The Impact of Intentions and Omissions On Moral Judgments Across Domains

Author: Natalie Jane Blahunka

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THE IMPACT OF INTENTIONS AND OMISSIONS ON MORAL JUDGMENTS ACROSS DOMAINS

NATALIE BLAHUNKA
BOSTON COLLEGE DEPARTMENT OF PSYCHOLOGY
ADVISORS: DR. LIANE YOUNG AND JAMES DUNGAN

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ABSTRACT

Moral psychologists disagree over whether descriptively different moral violations represent distinct cognitive domains or are in fact unified by common cognitive mechanisms. The Moral Foundations Theory (MFT; Haidt, 2007) offers five different domains of moral transgressions: Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity. Both intentionality and omission bias (e.g. omissions such as letting someone die being judged less harshly than actions such as killing someone) have been shown to impact moral judgments; however, it remains unclear how these rules modulate judgments across moral transgressions of various types. Here, we investigate the role of intentionality and omission bias across different moral violations to determine if the divide between moral domains represent true cognitive, (as opposed to descriptive), differences. We utilized a 2 x 2 x 5 design to create stories across the 5 domains posited by MFT that were intentional/accidental cases of actions/omissions. Importantly, this study also looks at four distinct moral judgments of wrongness, responsibility, blameworthiness, and punishment to assess the role of these rules across judgments. We found that intent and action play different roles across judgments, particularly when comparing wrongness and punishment. Intent seems to matter more for wrongness, whereas action matters more for punishment. Further, these rules also differ across domains. We found that intent matters more for the individualizing foundations of harm and fairness (versus the binding foundations of ingroup, authority, and purity) in judgments of wrongness and punishment. The difference between action and omission is also more important for the individualizing foundations for punishment. These data suggest intentionality and omission bias manifest themselves uniquely across moral judgments and domains and provide evidence that there are meaningful differences between domains.
INTRODUCTION

Morality: One thing or many things?

There is an ongoing debate in moral psychology over the foundations of morality. As morality is an incredibly abstract concept that appears to vary greatly across cultures and individuals, psychologists have worked to unify morality in concrete, measurable ways that can be scientifically studied. Moral psychologists have debated over the basis of moral transgressions, providing support for several theories and models in an attempt to better understand morality as a whole. The fundamental question remains: Is morality one thing or many things (Dungan & Young, in press)? Are there no common unifying components underlying the seemingly limitless amount of moral transgressions or do philosophers like Kant and his categorical imperative of universality tell the correct story?

Although the details of moral transgressions vary substantially, Gray et al. (2012) represent the argument of morality as one thing. They propose that the moral dyad of harm between an agent and a patient is the fundamental component underlying and unifying all of morality. Gray et al. (2012) suggest that all moral transgressions can be reduced to this moral dyad of an “intentional agent and suffering patient”, and this model then operates as a major top-down influence in the perception and judgment of moral transgressions and serves as the foundation for the rest of morality. Even in cases where the two roles of the moral dyad are not explicit or the harm is somewhat ambiguous, there is still an implicit perception of suffering caused intentionally by another as a result of the powerful top-down influence exerted by the moral dyad. Gray et al. (2012) demonstrate that the moral dyad simply provides a rough form or outline of intentional harm and suffering between two figures, but the specific content of each dyad, as evidenced by the variety of moral transgressions within our world, is highly variable.
In contrast, others have argued that the moral dyad is a far too limited, simplistic view of morality. When we observe the world, morality is in fact much more complex and cannot be contained by one, unifying component, but instead should be represented as many things. Graham et al. (2009, 2011) have supported what is known as the Moral Foundations Theory, or that moral transgressions cannot be limited to harm within this dyad, but instead span across five distinct moral domains of Harm/Care, Fairness/Reciprocity, Ingroup/Loyalty, Authority/Respect, and Purity/Sanctity. This theory would argue, for example, that shooting someone (a harm violation) is perceived and judged psychologically differently than incest (a purity violation). This research has helped to delineate the variability of moral transgressions as falling into these five domains and supports that moral cognition relies on several processes. Further, it seems that individual, cultural, and political differences might strongly influence the prioritization and endorsement of these moral domains, and previous research has demonstrated how varying beliefs affect our moral judgments. Graham et al. (2009) explained that certain domains, specifically harm and fairness, are emphasized in society to protect the rights of individuals. On the other hand, domains of ingroup, authority and purity emphasize the importance of groups and bind individuals to others and to duties and expectations in order to maintain societal stability and minimize divergence from norms. Consequently, harm and fairness have been categorized as the “individualizing foundations” because the individual is the center of moral value while ingroup, authority, and purity are known as the “binding foundations” because they emphasize the group as the center of morality (Graham et al., 2009).

The dimensions versus domains argument (morality as one thing versus morality as many things) can be addressed by applying certain rules across these descriptively distinct domains (Dungan & Young, in press). The way in which these rules manifest themselves across domains
would further our understanding of moral cognition by lending support to theories on the foundations of morality. The Moral Dyad Theory would predict that these rules would not differ across moral transgressions because all moral judgments rely on one cognitive process. Reversely, the Moral Foundations Theory would predict that these rules should behave differently across domains because morality involves many distinct cognitive processes. If the application of rules across domains differs significantly, then these cognitive boundaries must not be solely theoretical, but might actually exist within moral cognition.

**Intentionality and the Omission Bias**

There are certain rules that seem to exert powerful influence over our moral judgments that perhaps can be used in determining whether the moral domains of harm, fairness, ingroup, authority, and purity represent true, psychologically meaningful boundaries. There are specific elements of reasoning about others that, when interpreted in a moral context, tend to impact our judgments in a consistent manner. Intuitively, people routinely judge accidental harm less harshly than intentional harm (Russell & Giner-Sorolla, 2011). This finding suggests that the perception of others’ mental states, especially intentionality, plays a decisive role in our moral judgments. However, the actual outcomes of events also influence our judgments, as there exists an outcome bias and even accidents are slightly judged (Young & Saxe, 2011). Furthermore, previous research has shown that when action, causation, and intention are varied, judgments of wrongness, permissibility, punishment and blame also shift (Cushman, 2008; DeScioli et al., 2011). It appears that judgments of wrongness and permissibility rely heavily on the perceived mental states of the agent, such as intention, whereas punishment depends more on the actual outcome of the event (Cushman, 2008). When making judgments of others in real-life cases of transgressions, different kinds of moral judgments frequently split. One example that comes
readily to mind is the distinction between wrongness and punishment for two separate drunk driving incidents (Cushman, in press). While driving drunk, Person A steers off the road and hits a tree, while Person B drives onto the sidewalk and hits a pedestrian. Judgments of wrongness for both characters will be relatively equal, but judgments of punishment will likely differ substantially based on the outcome.

Additionally, the means of achieving a particular outcome, or the way in which an agent commits an action, also influences the severity of moral judgments. Specifically, there seems to exist a robust omission bias in moral judgments such that transgressions of omission (ex. the doctor who let the terminally ill patient die) are judged as less morally wrong than transgressions of action (ex. the doctor who killed the terminally ill patient), even when intentions are held constant (DeScioli et al., 2011). Intentionality and the omission effect serve as key contributors to our ultimate moral judgments, and are basic to the processes involved in judging others. The intentional/accidental distinction seems more intuitive, but why exactly are omissions judged less harshly than actions? The action/omission distinction is thought to impact moral judgments via causal attribution such that in the case of the action, the agent is mentally more connected to the harm itself (Cushman & Young, 2011). This omission bias, also called the Doctrine of Doing and Allowing in philosophy, has been well documented in previous research. One experiment by DeScioli et al. (2011) involved an economic game between a “taker” and an “owner” in which the taker could choose to allocate the owner’s $1 between the two roles in one of four different allotments. One of these options was an omission-like response in that if the taker did not respond within a designated amount of time, they would receive $0.85 and the owner would be left with $0.00 (the taker was penalized $0.15 for letting the time run out). The inaction of the taker in not responding was considered an omission. DeScioli et al. (2011) demonstrated that
when punishment from a third-party observer was possible, the percentage of omission responses increased significantly from the no-punishment condition. Researchers inferred that less harsh denunciation from others exerts a powerful influence on people’s behavior to choose omissions rather than actions. These findings suggest that the preference for omission when committing a moral transgression or wrongdoing is more of a strategy, to avoid condemnation and punishment from others, than a bias.

