawronski et al., 2018), on moral decision making. The CNI model therefore, satisfies the needs of the current experiment, as it pertains to the measurement of intent-effects on moral judgement.

Perceived Intent and Moral Judgement

In addition to deontological and utilitarian sensitivities, moral judgement is suggested to be influenced by virtue-ethical perceptions of the moral agent in question (Pizarro & Tannenbaum, 2012; Uhlmann et al., 2015). Virtue-ethical consideration is suggested to have been selected for evolutionarily, allegedly facilitating prediction of the ongoing desirability of an individual as a member of a social group (Gintis et al., 2008). This view is consistent with contemporary virtue-ethical theory, which describes 'right action' as action performed by a moral agent whose virtues, character and intent meet certain desirable standards (Svensson, 2010; Swanton, 2001). Experimental research supports this notion, suggesting that the perceived motivation and intent of a moral agent can influence permissibility judgements and assignment of blame (Dubljević et al., 2018; Hechler & Kessler, 2018; Pizarro et al., 2003). A salient example of virtue-ethical influence in practice is provided by studies of courtroom settings, which suggest that defendants perceived to have worse intentions receive harsher sentencing (Bright & Goodman-Delahunty, 2006; Nadler, 2012). This finding informs Nadler's (2012) description of blameworthiness decision making as it pertains to criminal law, requiring consideration of the conduct, consequences and mental state of the defendant. Moral judgement studies manipulating mental state, causal attribution of harm, and consequence severity also support the notion of intent-effects, with a foremost predictor of impermissibility judgements suggested to be perception of the moral agent's embracing or rejection of harmful impulses (Pizarro et al., 2003) and actions (Cushman, 2008; Ginther et al., 2021; Hechler & Kessler, 2018). Similarly, two studies found that simply depicting moral agents as hesitant to transgress norms, caused negative moral judgements attributed to their harmful actions to be attenuated (Everett et al., 2016; Robinson et al., 2017).

Taken together, these studies inform the rationale for investigating intent effect on moral judgement, as well as for gand for of virtue-ethical perception on moral sensitivities and preference for inaction during moral judgement. However, while many moral judgement studies explore intent-effects on impermissibility judgements under differing circumstances (Alicke, 2000; Cushman, 2008; Dubljević et al., 2018; Ginther et al., 2021; Hechler, & Kessler, 2018; Pizarro et al., 2003; Woolfolk et al., 2006), there is comparatively little existing research directly measuring agent intent-effects on moral sensitivities and inaction preference independently. One exception is a study designed by Dubljević et al. (2018), to test the main effects and interactions of a moral agent's intent, actions, and the consequences of those actions, on permissibility judgements (Dubljević et al., 2018). Overall, it was found that agent manipulation had a significant main effect on permissibility judgements, with badintent being associated with greater impermissibility judgements, regardless of norm or consequence manipulation. Additionally, Dubljević et al. (2018) found a series of additive effects in predicting moral judgement, providing evidence for intent-effects on sensitivity to norms and consequences. In "low-stakes" scenarios (transmitting syphilis to a spouse) Dubljević et al. (2018) found that, good-intent and good-action had an additive effect in predicting positive moral judgement, while bad-agent and bad-deed had an additive effect in predicting negative moral judgement. During "high-stakes" scenarios (death of multiple hostages), there was no longer an additive effect of good-intent and good-action in predicting positive judgement, while bad-intent and bad-action continued to have an additive effect in predicting negative judgement in scenarios with negative consequences (Dubljević et al., 2018). These findings suggest that sensitivity to moral norms plays a more consistant role in moral judgments when perceived-intent is bad rather than good. Similarly, Dubljević et al. (2018) found that good-intent and good-consequences had an additive effect in predicting positive judgements in low stakes scenarios, while bad-intent and consequences had no additive effect in predicting moral judgement under any condition. These findings suggest that sensitivity to consequences plays a greater role in moral judgments when perceivedintent is good rather than bad.

The positive association between perceived bad-intent and negative moral judgement suggested by Dubljević et al. (2018) is supported by the majority of moral judgement studies exploring the effects of agent intent, which also suggest perceived bad-intent to be positively associated with greater impermissibility judgements (Alicke, 2000; Cushman, 2008; Dubljević et al., 2018; Ginther et al., 2021; Hechler, & Kessler, 2018; Pizarro et al., 2003; Woolfolk et al., 2006). As judging an act to be impermissible can reasonably be inferred to be synonymous with a preference for agent-inaction, the majority of evidence provided by moral judgement studies strongly suggests that perceived bad-intent will be associated with preference for agent-inaction as measured by the CNI model. This view is further supported by a judgement study conducted by Hayashi (2015), finding evidence for a positive relationship between perceived bad-intent and omission bias. The notion that preference for

agent-inaction is related to perceived-intent is also consistent with virtue-ethical prescriptions, including the concept of 'right-action', which suggests that a moral agent's given exploit is permissible to the extent that the agent in question displays desirable virtue-ethical traits (Svensson, 2010; Swanton, 2001). Indeed, an example of this propensity in practice is is provided by moral judgement studies in courtroom settings, suggesting a positive association between perceived bad-intent of defendants and increased harshness of sentencing (Bright & Goodman-Delahunty, 2006; Nadler, 2012). In conclusion, the combined moral judgement literature supports a hypothesised association between perceived bad-intent and a greater preference for agent-inaction.

Due to a lack of experimentation measuring intent-effects on moral sensitivities independently from inaction preference, it has traditionally been difficult to distinguish measurement of sensitivity to moral concerns from measurement of an otherwise motivated preference for agent-inaction. However, recent experimentation has generated some evidence that intent-related impermissibility judgements are associated with sensitivity to norms. Perhaps the most direct measurement of this relationship to date was conducted by Dubljević et al. (2018), suggesting an additive predictive effect of bad-intent and bad action in predicting negative moral judgement. Furthermore, a moral judgement study conducted by Miller et al. (2014) suggests that negative moral judgement is more strongly associated with an aversion to harmful actions than with empathic responses to the consequences visited upon victims. Moral judgement and emotion research further supports these findings, suggesting that emotional reactions elicited by intended harmful actions are distinct from those elicited by the consequences of those actions (Hechler & Kessler, 2018; Russell, & Giner-Sorolla, 2011).

Further supporting evidence for an association between norm-sensitivity and perceived-intent can be inferred from the details of certain moral judgement studies. One

vignette study found that fictional agents depicted as being involved in identical traffic accidents were perceived as more responsible for the accident if they were speeding home to hide narcotics, as opposed to speeding home to hide a present for a spouse (Alicke, 2000). Similarly, Woolfolk et al. (2006) presented participants with vignettes depicting a man being forced by armed aeroplane hijackers to shoot and kill his friend. In one condition the man shoots his friend despite severe aversion, in the other, he was glad to have the opportunity to kill him. It was found that participants held the agent who embraced the murder as more responsible for the act than the agent who did not (Woolfolk et al., 2006). While these studies provide no evidence regarding differences in sensitivity to consequences, they do support the notion that intent-effects on moral judgement are associated with differences in perceived wrongness of the act. Furthermore, it has been suggested that graphic representations of harmful actions increase amygdala activity and strengthen connectivity with brain regions associated with punishment decision-making, but only when the harmful act is perceived as intentional (Treadway et al., 2014). Taken together, the research presented here was interpreted as supporting a hypothesised positive association between perceived bad-intent and greater sensitivity to norms.

In addition to suggesting additive predictive effects of perceived bad intent and bad act, Dubljević's et al. (2018) study also suggests that good-intent and good consequences had an additive effect in predicting positive moral judgement, suggesting a positive relationship between consequence-sensitivity and perception of good-intent. This is supported by the informed hypothesis of a positive association between norm-sensitivity and perceived badintent, in conjunction with traditional studies that suggest a negative association between sensitivity to norms and sensitivity to consequences (Greene et al., 2004; Strohminger et al., 2011; Trémolière & Bonnefon, 2014). Thereby suggesting that sensitivity to consequences is more closely related to perceived good-intent than bad-intent. While the limitations of viewing these sensitivities as bipolar measurements of a single continuum have been discussed, there is evidence that the two moral sensitivities may be negatively associated. For example, a study conducted by Tannenbaum et al. (2011), suggests that worse perceived moral character is associated with increased impermissibility judgements of agent's harmful actions, even when compared with an agent's of better moral character, but who causes a greater amount of immediate harm. This appears to suggest that perceived bad-intent is associated not only with increased sensitivity to norms, but also with decreased sensitivity to consequences. An expected greater sensitivity to consequences in the good-intent condition is further supported by the combined findings of trait-perception and moral judgement research. It is suggested that moral judgement of agents depicted as occupying high responsibility roles is associated with greater consequentialist responding (Haidt & Baron, 1996). Concurrently, there is an overlap in those traits that are commonly ascribed to high responsibility individuals and those perceived to be moral exemplars (Walker, 1999). Therefore, participant consideration of agent traits may influence responding to agents perceived to have goodintent in a manner resembling the greater consequentialist judgement associated with highresponsibility agents (Haidt & Baron, 1996). While not conclusive, the available evidence is consistent with the third hypothesis, that sensitivity to consequences would be greater in the good-intent condition than in the bad-intent condition.

