NEED FOR COGNITION AND NEED FOR CLOSURE: TWO POTENTIAL MODERATORS OF SYSTEMATIC BLAME UPDATING

A Thesis
by
ANDREW M. TAYLOR

Submitted to the School of Graduate Studies
at Appalachian State University
in partial fulfillment of the requirements for the degree of
MASTER OF ARTS

August 2022
Department of Psychology

NEED FOR COGNITION AND NEED FOR CLOSURE: TWO POTENTIAL MODERATORS OF SYSTEMATIC BLAME UPDATING

A Thesis
by
ANDREW M. TAYLOR
August 2022

APPROVED BY:

Andrew Smith, Ph.D.
Chairperson, Thesis Committee

Twila Wingrove, J.D., Ph.D.
Member, Thesis Committee

Rose Mary Webb, Ph.D.
Member, Thesis Committee

Rose Mary Webb, Ph.D.
Chairperson, Department of Psychology

Marie Hoepfl, Ed.D.
Interim Dean, Cratis D. Williams School of Graduate Studies

Abstract

NEED FOR COGNITION AND NEED FOR CLOSURE: TWO POTENTIAL MODERATORS OF SYSTEMATIC BLAME UPDATING

Andrew M. Taylor
B.S., University of Mount Olive
M.A., Appalachian State University

Chairperson: Andrew Smith

How people make and modify moral judgments of blame has been hotly debated. The prevailing view for the past 20 years is that moral judgments of blame are generally biased by intuitive punitive motivations. However, recent work by Monroe and Malle (2019) demonstrates that although bias occurs in the context of intergroup blaming, people's typical moral judgments of blame are highly responsive to evidence and relatively evenhanded. This study examined whether individual differences in need for cognition (Cacioppo, Petty, & Kao, 1982; Cacioppo & Petty, 1984) and need for closure (Crowson, 2013; Roets & Van Hiel, 2011) moderate how people update their moral judgments of blame. Following past work in non-moral decision making, I predicted that higher need for cognition and lower need for closure would be related to more updating for blame scenarios where an offense occurred for morally good, morally bad, intentional, unintentional, preventable, and unpreventable reasons. Overall, need for cognition and need for closure did not predict blame updating for morally good and bad scenarios or for preventable and unpreventable scenarios. However, there were interactions between blame updating and the intentionality of the offense. My results suggest that people do update their blame judgments and, in some specific situations, blame updating might be related to need for cognition and need for closure.

Acknowledgments

I wish to sincerely thank Dr. Andrew Smith, who has been a true mentor through both the good times and the challenging times. His calming and cynical presence has made the final year of my graduate program very special, and allowed me to recover my footing when I have fallen short of my own expectations. For this I am eternally grateful. In addition I wish to thank Dr. Andrew E. Monroe, for accepting me into this program. Dr. Monroe has given me one of the greatest gifts that I have ever received, and that gift is the opportunity to continue my education. I also owe an enormous debt of gratitude to Dr. Twila Wingrove, for her role in my personal development and for providing a plethora of exciting research opportunities. A thank you to Dr. Rose Mary Webb for her superb leadership of the department and her willingness to serve not only as department chair, but as an accessible resource to the students at Appalachian State University. Dr. Webb has always acted above the expectations of her station with dignity and grace. To all the professors in the experimental program I extend my gratitude to Dr.'s Breitenstein, Dickinson, Holden, Steele, Bazzini, Emery, Ballard, and Zrull.

I next wish to thank my fellow graduate students upon whom I have leaned for strength during the course of the academic years and a global pandemic. Thank you to Jade Schilling, Patricia Ferreira, Celia Whisman, Micalee Segers, and Christian Hall. I wish all of you the best in your future, and I am in awe of your accomplishments.

Thank you to all the members of my family for your support, and to my personal friends for always being there. You are too numerous to mention, but very special to me.

Dedication

I would like to dedicate this thesis to my Great Uncle David, and I would like to say that I have finally had a small measure of success.