Likewise, in a separate study, participants were presented with hypothetical scenarios in which they had the opportunity to choose whether or not to save victims from building detonations (DeScioli et al., 2011). They found that subjects were more likely to choose omission when there was less observable and less tangible evidence for this wrongdoing. However, when physical evidence could be observed for an omission, cases in which participants had to select to “opt out” of rescuing the victims from the detonations by pressing a button, the bias for omission disappeared because this omission choice was judged just as harshly as choosing directly to cause death to the victims. DeScioli et al. (2011) reasoned that the tendency to favor omission is because, in comparison to moral transgressions of action, omissions leave much less material evidence behind and therefore cause a reduction in the severity of moral judgments of others.

Taken together, this research provides evidence that both omissions and intentions seem to exercise immense influence on our moral judgments, in spite of there being nothing intrinsically moral about these two elements. One could intentionally or accidentally wear a blue shirt on a particular day, but this action is non-moral. Similarly, an agent could omit or commit to the same non-moral outcome. Both intentionality and omission are not necessarily tied to morality, yet they are frequently interpreted in a moral context and involved in the processes of
moral cognition. The distinction between intentional/accidental and action/omission seem to reliably predict moral judgments. The influence of non-moral elements like intentions and omissions is best demonstrated when the transgression being judged is within the harm domain. However, it remains unclear how our moral judgments of omission versus action and intentional versus accidental transgressions vary across all five of the moral domains. The research discussed above has led us to our present research questions. If these descriptively distinct moral domains of harm, fairness, ingroup, authority, and purity are true, how do non-moral elements such as intentionality and omission modulate moral judgments, and do they influence these judgments equally or are they weighted more heavily within certain domains? Do these authorities effectively constitute universal “rules” for morality or do they differ in their influence across moral domains?

Previous evidence suggests that the binding domains, specifically purity, may be far less flexible than the harm domain when making moral judgments because people do not consider intentionality to the same extent when judging violations of purity. Russell & Giner-Sorolla (2011) investigated which emotions respond to various types of moral transgressions and found that anger responds to harm and intentionality such that much less anger is elicited when judging accidental harm in comparison to intentional harm and judgments are less harsh. In contrast, disgust uniquely responds to violations pertaining to bodily norms and does not respond to intentionality, but only to whether or not the bodily norm violation actually occurred. Thus, accidental and intentional incest will both elicit disgust (Russell & Giner-Sorolla, 2011). In comparing harm and purity, Young & Saxe (2011) found that accidental harms are judged as significantly less morally wrong than accidental incest. Taken together, these data provide powerful evidence that intentionality plays a much smaller role in moral judgments of purity
violations than harm. Similarly, although the role of the omission bias across moral domains is less clear than intentionality, there is some evidence that it too matters less for purity. DeScioli et al. (2012) found that although the omission effect was observable in wrongness ratings across many different kinds of violations, the omission-action difference was smaller for sex-related offenses, which suggest that the bias might be enhanced for the individualizing domains and diminished for purity. Additionally, Haidt & Baron (1996) demonstrated that social contexts impact the influence of omissions on our moral judgments; the action-omission difference is diminished when judging others in close relationships involving higher role responsibility like authority and loyalty. In these cases, judgments are more outcome-based, but the preference for omissions is more pronounced in judgments of others perceived in lower-responsibility roles (Haidt & Baron, 1996). In summary, the flexibility of our judgments and the extent to which non-moral factors such as intentionality and the omission bias play a role in these judgments seem to vary across the five moral domains.

**Present Study**

Given the many factors influencing moral cognition, it remains unclear how intentionality and the omission bias interact with the moral domains, different moral judgments, and each other. The present study investigates the role of these two non-moral elements across the moral domains of harm, fairness, ingroup, authority, and purity and judgments of wrongness, responsibility, blameworthiness, and punishment. By applying intentions and omissions across the descriptively distinct moral domains, this experiment addresses the question of dimensions versus domains. If morality is one thing, we expect intentionality and the omission bias to operate similarly across domains. But if these domains represent true cognitive distinctions, then we expect these rules to operate differently across domains. We also predict to replicate biases of
intentionality and omission, and we expect that these rules will vary across the four moral judgments of wrongness, blame, punishment, and responsibility.

**METHODS:**

**Participants**

The participants in this experiment were all undergraduate students at Boston College who were recruited from the SONA program sign-ups and participated in the experiment to satisfy a course requirement or for a payment of $5. A total of 54 participants were tested (10 male and 44 female). The data from four participants were thrown out due to an error in counterbalancing, leaving a total of 50 participants’ data for analysis (9 male and 41 female). All subjects were notified that they could back out of the experiment at any time, signed a consent form before the experiment, and were debriefed after the experiment in accordance with the Internal Review Board at Boston College.

**Stimuli**

This study used a 5 (domains) x 2 (intentional/accidental) x 2 (action/omission) x 4 (judgments) stimuli design. We created stories about moral transgressions spanning the five domains. There were a total of twenty stories, four stories for each domain. An example of a harm transgression is John causing Ivan to have an allergic reaction, while a purity example is Eric having cyber sex with his sister (see Appendix I for the full stimuli set). The stories varied in intentionality of the agent (e.g. John knew about Ivan’s allergy versus John didn’t know) and in the action/omission of the agent (e.g. John told Ivan to eat the salad versus John did not say anything when Ivan ate the salad). Each story had four different possible endings that indicated the intentionality of the agent and the means of arriving at the outcome: intentional action, accidental action, intentional omission, and accidental omission.
Participants received only one of these endings for each story, but throughout the study, each participant received one of all four ending types for the five moral domains. Story order and endings were pseudo-randomized across participants. After each story, participants completed a series of four judgments (wrongness, responsibility, blameworthiness, and punishment) about the agent in the story. The order in which participants received these judgments was randomized across participants, but one particular participant received the four judgments in the exact same order for all twenty stories.

Before beginning this study, we also conducted a stimuli validation pretest and used Amazon’s Mechanical Turk to collect data from 622 participants. Participants received one story from a single domain and completed a series of judgments about the transgression. All participants were presented with the intentional action ending of the stimuli used in the present study. To ensure that the stories were being perceived within the intended domain, participants completed judgments pertaining to the five moral domains and were asked the following questions on a scale from 1 to 7: How harmful? How unfair? How disloyal? How disrespectful? How disgusting? How wrong? We also wanted to ensure that the stories did not differ substantially in overall wrongness. After collecting the data, we eliminated participants with no variability in their responses and then analyzed how each story was rated. Based on this feedback, some minor changes were made to the stimuli in order to minimize domain overlap. We additionally sought to make all of the stories roughly the same in length and maintained equal distribution of intention verbs (e.g. to know, to notice, to see) across domains.

**Procedure**

This study utilized a completely within-subject design. Participants came into lab and, after consenting, were asked to complete two computer tasks. The first task was completed
within PsychToolBox on MATLAB. The participants were asked to read a series of twenty short stories about a particular person’s behavior, actions, or interaction with another person. After each story, the participants were asked to make a series of four judgments about the agent in the story. The following questions appeared in the same sequence after each story and the order of the questions was randomized across participants: How morally wrong is this person? How responsible is this person for what occurred? How blameworthy is this person? How much should this person be punished for what happened? All questions were answered on a seven-point Likert scale, 1 being not at all and 7 being very much. The subsequent judgment question appeared on screen only after the participant responded, and the next story appeared after the participant completed all four judgments for the previous story.

I.

Kevin is hoping to sell his car and posts an ad in the local paper. The car is in poor condition, particularly the tires, which don’t hold pressure well and are about to go flat. A girl from Kevin’s school named Sally responds to his post and comes to look at the car. She lives in the same neighborhood just a few blocks away from Kevin. Sally asks about the condition of the car and, after listening to Kevin’s response, decides to rent the car. Soon after, Sally gets a flat tire, and she is responsible for the cost.

Kevin knew about the poor condition of the tires, but he lied to Sally, telling her that they were in good condition.

How morally wrong is this person?
Not at All 1 2 3 4 5 6 7 Very Much

II.

Kevin is hoping to sell his car and posts an ad in the local paper. The car is in poor condition, particularly the tires, which don’t hold pressure well and are about to go flat. A girl from Kevin’s school named Sally responds to his post and comes to look at the car. She lives in the same neighborhood just a few blocks away from Kevin. Sally asks about the condition of the car and, after listening to Kevin’s response, decides to rent the car. Soon after, Sally gets a flat tire, and she is responsible for the cost.

Kevin knew about the poor condition of the tires, but when answering Sally’s question, he did not mention the tires.

How responsible is this person for what occurred?
Not at All 1 2 3 4 5 6 7 Very Much

III.