Anger Sensitivity and Moral Judgement

The majority of moral decision making research suggests emotion to be a necessary component of intuitive moral judgement (Greene et al., 2004; Greene et al., 2001; Haidt, 2001; Prinz, 2006; Schnall et al., 2008). Indeed it has been hypothesized that affective responses to moral decision making tasks provide a heuristic mechanism to determine permissibility and to allocate appropriate punishment, when considering the harmful actions of moral agents (Bright & Goodman-Delahunty, 2006; Greene & Haidt, 2002; Goldberg et

al., 1999; Haidt, 2001; Sunstein, 2005). Anger related heuristics suggested to be relevant to moral judgement include the 'outrage heuristic', which describes increased impermissibility judgements proportional to the outrageousness of the act, and 'punish betrayals of trust', which describes anger associated with betrayal to be associated with greater punishment preference (Sunstein, 2005). This is supported by the dual process model's description of deontological processing as emotionally driven, effortless, and intuitive in nature (Greene et al., 2004; 2008; 2001). Study of courtroom settings also supports the notion that emotional arousal influences moral decision making, finding that perception of bad-intent, feelings of anger, and greater blaming and punishing preference, were all positively interrelated (Nadler, 2012). Indeed, the most consistent finding regarding angers effect on moral judgement is a positive association with impermissibility judgements (Ginther et al., 2021; Hechler & Kessler, 2018; Landmann & Hess, 2017; Russell, & Giner-Sorolla, 2011). Therefore, as impermissibility judgements can be reasonably inferred to reflect a preference for agentinaction, a hypothesised association between impermissibility judgements and perceived badintent, supported the notion that anger would be associated with increased intent-effects on preference for agent-inaction between intent conditions. Furthermore, the combined moral judgement research also provides evidence for anger moderating the hypothesised intenteffects on norm-sensitivity.

A moral judgement study conducted by Hechler and Kessler (2018) found that anger was also positively related to a perceived-intent to transgress norms, and that this anger was distinct from emotional reactions to victim suffering. Similarly, vignettes describing a moral agent feeding erroneous meats to other fictional characters, found that consideration of individuals unknowingly eating human flesh predicted participant disgust, while anger was selectively predicted by the agent intentionally serving human flesh (Russell, & Giner-Sorolla, 2011). Further moral judgement studies also suggest anger to be predicted almost entirely by intended norm violation (Ginther et al., 2021; Landmann & Hess, 2017), while unintentional harm is suggested to be associated more strongly with sorrow and contempt (Ginther et al., 2021), and harmful consequences with compassion for victims (Landmann & Hess, 2017). Furthermore, moral judgement studies making use of fMRI measurements suggest that deontological processing is associated with emotional centres of the brain Greene's et al. (2004; 2008; 2001). This is further supported by a study conducted by Treadway et al. (2014), finding that graphic salience of harmful actions only increases activity in brain regions associated with punishment decision-making when the harmful act is perceived as intentional.

While the majority of relevant literature supports the notion that anger is related to differences in moral decision making, an existing CNI study conducted by (Gawronski et al., 2018) contradicts this notion, finding no significant effects of anger on C, N, or I, parameters during moral-action decision making tasks, and when comparing angry participants with affectively neutral participants. This finding was not considered a complete contradiction to the aims of the current study, which concerns moral-judgement and compares participants between high vs low anger-sensitivity groups, rather than high vs neutral. Nonetheless, the findings of Gawronski et al. (2018) do provide counter evidence for an association between anger and differences in CNI scores. Furthermore, reviews of existing literature concerning anger and its effects on cognition are susceptible to multiple interpretations. It is suggested that increased anger is associated with fight or flight brain regions such as thalamic, limbic, and brainstem regions, thereby impairing problem solving and cognition by prioritising rapid, rather than considered, reactions to stimuli (Cox & Harrison, 2008; Gilam & Hendler, 2015). Similarly, a study of crime related judgements found that angry participants were impaired in their ability to perceive and process situational variables and narrative inconsistencies, relying more heavily on heuristic processing to make decisions (Ask & Granhag, 2007). On

the one hand, lowered cognitive ability and a reliance on heuristic problem solving may indicate a greater reliance on virtue-ethical heuristics, resulting in greater intent-effects. On the other hand, cognitive resources may be required to integrate perceived-intent into the decision making process, rendering a reduction in cognitive resources a hindrance to participants' ability to take agent-intent into account during decision making. As the combined moral judgement literature appeared to support the former interpretation, existing anger research was interpreted as supporting an increased reliance on moral heuristics.

Despite limitations pertaining to the interpretation of existing anger and cognition research, the majority of moral judgement literature collated for the current study supported the hypothesis that anger is related to heightened reactivity to bad-intent, such that greater anger would be associated with greater N and I parameter differences between intent conditions. As it was impractical within the scope of the current experiment to measure participant anger responses to each test item, participant anger-sensitivity measures were taken. It was reasoned that differences in participant anger-sensitivity could be expected to resemble differences in mean level of anger arousal in response to test items. Therefore, in order to explore the moderating effect of anger arousal on intent-effects, the current experiment made use of the Dimensions of Anger Reactions-5 (DAR-5) scale (Hawthorne et al., 2006), to measure participants anger-sensitivity individually. A true moderation analysis could not be performed on maximum likelihood analysis output, therefore, participants were split into anger-sensitivity groups, above and below the full sample mean. CNI parameter estimates could then be compared between anger groups to infer the presence or absence of a moderating effect of anger.

Hypotheses and Rational Summary

The current study sought to explore the effects of perceived-intent on sensitivity to norms, sensitivity to consequences, and preference for agent-inaction during moral

judgement, as measured by the CNI model. The secondary aim of this experiment was to explore the extent to which variation of intent-effects on CNI scores can be explained by affective anger. The literature collated for this study informed the following hypotheses: Firstly, mean I parameter estimates were expected to be greater in the bad-intent condition than in the good-intent condition. Secondly, it was hypothesised that mean N parameter estimates would be greater in the bad-intent condition than in the good-intent condition. Thirdly, it was tentatively hypothesised that mean C parameter estimates would be greater in the good-intent condition than in the bad-intent condition. Fourthly it was hypothesised that that greater anger-sensitivity would be associated with greater intent-effects, such that differences in mean I and N parameter estimates would be greater in the higher angersensitivity group. Although moral judgement studies have examined the relationship between perceived-intent and permissibility judgements, the literature collated for this study suggests the current study to be the first to directly measure the effects of perceived-intent on preference for agent-inaction independently from sensitivity to deontology, and sensitivity to utilitarianism during moral judgement. The results of this study were expected to assist in clarifying the relationship between permissibility judgements and variations in sensitivity to norms and consequences during moral judgement. The results of this study were further expected to contribute to a more detailed understanding of the interplay of factors that influence moral judgement decision making, as well as insight into the effects of perceivedintent, beyond variations in blame and punishment attribution.

Methods

Design

Intent-effects were explored using a 2x2x2 mixed design, with CNI manipulations within participants and agent-intent manipulation between participants. Within subjects CNI manipulations included: taking action is prescribed-by vs prohibited-by norms, and utilitarian

benefits of action are greater-than vs lesser-than costs. Between-subjects manipulation of agent-intent consisted of: moral agent depicted as entirely willing to do harm (bad-intent) vs described as having significant aversion to doing harm (good-intent). 12 base dilemmas were subject to CNI manipulations, resulting in 48 total dilemmas in each intent condition. Intent conditions were then compared for differences in mean parameter estimates. Participants also completed the DAR-5 anger scale and were split into groups scoring above and below the sample mean score. CNI data was then compared between groups to measure angers effects on differences between intent conditions.