Table of Contents

Need for Cognition and Need for Closure:

Two Potential Moderators of Systematic Blame Updating

How people make blame judgments has been hotly debated in psychology for decades. Currently, two theoretical perspectives suggest opposing views for how people make and revise their moral judgments. These models diverge regarding the degree to which they view bias as a default versus an exception in the process of making moral judgments. Recently Monroe and Malle (2019) proposed a Socially-Regulated Model of Blame (SRM). This model posits that moral judgments are systematically responsive to information about agents' minds and the outcomes they cause (Malle et al., 2014; Monroe & Malle, 2017; 2019). This theory builds on numerous past studies demonstrating that factors like intentionality, foresight, degree of harm caused, causality, and motive exert strong and consistent effects on the severity of people's moral judgments of others (e.g., Chernyak & Sobel, 2016; Cushman, 2008; Gray et al., 2012; Lagnado & Channon, 2008; Reeder & Coovert, 1986; Shaver, 1985; Weiner, 1995; Young & Saxe, 2009). Critically, this perspective argues that relatively careful and systematic use of mental state information in moral judgments is a default (not an exception) because moral acts like blaming are costly social actions, where blaming unfairly may open oneself up to criticism or censure (Coates & Tognazzini, 2012; Malle et al., 2014).

One possible critique of the SRM is that its prediction that people make relatively careful and systematic judgments appears to assume that people are rational moral decision-makers, in contrast to a large body of work showing evidence for motivated cognition in moral judgment (Alicke, 2014; Ames & Fiske, 2014; Ditto & Lopez, 1992; Haidt, 2001; Tetlock et al., 2007). Indeed, an opposing theoretical position underlying Motivated-Blame (MB) models posits that people act like "intuitive prosecutors" who are motivated to blame and punish wrongdoers

(Tetlock et al., 2007). In this model, moral judgments are relatively evidence free. Moral judgments precede consideration of evidence (e.g., intentionality, preventability, causality) and instead actually influence judgments of such moral evidence to fit existing moral judgments (Ditto & Lopez, 1992). That is, when people encounter a norm violation (e.g., a driver cutting someone off) moral judgments emerge reflexively (Haidt, 2001) and then biases subsequent information processing in favor of information that supports or even intensifies already made moral judgments (Alicke, 1992; 2000; Alicke et al., 2011; Haidt, 2001).

The present study looked into the possibility that some people update their blame judgments more than others. Specifically, I tested whether individual differences in need for cognition (Cacioppo & Petty, 1982; Cacioppo et al., 1984) and need for closure (Crowson, 2013; Roets & Van Hiel, 2011) are related to an individual's amount of overall blame updating. I focused on these specific traits as they have been associated with cognitive rigidity (Dolinski et al., 2016) as well as more punitive decision making (Sargent, 2004), and less empathy (Wiech et al., 2013). Below I discuss evidence for the Socially Regulated Model of Blame (SRM), critiques of the model, and evidence for the role of individual differences in personality traits influencing moral cognition.

Evidence for Motivated Blame Models

Early research on blame focused on how individuals are not flexible in their blame. The idea was that individuals make a blame judgment first and then try to justify their blame (Haidt, 2001; Tetlock et al., 2007). The MB's main tenant is that people are motivated to blame and are reliably biased when making moral judgments (Alicke & Davis, 1989; Alicke et al., 1990; Alicke, 1992; Alicke, 2000; Ames & Fiske, 2013; Ditto & Lopez, 1992; Haidt, 2001; Mazzocco et al., 2004; Tetlock et al., 2007). For instance, work by Alicke and colleagues suggests that the

moral valence of an outcome (e.g., severity of harm, whether a victim is sympathetic or not) biases people's perceptions of morally-relevant evidence (e.g., mental states, harmfulness, preventability of harm; Alicke & Davis, 1989; Mozzacco et al. 2004). For example, in four studies Alicke and Davis (1989) demonstrated that the moral character of a victim (e.g., an innocent bystander vs. a dangerous criminal) biases judgments of preventability. Participants were presented with a vignette where a man finds another individual in his home while the rest of his family is away. The man is surprised by the intruder and in haste fires a weapon at the shadowy figure, killing him. At the end of the vignette, the participants are informed that the intruder was either a criminal (violent or non-violent) or the man's daughter's boyfriend stopping by the house to retrieve some items she had left behind. Afterwards, participants were asked how much danger the man was in and how much blame and punishment he deserved. Even though the situation was identical, and participants judged the danger to the man as identical across conditions, the actor was blamed more for killing the boyfriend than the criminal because of perceived preventability. Critically, in Study 4, Alicke and Davis (1989) asked participants to explain their blame judgments and found that people believed that the man could have done more to avoid causing harm in the boyfriend condition compared to the criminal condition. Alicke and Davis (1989) argue that this suggests a motivated bias where people reason backwards from an outcome. Participants judge that killing an innocent bystander is worse than killing a criminal, and therefore they adjust their beliefs about moral evidence—in this case whether the man could have prevented the outcome—to fit their preexisting blame judgments.