Kevin is hoping to sell his car and posts an ad in the local paper. The car is in poor condition, particularly the tires, which don’t hold pressure well and are about to go flat. A girl from Kevin’s school named Sally responds to his post and comes to look at the car. She lives in the same neighborhood just a few blocks away from Kevin. Sally asks about the condition of the car and, after listening to Kevin’s response, decides to rent the car. Soon after, Sally gets a flat tire, and she is responsible for the cost.

Kevin knew about the poor condition of the tires, but he lied to Sally, telling her that they were in good condition.

How blameworthy is this person?
Not at All 1 2 3 4 5 6 7 Very Much

IV.

Kevin is hoping to sell his car and posts an ad in the local paper. The car is in poor condition, particularly the tires, which don’t hold pressure well and are about to go flat. A girl from Kevin’s school named Sally responds to his post and comes to look at the car. She lives in the same neighborhood just a few blocks away from Kevin. Sally asks about the condition of the car and, after listening to Kevin’s response, decides to rent the car. Soon after, Sally gets a flat tire, and she is responsible for the cost.

Kevin knew about the poor condition of the tires, but he lied to Sally, telling her that they were in good condition.

How much should this person be punished for what happened?
Not at All 1 2 3 4 5 6 7 Very Much
After completing all four judgments for each of the twenty stories, participants were then asked to complete a second computer task involving a short survey on Qualtrics. This survey collected information on demographics as well as political beliefs and orientation. In addition to their age and gender, participants were asked, “What best describes your political beliefs” and responded in three different ways on a scale from 1 (very liberal) to 7 (very conservative): In general, I am; When it comes to social issues, I am; When it comes to economic issues, I am. Within this survey, participants also completed the Moral Foundations Questionnaire (MFQ, Graham et al., 2011; Appendix II) to determine the importance of the different moral domains of harm, fairness, ingroup, authority, and purity to their moral-decision making process. The first part of the MFQ asked participants to rate on a scale from 0 to 5 how relevant different factors, relating to the moral domains, are to their judgments of right and wrong. Some examples include “Whether or not someone suffered emotionally” and “Whether or not someone violated standards of purity and decency”. In the second section of the MFQ, participants were asked to rate their agreement with various statements on a scale from 0 to 5. Statements included “Respect for authority is something all children need to learn”, “One of the worst things a person could do is hurt a defenseless animal”, “People should be loyal to their family members, even when they have done something wrong”, and “It can never be right to kill a human being.”
In the final part of the survey, participants completed the Action/Outcome Scale (Miller et al., in press; Appendix III) that assessed how upsetting various actions, outcomes, and control items were to participants if they were in those particular situations. Participants were always asked, “How much would it upset you to…?” and responded on a scale from 1 (not at all) to 7 (very much so). Action items included, “How much would it upset you to hold an empty gun that both you and your friend know is empty to your friend’s head and pull the trigger?”, and “How much would it upset you to stab a fellow actor in the neck during a play using a stage knife with a retractable blade?”. Some examples of outcome items were “How much would it upset you to see a stranger fall down the stairs?” and “How much would it upset you to listen to somebody have a tooth pulled when there is no anesthetic available?”. After finishing the Action/Outcome Scale, the survey was completed and the experiment ended. (We do not analyze the MFQ or Action/Outcome Scale in this paper, but there are hypotheses for when and why they would be important to measure; see Graham et al., 2011; Miller et al., in press). The computer tasks were followed by a short debriefing session in which participants were told more about the purpose of the study and could ask any questions. Because there was no time limit, participants took as long as they needed to complete the entire study. The experiment typically lasted between 20 and 30 minutes.

RESULTS: A JUDGMENT DIFFERENCE

All data and statistical analyses were conducted using Microsoft Excel and SPSS. Reported means are subtractions (e.g. mean intentional transgressions – mean accidental transgressions).
The Role of Intent and Action across Judgments

Consisted with previous research (Russell & Giner-Sorolla, 2011), participants rated intentional transgressions as worse than accidental ones ($M = 2.654$, $SD = .953$, $t(49) = 19.695$, $p < .001$) and actions worse than omissions ($M = .598$, $SD = .569$, $t(49) = 7.434$, $p < .001$).

However, intentionality and the omission bias differed across the four judgments of wrongness, blame, punishment, and responsibility (Fig. 1). To look at the role of intent and action across judgments, we subtracted ratings of accidental transgressions from intentional ones and omissions from actions respectively. A 4 (Judgments) x 2 (Intent/Action) ANOVA showed a main effect of judgments ($F(3, 147) = 8.926$, $p < .001$, partial eta squared = .154) and a main effect of intent/action ($F(1,49) = 183.258$, $p < .001$, partial eta squared = .789) such that the difference between intentional and accidental transgressions was higher than the difference between actions and omissions for all four judgments. There also was a significant interaction between judgments and intent/action ($F(3,147) = 28.031$, $p < .001$, partial eta squared = .364) such that the difference between the role of intent and action differed significantly across judgments, intent mattering most for wrongness and action mattering most for responsibility.
Paired t-tests showed that the role of intent between wrongness and blame differed significantly (M = .454, SD = 1.122, t(49) = 2.862, p < .01), as well as the role of intent between blame and punishment (M = .360, SD = .701, t(49) = 3.631, p = .001) and punishment and responsibility (M = .262, SD = .727, t(49) = 2.548, p < .05). The role of action between wrongness and punishment also differed significantly (M = -.182, SD = .542, t(49) = -2.374, p < .05), as well as between blame and responsibility (M = -.254, SD = .564, t(49) = -3.183, p < .01). These data suggest that intentionality and the omission bias play distinct roles in different moral judgments.

A Comparison of Judgments: Wrongness versus Punishment

Judgments of wrongness and punishment frequently diverge when judging the transgressions of others, so we wanted to focus on these two judgments in our analyses. A critical difference emerged in the role of intent and action across wrongness and punishment. In a 2 (Wrongness/Punishment) x 2 (Intent/Action) ANOVA, there was a main effect of intent, such
that intent was rated higher than action for both judgment types (F(1,49) = 211.171, p < .001, partial eta squared = .812). Surprisingly, there was also a main effect of judgment, such that wrongness judgments were rated higher than punishment judgments (F(1,49) = 16.066, p < .001, partial eta squared = .247). Additionally, there was a significant interaction between Judgments and Intent/Action, such that intent mattered more for wrongness and less for punishment, and action mattered more for punishment and less for wrongness (F(1,49) = 45.379, p < .001, partial eta squared = .481). A 2 (Wrongness/Punishment) x 2 (Intentional/Accidental) ANOVA showed that this effect was driven by intentional transgressions being rated as more wrong than punishable, and accidental transgressions being rated as more punishable than wrong (significant interaction between judgments and intentional/accidental, F(1,49) = 37.893, p < .001, partial eta squared = .436). The difference in the role of action between wrongness and punishment was driven by a significant interaction between judgments and action/omission (F(1,49) = 5.638, p < .05, partial eta squared = .103) in a 2 (Wrongness/Punishment) x 2 (Action/Omission) ANOVA. While omissions did not vary across judgments, actions were rated as more punishable than wrong.

Figure 2: a) Mean ratings of intentionality for wrongness and punishment and b) the omission bias.
We additionally ran a 2 (Wrongness/Punishment) x 2 (Action/Omission) x 2 (Intentional/Accidental) ANOVA in which there were main effects of action/omission ($F(1,49) = 36.882, p < .001$, partial eta squared = .429) and intentional/accidental ($F(1,49) = 476.481, p < .001$, partial eta squared = .907). There was a significant interaction between judgments and action/omission ($F(1,49) = 5.638, p < .05$, partial eta squared = .103) and between judgments and intentional/accidental ($F(1,49) = 37.893, p < .001$, partial eta squared = .436).

![Wrongness vs. Punishment: Four Story Endings](image)

*Figure 3: Mean ratings of the four story endings for judgments of wrongness and punishment.*

**RESULTS: A DOMAIN DIFFERENCE**

**The Role of Intent across Domains**

In order to further investigate the role of intent in making moral judgments, we again ran analyses on the intentional – accidental subtraction, but with the additional component of domains. Collapsing across the individualizing (harm and fairness) and binding (ingroup, authority, and purity) foundations (Graham et al., 2009), we found that intent matters more for
the individualizing than binding foundations in judgments of wrongness (M = .858, SD = 1.155, t(49) = 5.255, p < .001) and punishment (M = .698, SD = 1.371, t(49) = 3.602, p = .001). This difference was non-significant for both responsibility and blame (p’s > .05). A 2 (Wrongness, Punishment) x 2 (Individualizing, Binding) ANOVA for the role of intent revealed that the interaction between judgments and individualizing/binding was non-significant (p > .05).