Participants

The target minimum sample size for the current experiment was 120 in order to allow for >60 participants per between-subjects condition. The target minimum sample size was informed by the lower end of sample sizes judged to be sufficient for existing CNI analyses (Gawronski et al., 2018). Participants consisted of University of Tasmania undergraduate psychology students, volunteers recruited via social media platforms, and paid participants obtained through the online recruiting platform 'Prolific Academic'. There were no sample requirements for age, sex, or other demographic variables in this study, however participant age and gender was recorded for sample data. The sample obtained consisted of 130 participants (female = 84; male = 42; other = 4). Participants were aged 18-74 (M = 29.9, SD= 11.9).

Materials

The experiment was conducted via the online survey platform software 'Limesurvey', participant access to the survey was gained via the University of Tasmania Sonar platform for university students, via the online recruitment platform 'Prolific Academic' for paid participants, and via direct URL link for volunteers. The dilemmas were adapted from the 12 base dilemmas used in Körner's et al. (2020) CNI study, designed to satisfy within and between subjects analysis. All dilemmas, originally designed to assess moral-action decision making, were modified into moral-judgement scenarios (e.g. "Chris is a surgeon in a small hospital. One day, Chris's hospital receives five badly hurt patients from a car accident. The patients all need organ transplants or they will die. Chris has no spare organs, but there is a patient who has been in a coma for several weeks and it seems unlikely that he will wake up again. Chris could terminate his life support and take his organs for the five accident victims, so that their lives will be saved. Is it acceptable in this case for Chris to terminate the patient's life support to take his organs?"). Each dilemma was concluded with an explicit description of the agent's moral intent, as either good (e.g. "Chris cares deeply about the patients who need help. However, it is entirely against Chris's nature to terminate the coma patient"), or bad (e.g. "Chris doesn't care about the patients, but Chris would like to take the credit for saving a greater number of patients. Chris's main concern is not being held responsible for killing the coma patient."). Participants were asked to answer 'yes' or 'no' regarding the appropriateness of a given action (e.g. "Is it appropriate in this case for Chris to terminate the coma patient in order to save the lives of the other five patients?").

Anger measurement was conducted using the DAR-5 (Hawthorne et al., 2006), consisting of 5 items: 4 anger response items and 1 social relationships impairment item. Each item was measured via 5 point Likert scale (1-5), (total range 5-25), with higher scores reflecting greater anger-sensitivity. Experimental evidence suggests the DAR-5 to be a valid and reliable brief measure of anger in general population samples (Forbes et al., 2014; Goulart et al., 2020), having strong concurrent validity with existing recognised measures of anger (Ceschi et al., 2020; Forbes et al., 2014; Goulart et al., 2020), and suggested to be an equally valid measure of male and female respondents (Asmundson et al., 2016; Goulart et al., 2020).

Procedure

Participants were instructed to complete the online experiment using a personal computer or laptop in a distraction free environment. Instructions were provided via onscreen text prior to the experiment, instructing participants to read and consider each vignette carefully. Participants were warned that many of the dilemmas may appear similar, but are all different in important ways. Following an information and consent form, participants were randomly assigned to intent conditions. Participants were then presented with their condition's 48 dilemma items in a randomised order. Participant responses were chosen from two check boxes marked 'yes' and 'no' in response to each item. Following completion of the dilemma items, participants completed the 5 item DAR-5 anger scale. Once complete, participants were guided to a final screen, thanking them for their contribution.

Analysis

Maximum likelihood analysis of participant mean responses to dilemma variations were used to generate parameter estimates for sensitivity to consequences and norms, as well as preference for agent-inaction, in each intent condition. Model-fit measures were then used to compare mean parameter estimates between intent conditions and to independently assess the significance of variation in C, N and I parameters between intent conditions. Model-fit measures were also used to assess whether individual parameter estimate means were measured as significantly different from their neutral point. C and N parameters are measured from a neutral point of zero, with greater scores indicating greater sensitivity to consequences and norms respectively. The I parameter is measured from a neutral point of 0.5, with higher and lower scores indicating preference for inaction and preference for action respectively (Gawronski et al., 2017). Generation and comparison of parameter estimates was conducted using the freely available 'MultiTree' software, obtained from the supplementary materials of Gawronski's et al. (2017) CNI study: http://www.bertramgawronski.com/documents/CNI-Model_Materials.zip. Effect sizes were calculated using parameter estimates, standard errors,

and sample sizes, using David Wilson's online effect size calculator (Lipsey & Wilson, 2001): <u>https://www.campbellcollaboration.org/escalc/html/EffectSizeCalculator-SMD8.php</u>. The MultiTree software used for the current study was not designed to allow for full model comparisons, nor to compare within subjects manipulations between groups. As such, output from maximum likelihood analysis did not allow for standard moderation analysis of anger-sensitivity effects. Therefore, anger's suspected moderating effects were explored using MultiTree model-fit measures to compare individual parameter estimates between anger-sensitivity groups, in each intent condition separately.

Results

Participants were randomly allocated to intent conditions, with70 participants (female = 49; male = 20; other = 1), aged 18-74 (M = 30.8) allocated to the good-intent condition, and 60 participants (female = 35; male = 22; other = 3), aged 18-65 (M = 28.9) allocated to the bad-intent condition. The model fit the sample data well with parameter scores estimated separately for each intent condition, $G^2(2) = 1.283$, p = 0.527. In the good-intent condition, the mean C parameter estimate (M = 0.237, 95% CI [0.208 - 0.267]) (see Table 1) was significantly greater than zero, $\Delta G^2(1) = 235.863$, p < .001, the mean N parameter estimate (M = 0.555, 95% CI [0.516 - 0.594]) (see Table 1) was also significantly greater than zero, $\Delta G^2(1) = 665.800, p < .001$. However, the mean I parameter estimate (M = 0.488, 95% CI [0.446 - 0.530]) (see Table 1), was not found to be significantly lower than the neutral point of 0.5, $\Delta G^2(1) = 0.323$, p = 0.570. In the bad-intent condition, mean C parameter estimate (M = 0.248, 95% CI [0.216 - 0.280]) (see Table 1) was significantly greater than zero, $\Delta G^2(1) =$ 219.688, p < .001, the mean N parameter estimate (M = 0.551, 95% CI [0.508 - 0.593]) (see Table 1) was significantly greater than zero, $\Delta G^2(1) = 552.083$, p < .001, and the mean I parameter estimate (M = 0.570, 95% CI [0.525 - 0.616]) (see Table 1) was also significantly greater than 0.5, $\Delta G^2(1) = 9.195$, p = 0.002. The descriptive data suggests that, in both intent

Table 1

	Good Intent			Bad Intent	_	
Estimates	М	95% CI	М	95% CI	ΔG^2 (df = 1)	р
С	0.237	[0.208 - 0.267]	0.248	[0.216 - 0.280]	0.213	.645
Ν	0.555	[0.516 - 0.594]	0.551	[0.508 - 0.593]	0.019	.890
	0.488	[0.446 - 0.530]	0.570	[0.525 - 0.616]	6.833	.009

Mean Parameter Estimate Comparison between Intent Conditions: Full Sample

Note. Table shows mean parameter estimates and 95% CI for sensitivity to consequences, sensitivity to norms, and preference for agent-inaction in good-intent and bad-intent conditions. Comparison of individual parameter estimates between intent conditions is shown with ΔG^2 model fit measures and p values.

conditions, sensitivity to norms was the greatest influence of participant decision making, followed by sensitivity to consequences. Participants in the good-intent condition exhibited no preference for agent-action or agent-inaction, while those in the bad-intent condition exhibited a preference for agent-inaction.

Intent Effects

Significant differences in I parameter estimates between intent conditions ($\Delta G^2(1) = 6.833$, p = 0.009, d = 0.464) (see Table 1) supported the first hypothesis, with significantly greater I parameter estimates observed in the bad-intent condition, suggesting the presence of intent-effects on preference for agent-inaction. Contrary to expectations however, no evidence was found for significant differences in mean N parameter estimates between intent conditions, $\Delta G^2(1) = 0.019$, p = 0.890, d = 0.025 (see table 1). Also contrary to expectations, no evidence was found for significant differences in mean C parameter estimates between intent conditions, $\Delta G^2(1) = 0.213$, p = 0.645, d = 0.082 (see Table 1). These results support the first hypothesis, suggesting that moral judgement is influenced by perceived agent intent, such that perception of bad-intent is associated with an increased preference for agent-inaction. The second and third hypotheses however, were not supported. The combined findings of this analysis suggest that intent-effects on preference for agent-inaction are

independent from variations in sensitivity to norms or consequences, with results suggesting that the perceived-intent of a moral agent has no significant effect on sensitivity to norms or consequences during moral judgement.

Anger Effects

The full sample DAR-5 mean score was 9.68 (SD = 4.03), with individual participant scores ranging from 5 to 22. When split into higher and lower anger-sensitivity groups, 79 Participants were allocated to the lower-anger-sensitivity group, which had a mean DAR-5 score of 7.01 (SD = 1.36). Of the low anger-sensitivity group, 44 participants were allocated to the good-intent condition and 35 participants to the bad-intent condition. 51 participants were allocated to the high-anger-sensitivity group, which had a mean DAR-5 score of 13.80 (SD = 3.21). Of the high anger-sensitivity group, 26 participants were allocated to the good-intent condition and 25 participants to the bad-intent condition.

The CNI model fit the sample data well in the low-anger-sensitivity group, $G^2(2) = 1.529$, p = 0.465, as well as the high-anger-sensitivity group $G^2(2) = 0.080$, p = 0.961. Comparison of CNI parameters between intent conditions in the low-anger-sensitivity group yielded similar results to the full sample, with no significant differences in C Parameter estimates $\Delta G^2(1) = 1.611$, p = 0.204, d = 0.226 (see Table 2), or N parameter estimates, ΔG^2 (1) = 0.021, p = 0.884, d = 0.026 (see Table 2). Also similar to full sample results, a significant difference in mean I parameter estimates was found, $\Delta G^2(1) = 7.587$, p = 0.006, d = 0.494 (see Table 2), such that the bad-intent condition was associated with a greater preference for agent-inaction. In the higher-anger-sensitivity group, There was no longer any evidence of significant differences between intent conditions with respect to mean C parameters, $\Delta G^2(1) = 0.445$, p = 0.505, d = 0.118, N parameters, $\Delta G^2(1) = 0.005$, p = 0.942, d = 0.013, or I parameters, $\Delta G^2(1) = 0.365$, p = 0.546, d = 0.106 (see Table 3), suggesting

Table 2

	Good Intent		Bad Intent		_	
Estimates	М	95% CI	М	95% CI	ΔG^2 (df = 1)	р
С	0.237	[0.200 - 0.273]	0.272	[0.231 - 0.313]	1.611	.204
Ν	0.601	[0.553 - 0.649]	0.607	[0.551 - 0.662]	0.021	.884
<u> </u>	0.444	[0.387 - 0.501]	0.568	[0.501 - 0.635]	7.587	.006

Mean Parameter Estimate Comparison between Intent Conditions: Lower Anger Sensitivity

Note. Table shows mean parameter estimates and 95% CI for sensitivity to consequences, sensitivity to norms, and preference for agent-inaction in good-intent and bad-intent conditions. Comparison of individual parameter estimates between intent conditions is shown with ΔG^2 model fit measures and p values.

Table 3

Mean Parameter Estimate Comparison between Intent Conditions: Higher Anger Sensitivity

	Good Intent			Bad Intent		
Estimates	М	95% CI	М	95% CI	ΔG^2 (df = 1)	р
С	0.237	[0.187 - 0.287]	0.213	[0.162 - 0.264]	0.445	.505
Ν	0.475	[0.409 - 0.541]	0.479	[0.413 - 0.544]	0.005	.942
I	0.546	[0.485 - 0.607]	0.572	[0.511 - 0.633]	0.365	.546

Note. Table shows mean parameter estimates and 95% CI for sensitivity to consequences, sensitivity to norms, and preference for agent-inaction in good-intent and bad-intent conditions. Comparison of individual parameter estimates between intent conditions is shown with ΔG^2 model fit measures and p values.

that greater anger-sensitivity is associated with a significant reduction of intent-effects on preference for agent-inaction (see Figure 2).

C parameter estimates in the good-intent condition were significantly greater than zero in the lower anger-sensitivity group (M = 0.237, 95% CI [0.200 - 0.273]), $\Delta G^2(1) =$ 154.529, p < .001, as well as the higher anger-sensitivity group (M = 0.237, 95% CI [0.187 -0.287]), $\Delta G^2(1) = 82.652, p < .001$, with no significant difference measured between groups, $\Delta G^2(1) = 0.001, p = 0.973$ (see Table 4). C parameter estimates in the bad intent condition were also significantly greater than zero in the lower anger-sensitivity group (M = 0.272, 95%CI [0.231 - 0.313]), $\Delta G^2(1) = 160.597, p < .001$, and higher anger-sensitivity group (M =



Figure 2. Comparison of mean parameter estimates for sensitivity to consequences, sensitivity to norms, and preference for agent-inaction between anger-sensitivity groups. Error bars show 95% CI.

0.213, 95% CI [0.162 - 0.264]), $\Delta G^2(1) = 65.002$, p < .001, with significantly greater C parameter scores in the lower anger-sensitivity group, $\Delta G^2(1) = 7.948$, p = 0.005, d = 0.477 (see Table 4). These results suggest that a main effect of increased anger-sensitivity on moral judgement is a reduction in sensitivity to consequences when considering perceived bad-intent agents.

N parameter estimates in the good-intent condition were significantly greater than zero in the lower anger-sensitivity group (M = 0.601, 95% CI [0.553 - 0.649]), $\Delta G^2(1) =$ 497.445, p < .001, and in the higher anger-sensitivity group (M = 0.475, 95% CI [0.409 -0.541]), $\Delta G^2(1) = 179.402$, p < .001, with significantly greater N scores in the lower angersensitivity group, $\Delta G^2(1) = 24.641$, p < .001, d = 0.771 (see Table 4). N parameter estimates in the bad-intent condition were also significantly greater than zero in the lower angersensitivity group (M = 0.607, 95% CI [0.551 - 0.662]), $\Delta G^2(1) = 373.918$, p < .001, as well as the higher anger-sensitivity group (M = 0.479, 95% CI [0.413 - 0.544]), $\Delta G^2(1) = 185.004$, p < .001, with significantly greater N scores in the low anger-sensitivity group, $\Delta G^2(1) =$ 19.013, p < .001, d = 0.779 (see Table 4). This suggests that another main effect of increased

Table 4

	Low Anger		ŀ	ligh Anger		
Estimates	М	95% CI	М	95% CI	ΔG^2 (df = 1)	р
C Good	0.237	[0.200 - 0.273]	0.237	[0.187 - 0.287]	0.001	.973
C Bad	0.272	[0.231 - 0.313]	0.213	[0.162 - 0.264]	7.948	.005
N Good	0.601	[0.553 - 0.649]	0.475	[0.409 - 0.541]	24.641	< .001
N Bad	0.607	[0.551 - 0.662]	0.479	[0.413 - 0.544]	19.013	< .001
l Good	0.444	[0.387 - 0.501]	0.546	[0.485 - 0.607]	12.101	< .001
I Bad	0.568	[0.501 - 0.635]	0.572	[0.511 - 0.633]	0.016	.899

Mean Parameter Estimate Comparison between Anger Sensitivity Groups: Good-Intent condition and Bad-Intent Condition

Note. Table shows mean parameter estimates and 95% CI for sensitivity to consequences, sensitivity to norms, and preference for agent-inaction compared between anger-sensitivity groups in both good-intent and bad-intent conditions. Comparison of individual parameter estimates between groups are shown with ΔG^2 model fit measures and *p* values.

anger-sensitivity on moral judgement is a reduction in sensitivity to norms regardless of the perceived-intent of the moral agent.