![Figure 4: Mean ratings of the role of intent (intentional – accidental transgressions) across individualizing and binding foundations for judgments of wrongness and punishment.](image)

**Figure 4:** Mean ratings of the role of intent (intentional – accidental transgressions) across individualizing and binding foundations for judgments of wrongness and punishment.

We then separated the individualizing and binding foundations to look at the difference between intentional and accidental transgressions across the five moral domains of harm, fairness, ingroup, authority, and purity. The role of intent differed across domains, but this difference was less clear and interpretable as the individualizing/binding distinction. When collapsing across judgments, intent seems to matter more for harm than for any other domain. The role of intent for harm was significantly higher than fairness (M = 1.020, SD = 1.856, t(49) = 3.886, p < .001), ingroup (M = .928, SD = 1.994, t(49) = 3.289, p < .01), authority (M = .923,
Interestingly, the role of intent for the other four domains did not differ significantly.

![Role of Intent across Domains](image)

*Figure 5*: Mean ratings of the role of intent (intentional – accidental transgressions) across MFT domains collapsed across the four moral judgments.

Next, we investigated the role of intent across domains with the additional component of judgments, looking at wrongness, punishment, blame, and responsibility separately. (Again, we focused on the wrongness versus punishment contrast, but see Supplementary Results for further details). The meaning of the difference between intentional and accidental transgressions across domains for individual moral judgments is not clear, but wrongness was most consistent with previous research (Russell & Giner-Sorolla, 2011; Graham et al., 2009). Paired t-tests revealed that the role of intent significantly differed between the domains of harm and ingroup (M = .730, SD = 1.709, t(49) = 3.02, p < .01), harm and authority (M = .770, SD = 1.461, t(49) = 3.726, p = .001), and harm and purity (M = 1.90, SD = 2.541, t(49) = 5.286, p < .001) were significant for
wrongness. There were also significant differences between fairness and purity (M = 1.35, SD = 2.642, t(49) = 3.613, p = .001), ingroup and purity (M = 1.17, SD = 2.965, t(49) = 2.790, p < .01), and authority and purity (M = 1.13, SD = 2.379, t(49) = 3.358, p < .01) were also significant. These data fit nicely with the findings of Russell & Giner-Sorolla (2011) that harm and purity respond uniquely to intentionality and that purity the less flexible domain. They also demonstrate the distinction in the role of intent between the individualizing and binding foundations, though this distinction is not very clear because fairness looks like ingroup and authority.

Figure 6: Mean ratings of the role of intent (intentional – accidental transgressions) across MFT domains for wrongness.

For punishment, fairness stories were judged similarly to binding foundations rather than harm, the other individualizing foundation. This finding is not what a strict individualizing
versus binding distinction would expect. The role of intent significantly differed between harm and fairness ($M = 1.290, SD = 2.204, t(49)= 4.139, p < .001$), harm and ingroup ($M = 1.260, SD = 2.291, t(49) = 3.889, p < .001$), harm and authority ($M = 1.130, SD = 2.000, t = 3.996, p < .001$), and harm and purity ($M = 1.640, SD = 2.321, t(49) = 4.996, p < .001$). Thus, the role of intent was most important to harm than any other domain, a similar trend to the role of intent when collapsed across the four judgments.

**Figure 7:** Mean ratings of the role of intent (intentional – accidental transgressions) across MFT domains for punishment.

**The Role of Action across Domains**

Similarly, we looked at the role of action across moral domains by testing the action – omission subtraction. First, we collapsed the five domains into the individualizing and binding foundations. When judging how much punishment someone deserves, the omission bias was
greater for the individualizing (harm and fairness) than binding foundations (M = .365, SD = 1.286, t(49) = 2.007, p = .050). This difference was not significant for judgments of wrongness, blame, and responsibility (p’s < .05). A 2 (Wrongness, Punishment) x 2 (Individualizing, Binding) ANOVA for the role of action revealed a significant interaction between judgments and individualizing/binding (F(1,49), p < .05, partial eta squared = .090).

![Action: Individualizing vs. Binding Domains](image)

*Figure 8:* Mean ratings of the role of action (actions – omissions) across individualizing and binding foundations for judgments of wrongness and punishment.

We also tested the role of intent across domains. Like the role of intent, the role of action mattered most for the harm domain when collapsed across judgments. The role of action for harm differed significantly from fairness (M = .530, SD = 1.680, t(49) = 2.231, p < .05), authority (M = .603, SD = 1.214, t(49) = 3.508, p = .001), and purity (M = .465, SD = 1.453, t(49) = 2.262, p < .05). The other four domains did not differentiate from each other (p’s > .05).
Then, we broke the above test down to investigate the role of action across domains adding in the variable of moral judgments. For wrongness, the action – omission subtraction differed significantly between harm and authority (M = .630, SD = 1.662, t(49) = 2.680, p = .01), fairness and purity (marginally significant, M = -.830, SD = 2.944, t(49) = -1.993, p=.052), ingroup and purity (M = -.770, SD = 2.155, t(49) = -2.526, p < .05), and authority and purity (M = -.930, SD = 2.759, t(49) = -2.383, p < .05). It is very striking (and unexpected based on past research) that for the role of action for wrongness, harm and purity seem to be tracking together and fairness, ingroup, and authority as well (Graham et al., 2009).
Wrongness: The Role of Action across Domains

Figure 10: Mean ratings of the role of action (actions – omissions) across MFT domains for wrongness. The difference between action and omission was only significant for the harm (p < .001) and purity (p < .01) domains.

For making judgments of punishment, the role of action differed between the domains of harm and ingroup (M = .620, SD = 2.062, t(49) = 2.126 p < .05), and harm and authority (M = .770, SD = 1.519, t(49) = 3.584, p=.001). Again, it is strange that harm and purity did not significantly differentiate from one another and that fairness behaved more like the binding foundations than harm. (See Supplementary Results for the role of action across domains for judgments of responsibility and blame). While these data are not easily interpretable in light of past research (Graham et al., 2009), the omission bias and intentionality seem to be manifesting themselves unique across the five moral domains of MFT.
Figure 11: Mean ratings of the role of action (actions – omissions) across MFT domains for punishment. The difference between action and omission was significant for harm (p < .001), fairness (p < .01), ingroup (p < .05), and authority (p < .05).

DISCUSSION

Psychologists disagree on whether morality is many things or one thing. Is there a unifying component underlying all of morality or does morality involve many cognitive processes? Here, we used rules of intent and omission to examine where differences in moral cognition lie. We show evidence suggesting that there are differences between the five descriptively distinct moral domains of harm, fairness, ingroup, authority, and purity and that there may be many boundaries existing within our moral cognition of perceiving and judging others. Participants rated intentional transgressions as worse than accidental transgressions and actions worse than omissions across judgments and domains, consistent with previous research (Russell & Giner-Sorolla, 2011; DeScioli et al., 2011). However, the non-moral factors of intentionality and the omission bias influenced moral judgments differentially. Their influences
are not universal laws, but instead vary drastically depending on the domain and type of moral transgression being judged and the judgment being made. Particularly, there was a distinction in the role of intentions and omissions for judgments of wrongness and punishment such that intent played a larger role for wrongness and action played a larger role for punishment. There were also substantial differences observed in their role across all five domains. For wrongness and punishment, the difference between intentional and accidental transgressions was significant between the individualizing and binding foundations such that intentional transgressions were rated higher (more wrong and more punishable) for the individualizing domains. The difference between transgressions of action and omission was only significant between the individualizing and binding foundations for punishment. When broken down across the five domains, the role of intentionality and the omission bias was less clear, although ratings still differed across domains. Together, these findings suggest that intentionality and the omission bias do not influence moral judgments equally across domains and that the there is some truth underlying the Moral Foundations Theory. The five moral domains tested here do seem to represent some mechanistic difference in moral cognition. Many cognitive processes impact our morality, but do so uniquely across different kinds of moral transgressions, which suggests that these violations are distinct. Thus, perhaps it is more accurate to think about morality as encompassing many domains or foundations rather than one.