I parameter estimates in the good-intent condition were significantly lesser than 0.5 in the lower anger-sensitivity group (M = 0.444, 95% CI [0.387 - 0.501]), $\Delta G^2(1) = 3.709$, p = 0.054, and significantly greater than 0.5 in the higher anger-sensitivity group (M = 0.546, 95% CI [0.485 - 0.607]), $\Delta G^2(1) = 2.157$, p = 0.142, with significantly greater I scores in the higher anger-sensitivity group, $\Delta G^2(1) = 12.101$, p < .001, d = 0.571 (see Table 4). I parameter estimates in the bad-intent condition were significantly greater than 0.5 in the lower anger-sensitivity group (M = 0.568, 95% CI [0.501 - 0.635]), $\Delta G^2(1) = 3.912$, p = 0.048, and in the higher anger-sensitivity group (M = 0.572, 95% CI [0.511 - 0.633]), $\Delta G^2(1) = 5.421$, p = 0.02, however, no significant difference was observed between groups, $\Delta G^2(1) = 0.016$, p = 0.899 (see Table 4). These results suggest that yet another a main effect of increased anger-sensitivity on moral judgement, is an increased preference for agent-inaction when considering perceived good-intent agents, while leaving preference for agent-inaction when considering perceived bad-intent agents unaffected. Anger-sensitivity group comparisons suggest that greater anger-sensitivity does influence the effects of perceived agent intent on moral judgement. Contrary to expectations however, greater anger-sensitivity corresponded with a reduction in intent-effects on I parameter scores due to a significantly greater preference for agent-inaction in the higher anger-sensitivity group than in the low anger-sensitivity group in the good-intent condition. Also contrary expectations, higher anger-sensitivity corresponded with significantly lower N parameter scores in both intent conditions, while having no significant effect on N parameter differences between intent conditions, suggesting that anger reduces sensitivity to norms regardless of the perceived intent of the agent being judged. In addition, the results of this study indicate a significantly lower C parameter estimate in the bad intent condition in the higher anger-sensitivity group. This suggests that, while preference for agent-inaction is unaffected by anger-sensitivity, greater anger-sensitivity is associated with reduced sensitivity to norms and consequences when judging moral agents perceived to have bad intent.

Discussion

The current experiment sought to explore the effects of perceived agent intent on preference for agent-inaction and sensitivity to norms and consequences during moral judgement, as well as to measure the extent to which these effects varied depending on participant anger-sensitivity. The results of this experiment supported the first hypothesis, finding a significantly greater preference for agent-inaction in the bad-intent condition. The second and third hypotheses were not supported, with no significant differences measured in mean C and N parameter estimates between intent conditions. While, as expected, CNI parameters were found to vary depending on participant anger-sensitivity, the fourth hypothesis was also not supported as the expected positive association between greater angersensitivity and greater intent-effects on N and I parameters was not observed. Instead, greater anger-sensitivity corresponded with a reduction in differences between intent conditions, such that no significant differences in CNI scores remained. While I parameter estimates in the bad-intent condition remained relatively stable between anger groups, preference for agent-inaction did vary between anger groups in the good intent condition, such that a greater preference for agent-inaction was observed in the higher anger-sensitivity group. Anger analysis also revealed that sensitivity to norms was measured as lower in the higher angersensitivity group than in the lower anger-sensitivity group in both intent conditions.

Results supporting the first hypothesis are consistent with the most reliable finding of existing moral judgement studies: that perceived bad-intent is positively associated with impermissibility judgements (Alicke, 2000; Cushman, 2008; Dubljević et al., 2018; Ginther et al., 2021; Hechler, & Kessler, 2018; Pizarro et al., 2003; Woolfolk et al., 2006). Results indicating intent-effects on the I parameter are also in line with suggested association between perceived bad-intent and increased impermissibility judgements across multiple norm and consequence manipulations (Dubljević et al., 2018). A greater preference for agentinaction found in the bad-intent condition also supports conventional descriptions of the virtue-ethical principle of 'right-action' (Svensson, 2010; Swanton, 2001), an evolutionary perspective on virtue-ethical development, suggesting that the perceived-intent of an individual influences judgements concerning the desirability of that individual's continued agency (Gintis et al., 2008), and examples of virtue ethical consideration in practice, such as harsher sentencing of criminal defendants perceived to have intended harm (Bright & Goodman-Delahunty, 2006; Nadler, 2012). Furthermore, the lack of significant intent-effects on C and N parameters found in this study, suggest that the effects of perceived-intent on preference for agent-inaction are unrelated to differences in sensitivity to consequences or norms.

When taken together, existing moral judgement studies supported the second hypothesis, suggesting that negative moral judgement is more strongly associated with aversion to norm transgression than with reaction to negative consequences (Miller et al., 2014), and that harm perceived as being intentional elicits affective reactions distinct from those elicited by harmful consequences (Hechler & Kessler, 2018; Russell, & Giner-Sorolla, 2011). In addition, the combined moral judgement literature suggest that increased impermissibility judgements are commonly associated with perceived norm transgression (Hechler & Kessler, 2018; Miller et al., 2014; Russell & Giner-Sorolla, 2011) and perceived bad-intent (Alicke, 2000; Cushman, 2008; Dubljević et al., 2018; Ginther et al., 2021; Hechler & Kessler, 2018; Pizarro et al., 2003; Woolfolk et al., 2006). Evidence that increased activity in brain regions associated with punishment decision making being additively, but not individually, predicted by perception of harmful acts and perceived harmful intent (Treadway et al., 2014) further supported this view. However, direct evidence of a relationship between perceived-intent and norm-sensitivity as it pertains to moral judgement, was less robust. While Dubliević et al., (2018) generated results suggesting a more reliable additive effect of bad-intent and bad-deed, than good-intent and good-deed, in predicting moral judgement, this difference was due to the extinction of the additive predictive power of good-intent and good deed in higher stakes scenarios. It may be that differences in associations between intent and norms between high and low stakes scenarios are not large enough to translate to a measurable difference when norms and consequences remain functionally constant. Therefore, as the current study did not manipulate severity of actions and consequences beyond those manipulations required for CNI analysis, it is unknown if perceived-intent would have had different effects in high-stakes and low-stakes scenarios. Similarly, Dubljević's et al. (2018) findings, suggesting different relationships between intent, norms, and consequences in high and low stake scenarios, suggests that a less severe

operationalisation of norm transgression may reveal a different pattern of intent-effects. Due to the life-sacrificing nature of normative transgressions inherent in the dilemmas used in this study, it may be that the perceived severity of norm transgression was such that sensitivity to norms remained constant despite manipulation of agent intent.

Failure to support the third hypothesis of this study was unsurprising in light of a failure to support the second hypothesis. This is because the hypothesised positive association between consequence-sensitivity and perceived good-intent was partly informed by an expected association between norm-sensitivity and perceived bad-intent, combined with research suggesting a negative association between norm and consequence sensitivities (Greene et al. 2004; Strohminger, et al., 2011; Trémolière & Bonnefon, 2014). However, as neither the C nor N parameters varied significantly between intent conditions, the suspected negative association between N and C scores proved not to be relevant. Similarly, as the good-intent condition was expected to score lower on N and I parameters than the bad-intent condition, it was expected that a corresponding proportionally larger sensitivity to consequences' would be observed. Likewise, a failure to support the second hypothesis, rendered this reasoning moot.

Contrary to expectations, variations in intent-effects between anger-sensitivity groups revealed a significant reduction in intent-effects at higher anger levels, such that no significant differences remained in the higher anger-sensitivity group. A greater preference for agent-inaction in the higher anger-sensitivity group within the good-intent condition explained the extinction of intent-effects between groups. Greater preference for inaction in the good-intent condition at higher anger levels supports existing literature linking anger with increased impermissibility judgements (Ginther et al., 2021; Hechler & Kessler, 2018; Landmann & Hess, 2017; Russell, & Giner-Sorolla, 2011). However, a reduction in I parameter differences between intent conditions at higher anger was unexpected. Furthermore, a significant main effect of anger-sensitivity on sensitivity to norms was observed, with lower norm-sensitivity in both intent conditions corresponding with greater anger-sensitivity. However, this did not translate to significant differences in N parameter estimates between anger-sensitivity groups.

Failure to support the fourth hypothesis may have been due to a misinterpretation of existing literature. While the existing moral judgement literature did support the fourth hypothesis, interpreting the anger literature more generally as supporting a hypothesised increase in intent-effects stemming from greater reliance on virtue-ethical heuristics may have been flawed. An alternative interpretation of the anger literature is that the cognitive resource requirement of virtue-ethical consideration is such that a reduced capacity for problem solving and executive cognition associated with increased anger (Cox & Harrison, 2008; Gilam & Hendler, 2015) reduces participant capacity to integrate virtue-ethical information into the decision making process. This would explain the reduction in intent-effects in the greater anger-sensitivity group observed in the current study. Another potential limitation of anger-sensitivity results is the uneven number of participants between lower and higher anger-sensitivity groups within intent conditions, particularly in the good intent condition. As uneven allocation of participants may have contributed to reduced accuracy of findings, this should be taken into consideration when interpreting results.