This study meaningfully contributes to the larger literature of moral psychology. Our findings relate to Graham’s et al. (2009) work demonstrating a distinction between the individualizing and binding foundations as representing different emphases in morality: the individual and the group. We too show that judgments vary across this distinction. Also, domains do seem to vary in their flexibility when taking into account the role of intent and action, similar
to the findings of Russell & Giner-Sorolla (2011) on the relationship between purity and intentionality. Like DeScioli et al. (2009) demonstrated, we show a robust preference for omissions when judging the transgressions of others. Perhaps in this study, we could have manipulated the difference between actions and omissions by varying the verticality of social roles between agents and victims (Haidt & Baron, 1996), or perhaps the relationships in our stories already impacted participants’ judgments.

Intentionality and the omission bias are not the only factors that may vary across domains. Napier & Luguri (2013) explored the relationship between domains and abstract versus concrete thinking and found that when prompted to think abstractly, participants’ value of the individualizing foundations increased and the value of the binding foundations decreased. They reasoned that abstract thinking encourages people to make judgments based on their most core beliefs. These data suggest that controlled cognition may be associated with depreciating the importance of ingroup, authority, and purity when judging others. Also, there is a robust self-other distinction in the types of violations people would rather have happen to them versus happen to someone else (Chakroff et al., 2013). People typically would rather have disgust-inducing violations (purity) happen to others than themselves and would rather have harmful events happen to themselves than others. These discrepancies further support meaningful differences underlying the moral domains. While past research has focused on how morality differs from other types of cognition (moral versus non-moral; Young & Dungan, 2012), future research should continue to utilize domain-general influences, like we did with intentionality and the omission bias, to compare moral transgressions to each other, which will help to determine where true cognitive boundaries exist.
Limitations

One major limitation of this study is that our data and findings are restricted to the stories we used in our stimuli set. This restriction could explain why the role of intentionality and the omission bias remains unclear across all five domains and across responsibility and blameworthiness, judgments that seem to fall somewhere in between wrongness and punishment. While we tried to minimize domain overlap as much as possible in our stimuli validation pretest, it is plausible that these stories were not solely perceived as transgressions within the intended domain and that our findings are not as domain-specific as we would like. The stimuli could have used more pretesting and there are many additional factors for which we could have controlled. There is also a substantial amount of variability across stories that we grouped under the same domain without accounting for these differences. For example, the purity transgressions included sexual acts as well as food taboos, but our analyses do not make this distinction.

Further, we did not control for the relationships between the agent and the patient across the stories, which vary considerably. We also grouped our stories based on prior assumptions about what types of transgressions constitute a particular domain. There could be many cognitive mechanisms involved in moral cognition, but maybe the five moral domains tested in this study are not truly where the boundaries lie. Perhaps a more accurate technique for analyzing the data would be to run factor analyses on everything to see what stories are actually tracking together without imposing domain assumptions. If the stories weren’t grouping together according to domain, then future work using a much wider range of stimuli would be necessary to determine what the correct underlying structure is.
Future research – The Neuroscience of Moral Judgments

This study does provide a solid foundation for future research and follow-up studies. Specifically, the behavioral data obtained from these studies can be used as groundwork for a functional resonance magnetic imaging (fMRI) study to look more closely at how neural recruitment varies across the five moral domains in making judgments of both intentional versus accidental and omission versus action transgressions. It remains unclear whether or not the recruitment of brain regions varies in making moral judgments of different domains. Certain structures, such as the posterior superior temporal sulcus (pSTS), the right temporoparietal junction, and the ventromedial prefrontal cortex (vmPFC) have been shown to be involved in moral judgments and reasoning about the mental states of others for harm (Young & Dungan, 2012; Decety & Cacioppo, 2012; Young et al., 2010), but less is known about neural recruitment for the other four moral domains. An event-related potential (ERP) study measured the electrophysiological response changes to moral stimuli aiming to break down the process of moral computations to see which types of information are first taken into consideration (Decety & Cacioppo, 2012). In this ERP study, participants responded to short, morally relevant visual clips of intentional and accidental harmful actions. Decety & Cacioppo (2012) found that perception of intentional harm, in comparison to accidental, was associated with better and faster reaction times. Perceiving intentional harm also seemed to specially recruit the right pSTS, the amygdala/temporal pole, and the vmPFC. In fact, perception of intentional and accidental harms was distinguished by high right pSTS involvement as soon as 62 milliseconds post-stimulus for intentional harm. These data suggest that intentionality is the first input into moral computations and judgments, especially within the harm domain (Decety & Cacioppo, 2012).
Additionally, Young et al. (2010) investigated another brain region thought to be important in inferring intentionality of an agent, the right temporoparietal junction (RTPJ). When activity of the RTPJ was temporarily disrupted through transcranial magnetic stimulation (TMS), participants judged failed attempts to harm as more morally permissible and less morally forbidden than controls. These TMS participants seemed to be relying much less on the mental state of the agent in making moral judgments, as they did not consider the agent’s malicious intention and simply focused on the neutral outcome of the event.

These two studies provide evidence for specific regions recruited and activated when distinguishing between intentional and accidental harm, but there is very little literature on neural recruitment for moral judgments of omission versus action. While there is a substantial literature on brain regions utilized in reasoning about the mental states (like intention) of an agent, an fMRI study on the neural recruitment of judgments of omission versus action would be immensely valuable to the field of moral psychology. The neuroscience research of processing omissions is in its infancy. Because subjects can readily articulate the action/omission distinction in their justifications and explanations of their moral judgments, it was initially hypothesized that the omission principle is available to conscious reasoning (Cushman et al., 2006), but recent fMRI findings seem to contradict this hypothesis. Cushman et al. (2011) investigated whether or not the omission bias is an automatic or controlled process and looked at the neural recruitment for omissions. They found that condemning harmful omissions is associated with frontoparietal control network activation, or that controlled cognition is associated with overriding the omission effect. This finding suggests that the omission bias is automatic and controlled cognition is necessary to overcome the automatic judgment.
The neuroscience of intentions and omissions during the process of making moral judgments is a promising area for future research. Importantly, this research would also help to confirm whether or not there are truly five psychologically distinct moral domains. If robust differences in brain activity emerge between harm and purity judgments, this finding would strongly support the notion that perceiving separate domains is not solely theoretical, but in fact demonstrates a true, psychological boundary in judging others and their moral transgressions. The question of how our moral judgments vary as a function of moral domains still remains and future research should aim to look more closely at how the neural recruitment of intentions and omissions differs for these decisions and judgments. Perhaps there are distinct neural bases for moral judgments of different domains.

**Cross-cultural implications**

This study additionally provides solid foundation for future research applicable to cross-cultural differences. How are the effects of intentionality and the omission bias are manifested differently in distinct populations around the world and how do they interact with cultural language norms? More broadly, how might these rules vary in a different culture and language, or might they have some universal applicability? Further, how do our moral judgments interact with human memory of events? Past research has demonstrated that fundamental linguistic differences can impact memory of events involving agents, or people perceived by others as having the capacity to make decisions and carry out actions, which can subsequently modify our judgments of their behavior (Fausey & Boroditsky, 2011; Fausey et al., 2010). For example, the use of the impersonal “se” in Spanish allows agents to be eliminated from the sentence, and is frequently utilized in cases of accidental actions when something was not intended (i.e. se
rompió el vaso). This particular linguistic style is not used in English and does not translate well. When speaking thus, it is more difficult to connect the accidental agent with the action.

Fausey & Boroditsky (2011) found that while English and Spanish speakers did not differ in their memory for intentional agents, English speakers remembered accidental agents significantly better because in English, agentive language is used for both accidental and intentional transgressions and not just intentional ones like in Spanish. Similar results were obtained in a comparison between English and Japanese speakers (Fausey et al., 2010). Because Japanese also uses less agentive language for accidental agents, Japanese speakers remembered accidental agents significantly less well than English speakers. These findings can have tremendous implications for our eyewitness memory of events and for our moral judgments. These two studies demonstrate that language patterns are a contributor to moral cognition. It seems that language can function as a top-down process over more general cognitive mechanisms. Because such linguistic preferences serve as basic cognitive processes, perhaps biases of omission and intentionality exert greater influence on the moral judgments of native Spanish and Japanese speakers such that outcomes of certain behaviors matter less. This kind of research will contribute to the scientific knowledge of moral judgments across domains with the additional consideration of cultural and linguistic variance, facilitating a better understanding of intentionality and the omission bias across cultures and linguistic styles.

Conclusion

Moral cognition is complex and many factors influence our judgments of others’ violations. The roles of intentionality and the omission bias differ across both moral judgments and domains, however this difference remains unclear for domains. Better understanding the influence of non-moral factors such as intentions and omissions on judgments of varying
transgressions will help to delineate the intricacies of morality and to determine the map of moral cognition.
SUPPLEMENTARY RESULTS

Liberals versus Conservatives

We investigated the role of political orientation in making moral judgments based on previous research that the individualizing-binding distinction may account for the variation in moral concerns between right and left political wings (Graham et al., 2009). Harm and fairness have been found to be especially important and relevant to democrats and liberal morality, but the other domains don’t matter quite as much. Republicans, on the other hand, value a more conservative morality and endorse the “binding foundations” of ingroup, authority, and purity in addition to harm and fairness (Graham et al., 2009). All five domains are of equal weight and importance to conservatives.

In our analyses, we distinguished liberals from conservatives by averaging their three responses to the political orientation questions in the survey and then splitting near the median where there was a clear distinction. We ended up with 26 liberals and 24 conservatives. First, we ran two separate 2 (Wrongness, Punishment) x 2 (Intent, Action), one for liberals and one for conservatives. For the liberals 2 x 2, there were main effects of judgments (F(1,25) = 7.626, p < .05, partial eta squared = .234) and intent/action (F(1,25) = 95.022, p < .001, partial eta squared = .792). There was also an interaction between judgments and intent/action (F(1,25) = 18.321, p < .001, partial eta squared = .423). The conservatives 2 x 2 yielded similar results (F(1,23) = 10.235, p < .01, partial eta squared = .308; F(1,23) = 122.186, p < .001, partial eta squared = .842; interaction F(1,23) = 28.483, p < .001, partial eta squared = .553 respectively).
While it looked like there might be a difference in the role of intent between liberals and conservatives, paired t-tests showed these trends were non-significant (p’s > .05). Two separate 5 (Domains) x 2 (Intentional/Accidental) ANOVAS did not differ between political orientations. (Both liberals and conservatives showed main effects of domains (F(4,100) = 4.613, p < .01, partial eta squared = ; F(4,92) = 5.498, partial eta squared = .193 respectively) and intent/action (F(1,25) = 78.886, p < .001, partial eta squared = .759; F(1,23) = 107.824, p < .001, partial eta squared = .824 respectively). But in a 2 (Individualizing, Binding) x 2 (Intent, Action), there was a main effect of individualizing domains for liberals (F(1,25) = 12.176, p < .01, partial eta squared = .328) and not for conservatives (p = .073). (Both liberals and conservatives showed a main effect of intent/action here (F = 83.070, p < .001, partial eta squared = .769; F(1,23) = 105.844, partial eta squared = .821 respectively).
**Political orientation as a covariate**

When Action/Outcome scale, political orientation, and gender were entered as covariates for the 2 (Wrongness/Punishment) x 2 (Intentional/Accidental) ANOVA, the interaction remained, but the main effect of intentional/accidental was no longer significant.

Similarly, when controlling for covariates in the 2 (Wrongness/Punishment) x 2 (Action/Omission) ANOVA, nothing was significant (losing the main effect of action and the interaction between judgments and action/omission).

**Responsibility and Blame**

When exploring the role of action across domains for responsibility, paired t-tests revealed significant differences between harm and fairness (M = 1.01, SD = 2.425, t(49) = 2.945, p < .01), harm and ingroup (M = .860, SD = 2.703, t(49) = 2.250, p < .05), harm and authority (M = .860, SD = 1.648, t(49) = 3.691, p=.001), and fairness and purity (M = -.610, SD = 2.056, t(49) = -2.098, p < .05).

![Responsibility: The Role of Intent across Domains](image)

*Figure S2*: Mean ratings of the difference between intentional and accidental transgressions across MFT domains for responsibility.
When judging the blameworthiness of transgressions, there were significant differences in the role of intent between harm and fairness (M = 1.23, SD = 2.139, t(49) = 4.067, p < .001), harm and ingroup (M = .860, SD = 2.515, t(49) = 2.418, p < .05), harm and authority (M = .930, SD = 1.675, t(49) = 3.926, p < .001), and harm and purity (M = .600, SD = 2.092, t(49) = 2.028, p < .05). Thus, intent mattered more for harm than any other domain. Fairness and purity also differed significantly (M = -.630, SD = 2.005, t(49) = -2.222, p < .05). For both responsibility and blame, fairness behaved surprisingly and differentiated from the harm domain.

![Blame: The Role of Intent across Domains](image)

*Figure S3:* Mean ratings of the difference between intentional and accidental transgressions across MFT domains for blame.

When exploring the role of action across domains for responsibility, there were significant differences between harm and fairness (M = .810, SD = 1.971, t(49) = 2.905, p < .01), harm and authority (M = .600, SD = 1.457, t(49) = 2.912, p < .01), and harm and purity (M = 1.08, SD = 2.237, t(49) = 3.414, p = .001). There were also significant differences between fairness and ingroup (M = -.590, SD = 1.971, t(49) = -2.117, p < .05), and ingroup and purity (M = .860,
SD = 2.879, t(49) = 2.113, p = < .05). The distinction between individualizing and binding foundations is especially unclear here.

![Graph of Responsibility: The Role of Action across Domains](image)

*Figure S4:* Mean ratings of the difference between actions and omissions across MFT domains for responsibility.

The difference between action and omission across domains for blame only varied between harm and purity (marginal significance, $M = .580$, SD = 2.059, $t(49) = 1.992$, $p = .052$).

![Graph of Blame: The Role of Action across Domains](image)

*Figure S5:* Mean ratings of the difference between actions and omissions across MFT domains for blame.
REFERENCES


APPENDIX I: STIMULI

Harm

John and Ivan are coworkers who decide to go to a restaurant for dinner after work one night. They discuss what to get and the waiter comes to take their order. Although Ivan is allergic to pepper, he doesn’t realize the salad he orders has pepper in the dressing. After eating the salad, Ivan is rushed to the emergency room with a severe allergic reaction.

Intentional action: John knew about Ivan’s allergy and told him to order the salad with pepper.
Accidental action: John did not know about Ivan’s allergy, so he told him to order the salad with pepper.
Intentional omission: John knew about Ivan’s allergy and did not say anything when Ivan ordered the salad with pepper.
Accidental omission: John did not know about Ivan’s allergy, so he did not say anything when Ivan ordered the salad with pepper.

Erin and her new roommate, Sarah, are cleaning their kitchen together. Sarah is standing beside Erin telling a story while Erin is unloading the dishwasher. There is a long, sharp knife inside the dishwasher that ends up falling to the ground and cutting off one of Sarah’s toes. She screams out in pain.

Intentional action: When the knife was in Erin’s hand, she purposefully dropped it.
Accidental action: When the knife was in Erin’s hand, she accidentally dropped it.
Intentional omission: The knife was sliding off a pile of dishes, and Erin could have easily stopped it. She noticed this happening, and she did nothing.
Accidental omission: The knife was sliding off a pile of dishes, and Erin could have easily stopped it. She did not notice this happening, so she did nothing.

Ted and his brother are playing basketball in their driveway. Ted’s brother is running around barefoot, despite Ted’s warning that he should put his shoes on. He ends up stepping on a nail and badly injuring his foot.

Intentional action: Ted had the nail in his pocket and purposefully dropped it in the driveway to teach his brother a lesson.
Accidental action: Ted had the nail in his pocket and did not mean to drop it in the driveway, hurting his brother.
Intentional omission: Ted noticed the nail in the driveway and did not say anything to teach his brother a lesson.
Accidental omission: Ted did not notice the nail in the driveway, so he did not say anything to his brother.

Emma is volunteering at her local library. She’s standing on a ladder to look at the selection on a high shelf, and a stranger walks over to look at the books on the shelf below Emma. There is a box filled with heavy books sitting on the edge of the top shelf. The box ends up falling on the stranger and seriously hurting her.
Intentional action: Emma noticed this person was standing beneath her, and she purposefully knocked the box off the shelf.
Accidental action: Emma did not notice this person was standing beneath her, and she accidentally knocked the box off the shelf.
Intentional omission: The box began to fall off the shelf, and Emma could have prevented it from falling on this person. Emma noticed this happening and did nothing.
Accidental omission: The box began to fall off the shelf, and Emma could have prevented it from falling on this person. Emma did not notice this happening, so she did nothing.

**Fairness**

Kevin is hoping to sell his car and posts an ad online. The car is in poor condition, particularly the tires, which don’t hold pressure well and are about to go flat. A girl named Sally responds to Kevin’s post and comes to take a look at the car. Sally asks about the condition of the car and the tires and, after listening to Kevin’s response, decides to rent the car. Soon after, Sally gets a flat tire, and she is responsible for the cost.