While not directly related to the current studies hypotheses, some notable main effects of anger were also observed. In addition to a greater preference for agent-inaction observed at higher anger levels in the good intent condition, greater anger-sensitivity was associated with a significant reduction in norm-sensitivity in both intent conditions. This suggests that individuals who are more sensitive to anger arousal are not only less influenced by intenteffects, but also base their judgement decisions less on normatively prescribed behaviour than their less-angry counterparts. This finding was in contrast to existing moral judgement

31

literature, which suggests a positive association between feelings of anger and perception of intentional norm transgression (Ginther et al., 2021; Landmann & Hess, 2017; Russell, & Giner-Sorolla, 2011). However, similarly to the reduction in intent-effects on the I parameter at greater anger-sensitivity, a blanket reduction in norm-sensitivity observed in the higher anger-sensitivity group may be attributable to anger-related difficulties with problem solving and executive cognition (Cox & Harrison, 2008; Gilam & Hendler, 2015), as well as with the identification and integration of relevant information during decision making (Ask & Granhag, 2007). Results also revealed significantly lower N and C parameter scores in the bad-intent condition in the higher anger-sensitivity group. This suggests that, while preference for agent-inaction is unaffected by anger-sensitivity when considering bad-intent agents, greater anger-sensitivity is associated with less sensitivity to both norms and consequences during moral judgement of perceived bad-intent agents. Interestingly, the significant main effects of anger observed in the current study are in contrast to the lack of anger-effects observed in CNI moral-action experimentation (Gawronski et al., 2018). Combined results suggest that anger has a more significant effect on moral-judgement than on moral-action decision-making.

Implications and Recommendations

The current study has served as an initial foray into the direct and independent measurement of intent-effects on sensitivity to norms, sensitivity to consequences and preference for agent-inaction during moral judgement. The significant effect of intent on preference for agent-inaction observed advocates for the continued consideration of virtueethical influences during moral judgement experimentation. The results of this study also contribute to a more detailed understanding of moral judgement, suggesting that while perceived-intent influences impermissibility judgements, the intent of an individual has no significant bearing on perception of the rightness or wrongness of the act, or the nature of corresponding consequences. Furthermore, comparison of CNI scores between angersensitivity groups suggested that intent-effects on preference for agent-inaction were nullified when the moral judge is sufficiently sensitive to anger. If true, the implications of this finding could be crucial to developing a more complete picture angers influence on practical moral judgement tasks such as judicial proceedings, or indeed any proceeding in which the judgment of an individual would ideally be influenced by consideration of intent. These results suggest that it may be advisable, for example, to take the ambient anger level of jury members into account into account when considering verdicts. Similarly, the finding that anger mitigates intent-effects on agent-inaction preference may contribute to a greater understanding of the effects of anger on attempts at conflict resolution. An awareness that increased anger may inhibit an individual's capacity to consider their disputant's intentions as relevant to moral judgement decisions has the potential to aid in conflict resolution and conflict mediation.

The blanket reduction in norm-sensitivity observed in the higher anger-sensitivity group also has noteworthy implications for moral judgement in practice. This finding suggests that the moral judgements of those with a greater sensitivity to anger, are less influenced by the presence or absence of norm transgression, than those less sensitive to anger. This may be particularly useful information in the context of judicial proceedings, as consideration of the actions, corresponding consequences, and mental state of the defendant, are described as necessary considerations when assessing blameworthiness, as it pertains to criminal law (Nadler, 2012). Furthermore, the results of this study suggest that greater angersensitivity is associated with less sensitivity to both norms and consequences during moral judgement of perceived bad-intent agents, suggesting that the combined effects of greater anger-sensitivity and perceived bad-intent translate to moral judgements lacking in consideration of norms or consequences. Similarly, the results of this study suggest that

greater anger-sensitivity is associated with reduced norm sensitivity when considering the actions of agents perceived to have good-intent, leaving only the influence of perceived consequences relatively unaffected.

Future research aimed at expanding on, or otherwise addressing, the limitations of this study may include manipulation of high-stakes vs low-stakes scenarios. It may be that the transgressive severity of causing an individual's death promotes norm-sensitivity such that views cannot be swayed by the perceived-intent of the moral agent involved. Investigating the differences in intent-effects on CNI measures between higher and lower stakes scenarios is recommended to explore this issue. Secondly, it is possible that combined primacy and recency effects of test items, beginning with agent description and ending with description of intent, may have been associated with a relatively lower level of norm and consequence salience within dilemma items. Investigation of factors other than degree of harmful intent, which might have contributed to the intent-effects measured in this experiment, such as primacy and recency effects, is advised. In order to address limited interpretation of variations in intent-effects between anger-sensitivity groups, it is recommended that future research include investigation of the nature and quantity of cognitive resources required of virtue ethical consideration during moral judgement. Lastly, it is recommended that future studies compare anger effects on CNI scores between moral-action and moral-judgement conditions in order to explore the differing effects of anger on moral-action vs moraljudgement. It is expected that this would likely provide a more complete picture of angers role in two-way moral judgement scenarios such as interpersonal conflict.

- Ask, K., & Granhag, P. A. (2007). Hot cognition in investigative judgments: The differential influence of anger and sadness. *Law and human behavior*, *31*(6), 537-551. doi: 10.1007/s10979-006-9075-3
- Asmundson, G. J., LeBouthillier, D. M., Parkerson, H. A., & Horswill, S. C. (2016). Traumaexposed community-dwelling women and men respond similarly to the DAR-5 anger scale: Factor structure invariance and differential item functioning. *Journal of traumatic stress*, 29(3), 214-220. doi: 10.1002/jts.22098
- Avramova, Y. R., & Inbar, Y. (2013). Emotion and moral judgment. *Wiley Interdisciplinary Reviews: Cognitive Science*, 4(2), 169-178. doi: 10.1002/wcs.1216
- Bright, D. A., & Goodman-Delahunty, J. (2006). Gruesome evidence and emotion: anger, blame, and jury decision-making. *Law and human behavior*, 30(2), 183. doi: 10.1007/s10979-006-9027-y
- Bostyn, D. H., Sevenhant, S., & Roets, A. (2018). Of mice, men, and trolleys: Hypothetical judgment versus real-life behavior in trolley-style moral dilemmas. *Psychological science*, *29*(7), 1084-1093. doi: 10.1177/0956797617752640
- Bluhm, R. (2014). No need for alarm: A critical analysis of Greene's dual-process theory of moral decision-making. *Neuroethics*, 7(3), 299-316. doi: 10.1007/s12152-014-9209-0
- Ceschi, G., Selosse, G., Nixon, R. D., Metcalf, O., & Forbes, D. (2020). Posttraumatic anger: a confirmatory factor analysis of the Dimensions of Anger Reactions Scale-5 (DAR-5)–French adaptation. *European journal of psychotraumatology*, *11*(1), 1731127. doi: 10.1080/20008198.2020.1731127
- Conway, P., & Gawronski, B. (2013). Deontological and utilitarian inclinations in moral decision making: a process dissociation approach. *Journal of personality and social psychology*, *104*(2), 216. doi: 10.1037/a0031021

Cox, D. E., & Harrison, D. W. (2008). Models of anger: contributions from psychophysiology, neuropsychology and the cognitive behavioral perspective. *Brain Structure and Function*, 212(5), 371-385. doi: 10.1007/s00429-007-0168-7

- Damasio, A. (2007). Damage to the prefrontal cortex increases utilitarian moral judgements. *Nature*, *446*(7138), 908-911. doi: 10.1038/nature05631
- Dubljević, V., Sattler, S., & Racine, E. (2018). Deciphering moral intuition: How agents, deeds, and consequences influence moral judgment. *PloS one*, *13*(10), e0204631. doi: 10.1371/journal.pone.0204631
- Everett, J. A., Pizarro, D. A., & Crockett, M. J. (2016). Inference of trustworthiness from intuitive moral judgments. *Journal of Experimental Psychology: General*, 145(6), 772. doi: 10.1037/xge0000165
- Forbes, D., Alkemade, N., Mitchell, D., Elhai, J. D., McHugh, T., Bates, G., ... & Lewis, V. (2014). Utility of the Dimensions of Anger Reactions–5 (DAR-5) scale as a brief anger measure. *Depression and Anxiety*, 31(2), 166-173. doi: 10.1002/da.22148
- Gawronski, B., Armstrong, J., Conway, P., Friesdorf, R., & Hütter, M. (2017). Consequences, norms, and generalized inaction in moral dilemmas: The CNI model of moral decision-making. *Journal of Personality and Social Psychology*, *113*(3), 343. doi: 10.1037/pspa0000086
- Gawronski, B., Conway, P., Armstrong, J., Friesdorf, R., & Hütter, M. (2018). Effects of incidental emotions on moral dilemma judgments: An analysis using the CNI model. *Emotion*, 18(7), 989. doi: 10.1037/emo0000399
- Ginther, M. R., Hartsough, L. E., & Marois, R. (2021). Moral outrage drives the interaction of harm and culpable intent in third-party punishment decisions. *Emotion*. doi: 10.1037/emo0000950

- Greene, J. D., Nystrom, L. E., Engell, A. D., Darley, J. M., & Cohen, J. D. (2004). The neural bases of cognitive conflict and control in moral judgment. *Neuron*, 44(2), 389-400. doi: 10.1016/j.neuron.2004.09.027
- Greene, J. D., Sommerville, R. B., Nystrom, L. E., Darley, J. M., & Cohen, J. D. (2001). An fMRI investigation of emotional engagement in moral judgment. *Science*, 293(5537), 2105-2108. Retrieved from https://www.jstor.org/stable/3084564
- Greene, J. D., Morelli, S. A., Lowenberg, K., Nystrom, L. E., & Cohen, J. D. (2008).
 Cognitive load selectively interferes with utilitarian moral judgment. *Cognition*, 107(3), 1144-1154. doi: 10.1016/j.cognition.2007.11.004
- Greene, J., & Haidt, J. (2002). How (and where) does moral judgment work?. Trends in cognitive sciences, 6(12), 517-523. Retrieved from https://doi.org/10.1016/S1364-6613(02)02011-9
- Gawronski, B., Conway, P., Armstrong, J., Friesdorf, R., & Hütter, M. (2018). Effects of incidental emotions on moral dilemma judgments: An analysis using the CNI model. *Emotion*, 18(7), 989. Retrieved from http://dx.doi.org/10.1037/emo0000399
- Gilam, G., & Hendler, T. (2015). Deconstructing anger in the human brain. *Social behavior* from rodents to humans, 257-273. doi: 10.1007/7854_2015_408
- Goldberg, J. H., Lerner, J. S., & Tetlock, P. E. (1999). Rage and reason: The psychology of the intuitive prosecutor. *European Journal of Social Psychology*, 29(5-6), 781-795.
 Retrieved from https://doi.org/10.1002/(SICI)1099-0992(199908/09)29:5/6<781::AID- EJSP960>3.0.CO;2-3
- Goulart, A. C., Bismarchi, D., Rienzo, M., Syllos, D. H., & Wang, Y. P. (2020). Dimensions of Anger Reactions (DAR-5): a useful screening tool for anger in the general population. *International Journal of Psychiatry in Clinical Practice*, 1-9. Retrieved from https://doi.org/10.1080/13651501.2020.1821893

Haidt, J. (2001). The emotional dog and its rational tail: a social intuitionist approach to moral judgment. *Psychological review*, 108(4), 814. Retrieved from https://doi.org/10.1037/0033-295X.108.4.814

- Haidt, J., & Baron, J. (1996). Social roles and the moral judgement of acts and omissions. *European journal of social psychology*, 26(2), 201-218. Retrieved from
 https://doi.org/10.1002/(SICI)1099-0992(199603)26:2<201::AIDEJSP745>3.0.CO;2-J
- Hawthorne, G., Mouthaan, J., Forbes, D., & Novaco, R. W. (2006). Response categories and anger measurement: do fewer categories result in poorer measurement?. *Social Psychiatry and Psychiatric Epidemiology*, *41*(2), 164-172. doi: 10.1007/s00127-005-0986-y
- Hayashi, H. (2015). Omission bias and perceived intention in children and adults. *British* Journal of Developmental Psychology, 33(2), 237-251. doi: 10.1111/bjdp.12082
- Hechler, S., & Kessler, T. (2018). On the difference between moral outrage and empathic anger: Anger about wrongful deeds or harmful consequences. *Journal of Experimental Social Psychology*, 76, 270-282. doi: 10.1016/j.jesp.2018.03.005
- Huebner, B., Dwyer, S., & Hauser, M. (2009). The role of emotion in moral psychology. *Trends in cognitive sciences*, 13(1), 1-6. Retrieved from https://doi.org/10.1016/j.tics.2008.09.006
- Körner, A., Deutsch, R., & Gawronski, B. (2020). Using the CNI model to investigate individual differences in moral dilemma judgments. *Personality and Social Psychology Bulletin*, 46(9), 1392-1407. doi: 10.1177/0146167220907203
- *Kroneisen, M., & Heck, D. W. (2020).* Interindividual differences in the sensitivity for consequences, moral norms, and preferences for inaction: Relating basic personality

traits to the CNI model. *Personality and Social Psychology Bulletin, 46(7), 1013-1026.* doi: 10.1177/0146167219893994 j

- Landmann, H., & Hess, U. (2017). What elicits third-party anger? The effects of moral violation and others' outcome on anger and compassion. *Cognition and emotion*, *31*(6), 1097-1111. doi: 10.1080/02699931.2016.1194258
- Luke, D. M., & Gawronski, B. (2021). Political Ideology and Moral Dilemma Judgments: An Analysis Using the CNI Model. *Personality and Social Psychology Bulletin*, doi: 10.1177/0146167220987990
- Lieberman, M. D. (2000). Intuition: a social cognitive neuroscience approach. *Psychological bulletin*, 126(1), 109. doi: 10.1037//0033-2909.126.1.109
- Lipsey, M. W., & Wilson, D. S. (2001). *Practical meta-analysis*. Thousand Oaks, CA: Sage. Retrieved from https://psycnet.apa.org
- Miller, R. M., Hannikainen, I. A., & Cushman, F. A. (2014). Bad actions or bad outcomes?Differentiating affective contributions to the moral condemnation of harm. *Emotion*, *14*(3), 573. doi: 10.1037/a0035361
- Nadler, J. (2012). Blaming as a social process: The influence of character and moral emotion on blame. *Law and contemporary problems*, 75(2), 1-31. Retrieved from https://www.jstor.org/stable/23216756
- Novaco, R. W. (1975). Dimensions of anger reactions. *Irvine, CA: University of California*, 639. doi: 10.1002/jclp.22757
- Pizarro, D., Uhlmann, E., & Salovey, P. (2003). Asymmetry in judgments of moral blame and praise: The role of perceived metadesires. *Psychological science*, *14*(3), 267-272. doi: 10.1111/1467-9280.03433
- Prinz, J. (2006). The emotional basis of moral judgments. *Philosophical explorations*, 9(1), 29-43. doi: 10.1080/13869790500492466

Robinson, J. S., Page-Gould, E., & Plaks, J. E. (2017). I appreciate your effort: Asymmetric effects of actors' exertion on observers' consequentialist versus deontological judgments. *Journal of Experimental Social Psychology*, 73, 50-64. doi: 10.1016/j.jesp.2017.06.005

- Russell, P. S., & Giner-Sorolla, R. (2011). Moral anger, but not moral disgust, responds to intentionality. *Emotion*, *11*(2), 233. doi: 10.1037/a0022598
- Schnall, S., Haidt, J., Clore, G. L., & Jordan, A. H. (2008). Disgust as embodied moral judgment. *Personality and social psychology bulletin*, 34(8), 1096-1109. doi: 10.1177/0146167208317771
- Strohminger, N., Lewis, R. L., & Meyer, D. E. (2011). Divergent effects of different positive emotions on moral judgment. *Cognition*, 119(2), 295-300. doi: 10.1016/j.cognition.2010.12.012
- Svensson, F. (2010). Virtue ethics and the search for an account of right action. *Ethical theory and moral practice*, *13*(3), 255-271. doi: 10.1007/s10677-009-9201-7
- Swanton, C. (2001). A virtue ethical account of right action. *Ethics*, *112*(1), 32-52. Retrieved from https://www.journals.uchicago.edu/
- Tannenbaum, D., Uhlmann, E. L., & Diermeier, D. (2011). Moral signals, public outrage, and immaterial harms. *Journal of Experimental Social Psychology*, 47(6), 1249-1254. doi: 10.1016/j.jesp.2011.05.010
- Thomson, J. J. (1976). Killing, letting die, and the trolley problem. *The Monist*, *59*(2), 204-217. Retrieved from https://www.jstor.org/stable/27902416
- Treadway, M. T., Buckholtz, J. W., Martin, J. W., Jan, K., Asplund, C. L., Ginther, M. R., ... & Marois, R. (2014). Corticolimbic gating of emotion-driven punishment. *Nature neuroscience*, 17(9), 1270-1275. doi: 10.1038/nn.3781

- Trémolière, B., & Bonnefon, J. F. (2014). Efficient kill–save ratios ease up the cognitive demands on counterintuitive moral utilitarianism. *Personality and Social Psychology Bulletin*, 40(7), 923-930. doi: 10.1177/0146167214530436
- Uhlmann, E. L., Pizarro, D. A., & Diermeier, D. (2015). A person-centered approach to moral judgment. *Perspectives on Psychological Science*, 10(1), 72-81. doi: 10.1177/1745691614556679
- Walker, L. J. (1999). The perceived personality of moral exemplars. *Journal of Moral Education*, 28(2), 145-162. doi: 10.1080/030572499103188

Appendices

- A Dimensions of Anger Reactions 5 item (DAR-5) Scale: Items and Measurement
- B Ethics Approval Form
- C Participant Information and Consent Form

See Supplemental Materials for dilemma lists

Appendix A

Dimensions of Anger Reactions - 5 item (DAR-5) Scale: Items and Measurement

Thinking *over the past 4 weeks*, circle the number under the option that best describes the amount of time you felt that way.