Intentional action: Kevin knew about the poor condition of the tires, but he lied to Sally, telling her that they were in good condition.
Accidental action: Kevin did not know about the poor condition of the tires, so he told Sally that they were in good condition.
Intentional omission: Kevin knew about the poor condition of the tires, but when answering Sally’s question, he did not mention the tires.
Accidental omission: Kevin did not know about the poor condition of the tires, so when answering Sally’s question, he did not mention the tires.

Karen works at a cashier’s office and is organizing letters with Christmas bonuses for workers at her company. There are two bonuses people receive - large and small - based on the hours they work. Karen recognizes one of the names - an attractive person she met at a company party once. This person gets the large bonus in the mail even though he doesn’t work much at all and only deserves the small bonus.

Intentional action: While reviewing the letters, Karen purposefully filed his letter incorrectly.
Accidental action: While reviewing the letters, Karen did not mean to file his letter incorrectly.
Intentional omission: While reviewing the letters, Karen noticed his letter was filed incorrectly and did not change it.
Accidental omission: While reviewing the letters, Karen did not notice his letter was filed incorrectly so she did not change it.

Mr. Carter is a high school history teacher. It’s the end of the semester, and he is in the process of assigning grades. Mr. Carter generally gets along well with his students except for one whom he doesn’t like very much. This particular student was failing the course, but she completed the extra credit assignment that will allow her to pass. She leaves the assignment on Mr. Carter’s desk just before the deadline. The extra credit score is not included in the final grade and Mr. Carter ends up failing her.
Intentional action: While cleaning out his desk, Mr. Carter noticed that she had turned in the assignment and purposefully threw it out.
Accidental action: While cleaning out his desk, Mr. Carter did not notice that she had turned in the assignment and accidentally threw it out.
Intentional omission: While cleaning out his desk, Mr. Carter noticed that her assignment had fallen into the trash, and he did not retrieve it.
Accidental omission: While cleaning out his desk, Mr. Carter did not notice that her assignment had fallen into the trash, so he did not retrieve it.

Ethan is a manager at a major corporation. A big mistake occurred in a recent project that is costing the company a lot of money. Andrea had been reporting to Ethan on the project. She is a very hard worker and has been an excellent asset to the company throughout her many years of working there. Sometimes, Ethan and Andrea had heated disagreements while discussing the project. Another person was responsible for the big mistake, and Andrea’s work had nothing to do with it. There is a list of people to be fired. Andrea is fired even though the problem with the project was not her fault.
Intentional action: Ethan knew that the mistake was not Andrea’s fault, and he added her name to the list of people to be fired.
Accidental action: Ethan did not know that the mistake was not Andrea’s fault, so he added her name to the list of people to be fired.
Intentional omission: Ethan knew that the mistake was not Andrea’s fault. When he saw her name on the list of people to be fired, he did not remove it.
Accidental omission: Ethan did not know that the mistake was not Andrea’s fault. When he saw her name on the list of people to be fired, he did not remove it.

**Ingroup**

Jack, an American, loves to travel. He goes abroad and decides to go backpacking across Asia. One day, he is walking along a crowded, popular shopping street in the city he is currently visiting. Jack encounters an American flag hanging near one of the store entrances. The flag ends up on the ground. Many of the locals observe this situation.
Intentional action: Jack was feeling particularly anti-American, so he purposefully threw the flag on the ground.
Accidental action: In a hurry, Jack accidentally bumped into the flag, causing it to fall to the ground.
Intentional omission: The flag was falling to the ground. Jack was feeling particularly anti-American, so he watched the flag fall and purposefully left it there.
Accidental omission: The flag was falling to the ground. In a hurry, Jack did not notice the flag land on the ground, so he accidentally left it there.
Jason is the friend of Patrick, a political candidate running for senator in the upcoming election. Jason has had second thoughts lately and doesn’t think that Patrick should be in the running. They are at a restaurant talking. Jason knows Patrick was recently involved in an event that would seriously hurt his campaign. Patrick begins telling Jason about this event. There is a reporter close by in the room that overhears their conversation and publishes the whole incident, resulting in Patrick being removed from candidacy.

Intentional action: Jason noticed that there was a reporter listening to their conversation, and he insisted that Patrick tell him everything about the event.

Accidental action: Jason did not notice that there was a reporter listening to their conversation, so he insisted that Patrick tell him everything about the event.

Intentional omission: Jason noticed that there was a reporter listening to their conversation, and he did not stop Patrick from telling him about the event.

Accidental omission: Jason did not notice that there was a reporter listening to their conversation, so he did not stop Patrick from telling him about the event.

Michael is at his friend's party. His friend wants to introduce Michael to a girl he is good friends with. They spot the girl across the room, and they go over to meet her. Michael instantly gets along with the girl, and later that night they kiss and plan to go out on a date. Michael's friend really wanted to date the girl and was going to ask her out the very next day.

Intentional action: Michael knew his friend wanted to date the girl, but he kissed her anyway.

Accidental action: Michael did not know his friend wanted to date the girl, so he kissed her.

Intentional omission: Michael knew his friend wanted to date the girl, but when she kissed him, he did not stop her.

Accidental omission: Michael did not know his friend wanted to date the girl, so when she kissed him, he did not stop her.

Emily and Lauren are teammates on their high school field hockey team. Emily has always been jealous of Lauren, who is the best player. The school’s policy is that students on probation may not participate in sport competitions. Lauren has been on academic probation, but is cleared just in time for the team’s biggest game of the season against the school's greatest rivals. An administrator asks Emily to give her coach an envelope containing a message that says Lauren is allowed to play, but her coach never receives this message. Lauren is not allowed to play in the game, and without Lauren’s presence, her team loses badly to their rivals.

Intentional action: Emily purposefully delivered the envelope to the wrong mailbox in the teacher’s lounge.

Accidental action: Emily accidentally delivered the envelope to the wrong mailbox in the teacher’s lounge.

Intentional omission: Emily knew the envelope contained the message about Lauren, and she failed to deliver the message before the game.

Accidental omission: Emily did not know the envelope contained the message about Lauren, and she failed to deliver the message before the game.
Authority

Rachel’s grandmother spent hours knitting Rachel a sweater for her birthday and asks Rachel to wear it to the family reunion next weekend. Before the reunion, the sweater gets washed. The sweater should only be hand-washed, so it shrinks to the point that Rachel can no longer wear it.

Intentional action: Rachel threw the sweater in the wash. She knew the sweater was hand-wash only, but purposefully shrunk the sweater so she no longer has to wear it.

Accidental action: Rachel threw the sweater in the wash. She did not know the sweater was hand-wash only, and did not mean to shrink the sweater.

Intentional omission: Rachel noticed the sweater was in the wash, and did not remove it. She knew the sweater was hand-wash only, but purposefully let the sweater shrink so she no longer has to wear it.

Accidental omission: Rachel noticed the sweater was in the wash, and did not remove it. She did not know the sweater was hand-wash only, and did not mean to let the sweater shrink.

A school is celebrating its 100th anniversary and the student council president, Kim, has been assigned to present a slideshow of videos to the school throughout the day. Mr. Harris, the school principal, is looking forward to the celebration. During the slideshow presentation, a very embarrassing video of Mr. Harris is also screened and he is clearly offended.

Intentional action: While reviewing the slides, Kim purposefully added the video of Mr. Harris to the presentation.

Accidental action: While reviewing the slides, Kim accidentally added the video of Mr. Harris to the presentation.

Intentional omission: While reviewing the slides, Kim noticed the video of Mr. Harris in the presentation and did not remove it.

Accidental omission: While reviewing the slides, Kim did not notice the video of Mr. Harris in the presentation, so she did not remove it.

Jeff’s father is preparing a major presentation for work on his computer and goes upstairs without saving his progress. While his father is upstairs, Jeff uses his computer. A message pops up that says an automatic software update is about to begin in one minute and the update will be complete after the computer restarts. The message also warns that unsaved data will be lost.

There are two options on the message: “Restart computer” and “Cancel”. The one-minute timer begins to tick down, and if it expires, the computer will restart on its own. The presentation gets deleted and Jeff’s father is completely humiliated in front of his boss and coworkers when he arrives at work.

Intentional action: Jeff knew that his father had not saved the presentation, and he clicked the “Restart computer” option.

Accidental action: Jeff did not know that his father had not saved the presentation, and he clicked the “Restart computer” option.