1: None or almost none, 2: A little of the time, 3: Some of the time, 4: Most of the time, 5: All of the time

- 1. I found myself getting angry at people or situations.
- 2. When I got angry, I got really mad.
- 3. When I got angry, I stayed angry.
- 4. When I got angry at someone I wanted to hit them.
- 5. My anger prevented me from getting along with people as well as I'd have liked to.

Note. The DAR-5 is an abbreviation of the Novaco (1975) anger scale (Forbes et al., 2014)

Appendix B

Ethics Approval Form



Ethics Approval Letter

27/07/2021

To: Dr Palmer

Project ID: 17588

Project Title: Moral decision-making study

The amendment received in support of the above named project has been approved by the University of Tasmania Human Research Ethics Committee on 27 July 2021.

Approval has been granted for the following:

- Additional Staff: Anna Hopwood, Zachary Richards, Eli Halliwell
- Remove Staff Emily Reid

Submission Document Name	Submission Document File Name	Submission Document Type	Submission Document Date	Submission Document Version
Difficulties in Emotion Regulation Scale (DERS)	Difficulties in Emotion Regulation Scale (DERS).pdf	Other Documents	13/07/2021	1
Empathic Response Scale	Empathic Response Scale.docx	Other Documents	13/07/2021	1
Social-Sciences-Minimal-Risk- Application-moral decisions v3 - track changes	Social-Sciences-Minimal-Risk- Application-moral decisions v3 - track changes.doc	Application (Tracked)	19/07/2021	3
Social-Sciences-Minimal-Risk- Application-moral decisions v3 - clean	Social-Sciences-Minimal-Risk- Application-moral decisions v3 - clean.doc	Application (Tracked)	19/07/2021	3
Information Sheet v3 track changes	Information Sheet v3 track changes.docx	PARTICIPANT INFORMATION AND CONSENT FORM	19/07/2021	3
Information Sheet v3 clean	Information Sheet v3 clean.docx	PARTICIPANT INFORMATION AND CONSENT FORM	19/07/2021	3
Dimensions of Anger Scale (DAR-5)	Dimensions of Anger Scale (DAR-5).docx	Other Documents	19/07/2021	1

Please ensure that all investigators involved with this project have cited the approved versions of the documents listed within this letter and use only these versions in conducting this research project.

This approval constitutes ethical clearance by the University of Tasmania Human Research Ethics Committee. The decision and authority to commence the associated. research may be dependent on factors beyond the remit of the ethics review process. For example, your research may need ethics clearance from other organisations or review by your research governance coordinator or Head of Department. It is your responsibility to find out if the approvals of other bodies or authorities are required. It is recommended that the proposed research should not commence until you have satisfied these requirements.

In accordance with the <u>National Statement on Ethical Conduct in Human Research</u>, it is the responsibility of institutions and researchers to be aware of both general and specific legal requirements, wherever relevant. If researchers are uncertain they should seek legal advice to confirm that their proposed research is in compliant with the relevant laws. University of Tasmania researchers may seek legal advice from Legal Services at the University.

The University of Tasmania Human Research Ethics Committee (HREC) operates under and is required to comply with the National Statement on the Ethical Conduct in Human Research.

Therefore, the Chief Investigator's responsibility is to ensure that:

(1) All investigators are aware of the terms of approval, and that the research is conducted in compliance with the HREC approved protocol or project description.

(2) Modifications to the protocol do not proceed until approval is obtained in writing from the HREC. This includes, but is not limited to, amendments that:

- are proposed or undertaken in order to eliminate immediate risks to participants;
 may increase the risks to participants;
- significantly affect the conduct of the research; or
 involve changes to investigator involvement with the project.

Appendix C

Participant Information and Consent Form



Moral decision-making study

Participant Information

1. Invitation

You are invited to participate in a *Moral Decision-making* study. This study is being conducted as part of Eli Halliwell's Honours degree. Eli is a fourth-year student under the supervision of Psychology Senior Lecturer Dr. Matt Palmer.

2. What is the purpose of this study?

The purpose of this study is to investigate factors that influence how people make moral decisions.

3. Why have I been invited to participate?

You have been invited to participate in the study as you expressed an interest and you meet all eligibility requirements. Your participation is completely voluntary and there will be no negative consequences if you decide to withdraw. Your responses will be completely anonymous. Withdrawing will have no impact on your studies, results or your involvement with the university. You can withdraw at any point during this study.

4. What will I be asked to do?

You will be asked to read some hypothetical scenarios and answer some questions about the scenarios. Some of the scenarios involve moral dilemmas. For example, you may be asked whether it is acceptable to sacrifice one person's life to save a group of other people. You will also be asked to provide some basic information about yourself (e.g., age, sex). The study will take around 30 minutes in total, completed in a single session.

5. Are there any possible benefits from participation in this study?

Your participation in this study will not provide you with any direct benefits. However, this research will contribute to a greater understanding of how people make moral decisions.

6. Are there any possible risks from participation in this study?

There are no specific risks anticipated with participation in this study. However, in the unlikely event that you experience an emotional or personal response as a result of participation in this study, you can leave the study at any time.

7. What if I change my mind during or after the study?

You are not required to complete this study once you start. You can withdraw at any time with no explanation. If you leave the website or your data is not complete, it will be deleted. If you change your mind after completing the study, we will not be able to re-identify your data and will not be able to remove it (because it will be stored in anonymous form).

8. What will happen to the information when this study is over?

Your data will be stored in a password protected folder on the UTAS Psychology network drive for at least five years after any publications (e.g., in academic journals) that involve the data. After this period, the data will be archived. Only the researchers associated with this project (including this study and other related studies) will have access to the raw data. All of your responses will be completely anonymous.

9. How will the results of the study be published?

Results from the study will be used in Eli Halliwell's Honours thesis. Results from this study and other related studies will be submitted to an academic journal for publication.

10. What if I have questions about this study?

If you have any queries or concerns about the research please do not hesitate to contact Matt Palmer: <u>matt.palmer@utas.edu.au</u>

This study has been approved by the University of Tasmania Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study, you can contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 6254 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. You will need to quote ethics reference number H0017588.

Moral Decision-making Study

Participant Consent Form

- 1. I agree to take part in the research study named above.
- 2. I have read and understood the Information Sheet for this study.
- 3. The nature and possible effects of the study have been explained to me.
- 4. I understand that the study involves participating in a moral decision-making task in which I will read information about hypothetical scenarios and answer some questions about the scenarios. Additionally, I understand that the researcher will ask me to complete some brief questionnaires. These tasks will take approximately 30 minutes total to complete in total.
- 5. I understand that participation involves no foreseeable risks.
- 6. I understand that once I have finished participating in the study, my data will be archived in anonymous form (so that my data cannot be identified as mine) and that data from this project will be securely stored on the University of Tasmania premises for at least five years from the publication of the study results.
- 7. Any questions that I have asked have been answered to my satisfaction.
- 8. I understand that the researchers will maintain confidentiality and that any information I supply to the researcher will be used only for the purposes of the research project (which will include this study and other related studies).
- 9. I understand that the results of the study (and other related studies) will be published in such a way that I cannot be identified as a participant.
- 10. I understand that my participation is voluntary and that I may withdraw at any time without any effect.

I understand that I will not be able to withdraw my data after completing the experiment as my data will be anonymous.

By reading this information sheet and consent form, and continuing to the next page, you indicate your willingness to proceed in the experiment.

Thank you for your participation! Your time is very much appreciated.