Intentional omission: Jeff knew that his father had not saved the presentation. He easily could have clicked the “Cancel” option, but instead, Jeff did nothing and allowed the timer to expire.
Accidental omission: Jeff did not know that his father had not saved the presentation. He easily could have clicked the “Cancel” option, but instead, Jeff did nothing and allowed the timer to expire.

Kelly’s Great Aunt Ethel is in charge of running a fundraising event, and there is pressure for her to raise a certain amount of money. Great Aunt Ethel expects Kelly to help out and asks her to put up flyers promoting the event around town. Later that day, Kelly decides to clean and organize her room. The flyers for Great Aunt Ethel’s event end up in the trash.

Intentional action: Kelly noticed her Great Aunt Ethel’s flyers were in a large stack of paper, and she threw the stack out.
Accidental action: Kelly did not notice her Great Aunt Ethel’s flyers were in a large stack of paper, so she threw the stack out.
Intentional omission: Kelly noticed her Great Aunt Ethel’s flyers had fallen into the trash, and she did not retrieve them.
Accidental omission: Kelly did not notice her Great Aunt Ethel’s flyers had fallen into the trash, so she did not retrieve them.

Purity

Mark and his friends are out celebrating for the evening. After they finish dinner, they leave the restaurant and discuss what to do next. As they are walking, they pass a strip club and decide to go in for a few dances. Mark’s daughter, Julie, is a dancer at the strip club and is performing that night when they go in.

Intentional action: Mark knew his daughter worked at the strip club, and he suggested it would be a great place to go next.
Accidental action: Mark did not know his daughter worked at the strip club when he suggested it would be a great place to go next.
Intentional omission: Mark knew his daughter worked at the strip club, and when his friends suggested they go, he did not suggest an alternative.
Accidental omission: Mark did not know his daughter worked at the strip club, and when his friends suggested they go there, he did not suggest an alternative.

Eric recently started chatting with someone in an online chat community. They live on opposite coasts, but they have been chatting nightly for weeks now. One night, Eric’s cyber friend performs sexual acts for him. Eric’s cyber friend is his older sibling.

Intentional action: Eric asked her to perform sexual acts. The camera shots were of the full person, so Eric knew it was his sibling.
Accidental action: Eric asked her to perform sexual acts. The camera shots were of the body only, so Eric did not know it was his sibling.
Intentional omission: Eric’s cyber friend began performing sexual acts, and Eric did not stop her. The camera shots were of the full person, so Eric knew it was his sibling.
Accidental omission: Eric’s cyber friend began performing sexual acts, and Eric did not stop her. The camera shots were of the body only, so Eric did not know it was his sibling.

Maria is in the middle of cleaning her basement. She is feeling dehydrated and brings a glass of water down to the basement with her. Maria sets the glass of water on the floor. There are a lot of
cobwebs and spiders around the basement and Maria has a lot of dusting to do. After awhile, she takes a break to drink some water. Maria swallows a spider while taking a sip.

Intentional action: While dusting, Maria purposefully knocked the spider into her glass of water before drinking it.
Accidental action: While dusting, Maria accidentally knocked the spider into her glass of water before drinking it.
Intentional omission: While drinking, Maria noticed the spider in her water, but she did not remove it and kept drinking anyway.
Accidental omission: While drinking, Maria did not notice the spider in her water, so she did not remove it and kept drinking anyway.

Kyle is preparing dinner for his friends at his house. He recently cut his finger with a sharp knife while chopping vegetables, and he still has a Band-Aid on the injured finger, but it is loosely attached. Kyle finishes preparing the entrée and a side soup, and he and his guests sit down for dinner. The bloody Band-Aid ends up in his side soup, and Kyle eats the soup and swallows the Band-Aid.

Intentional action: Kyle took off the bloody Band-Aid and purposefully dropped it in his side soup.
Accidental action: Kyle took off the bloody Band-Aid, but did not mean to drop it in his side soup.
Intentional omission: Kyle’s bloody Band-Aid fell into his side soup. He noticed the Band-Aid floating in his soup, and he continued eating it.
Accidental omission: Kyle’s bloody Band-Aid fell into his side soup. He did not notice the Band-Aid floating in his soup, so he continued eating it.
APPENDIX II: THE MORAL FOUNDATIONS QUESTIONNAIRE (Graham et al., 2011)

Part I: Moral Relevance

Participants were asked, “When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking?”. They responded according to the following scale: 0 - not at all relevant (This consideration has nothing to do with my judgments of right and wrong), 1 - not very relevant, 2 - slightly relevant, 3 - somewhat relevant, 4 - very relevant, 5 - extremely relevant (This is one of the most important factors when I judge right and wrong).

Harm items:
Whether or not someone suffered emotionally
Whether or not someone cared for someone weak or vulnerable
Whether or not someone was cruel

Fairness items:
Whether or not some people were treated differently from others
Whether or not someone acted unfairly
Whether or not someone was denied his or her rights

Ingroup items:
Whether or not someone’s action showed love for his or her country
Whether or not someone did something to betray his or her group
Whether or not someone showed a lack of loyalty

Authority items:
Whether or not someone showed a lack of respect for authority
Whether or not someone conformed to the traditions of society
Whether or not an action caused chaos or disorder

Purity items:
Whether or not someone violated standards of purity and decency
Whether or not someone did something disgusting
Whether or not someone acted in a way that God would approve of

Control item:
Whether or not someone was good at math

Part II: Moral Judgments

Participants were asked to read the following sentences and to indicate their agreement or disagreement according to the following scale: 0 - strongly disagree, 1 - moderately disagree, 2 - slightly disagree, 3 - slightly agree, 4 - moderately agree, 5 - strongly agree.

Harm items:
Compassion for those who are suffering is the most crucial virtue.
One of the worst things a person could do is hurt a defenseless animal.
It can never be right to kill a human being.

*Fairness items:*
When the government makes laws, the number one principle should be ensuring that everyone is treated fairly.
Justice is the most important requirement for a society.
I think it’s morally wrong that rich children inherit a lot of money while poor children inherit nothing.

*Ingroup items:*
I am proud of my country’s history.
People should be loyal to their family members, even when they have done something wrong.
It is more important to be a team player than to express oneself.

*Authority items:*
Respect for authority is something all children need to learn.
Men and women each have different roles to play in society.
If I were a soldier and disagreed with my commanding officer’s orders, I would obey anyway because that is my duty.

*Purity items:*
People should not do things that are disgusting, even if no one is harmed.
I would call some acts wrong on the grounds that they are unnatural.
Chastity is an important and valuable virtue.

*Control item:*
It is better to do good than to do bad.
APPENDIX III: THE ACTION/OUTCOME SCALE (Miller et al., in press)

Participants were asked, “How much would it upset you to…?” and responded on a scale from 1 (not at all) to 7 (very much so).

**Action Items:**
Hold an empty gun that both you and your friend know is empty to your friend's head and pull the trigger.
Curse angrily at an old woman as part of a movie script.
Hit the hand of a corpse with a hammer.
Yell derogatory remarks at your mother on the phone while holding down the mute button.
Make obscene gestures directed at your best friend behind their back.
Stab a fellow actor in the neck during a play using a stage knife with a retractable blade.
Volunteer to "saw a woman in half" as part of a realistic but safe magic trick.
Cut open a patient's stomach during a necessary medical procedure.
Shoot a bullet at a consenting friend while he's behind a bulletproof glass.

**Outcome Items:**
See a stranger fall down the stairs.
Listen to somebody have a tooth pulled when there is no anesthetic available.
See a chef cut their finger by accident.
See footage of a person drowning on the evening news.
See a football player break his leg during a game.
See someone shut their own finger in a car door.
Hear the cries of an injured boy who has fallen off his bike.
See a painter fall off of a ladder.
See someone step barefoot on broken shards of glass.
See a man accidentally spill boiling water on his hand.
See a woman in sandals accidentally get her toes run over by a shopping cart.
Watch a boy experience an allergic reaction after eating peanuts.
Hear a frightened child crying.
See a woman crying after a painful medical operation.

**Control Items:**
Hear the birthday song 100 times in a row.
Lose your home to a fire.
Find a moth hole on your favorite shirt.
Get a flat tire on the way to your wedding.
Learn that you only have one hour to study for a difficult final exam.
Lose electrical power to your home for a day.
Accidentally break your favorite coffee mug.
Lose your cell phone.
Have to wait three hours in the waiting room at the doctor’s office.
Drop a cake you made for your grandmother while taking it to her house.
Get caught in the rain at the park after planning a nice picnic for your family.