Similar to Alicke and Davis (1989), Mazzocco et al. (2004) conducted five studies where participants read about an individual, a neighbor, who was responsible for checking on a child left alone. When the individual was confronted by an intruder, they used either a gun or a

baseball bat to kill the intruder. The results demonstrated that the weapon used to kill an intruder affected the levels of blame for the actor killing a criminal or innocent person. The actor was blamed more for killing an individual if a gun was used than if a baseball bat was used in the killing. In addition, even if the actor accidently injured the intruder (by calling out to them and causing them to turn and fall down the stairs), whether the intruder was a criminal or an innocent victim still influenced the severity of participant blame. Mozzacco and colleagues then used a within-subjects design to see if participants would blame the actor less severely if they were aware of both scenarios. However, the participants were little changed by being aware of both instances; they still blamed the actor for shooting the innocent victim more than for shooting a criminal breaking into the home. These studies demonstrate how robust this bias is. Specifically, people are swayed by the outcomes of a situation (thus perceived preventability of the situation) and not the contextual evidence within a situation.

Alicke (1992) conducted a study in which an actor got into an accident at an intersection injuring another driver. The actor was speeding and trying to get home before his parents to hide *either* an anniversary gift for them or a vial of cocaine for himself. Participants were asked to judge how responsible the actor was for the accident and if the actor was the cause of the accident. Alicke (1992) found that when the driver was rushing home to hide a vial of cocaine, people judged him as more blameworthy and critically more causal and responsible for the crash compared to when he was rushing home to hide a present for his parents. Alicke (1992) argued that these findings demonstrate that moral considerations—for example the badness of the driver's motives—bias judgments of moral evidence (e.g., causality).

Tetlock et al. (2007) extended this idea to argue that people act as "intuitive prosecutors" when making moral judgments—meaning that people have a desired outcome in mind (e.g., that

wrongdoers suffer)—and they change their evidential standards to support this outcome rather than having moral evidence inform their judgments. Specifically, Tetlock et al. (2007) argued that people's motivations to protect themselves from threats to the social order drive punitive behavior to ensure that wrongdoers suffer, and the social order is upheld. Tetlock and colleagues presented scenarios of civil cities with low crime and high prosecution rates that devolved into high crime and low prosecution rate cities (activated punitive mindset) to participants. Tetlock et al. (2007) also presented participants with cities that had either a low or a high prosecution rate versus a neutral condition with no information about prosecution rates in the city. Then the participants were presented with a violent crime and found that when societal norms are rarely enforced (i.e., low prosecution rates) individuals were more punitive towards a norm violator. In other words, the perceived threat to societal norms drives punitive behavior.

One mechanism that is thought to drive biased judgments is by engaging in biased information searches. For example, Ditto and Lopez (1992) found that individuals who received evidence consistent with their preferences are more likely to stop looking for information compared to individuals who receive information inconsistent with their preferences. This latter group was more likely to continue searching for information, be slow to accept the reality of the true nature of the outcome, and are more likely to bring in outside factors as an explanation for the preference-inconsistent outcome such as finding ways to discredit or explain away preference-inconsistent information. Together, these studies argue that bias in moral judgments may be a default and careful judgments are an exception.

Evidence for Socially Regulated Blame

Although the MB model of blame has been supported by a multitude of past research, recently Monroe and Malle (2019) developed the SRM. The SRM states that people

systematically attend to information about an agent's mental states (e.g., intentions and motives), their causal contributions to a harmful outcome, and their ability and social obligation to prevent such an outcome (Monroe & Malle, 2019). Importantly, the motivation for such careful attention to morally-relevant information derives from blame's ancient function as a tool for regulating others' behavior (Monroe & Malle 2019; Rai & Fiske, 2011). Blaming others—condemning, shunning, or punishing—is an effective way to reduce selfish behavior (Fehr & Fischbacher, 2004; Fehr & Gächter, 2002; Guala, 2012) and increase group cooperation (Guala, 2012), even in naturalistic contexts (Przepiorka & Berger, 2016). For example, in anthropological research with the Mbatu tribe in the Congo (Turnbull, 1961), a hunter who selfishly positioned himself advantageously during cooperative group hunting was subsequently subjected to ridicule by other tribe members, and ultimately apologized and handed over his share of the meat to make amends. Similarly, Przepiorka and Berger (2016) found that passengers on a train would often enforce social norms against a confederate rule breaker in a quasi-experimental field study. For example, when the confederate played loud music in a silent train car, the passengers confronted the norm breaker 45 out of 90 times. Interestingly, the passenger interventions were correlated with the number of passengers on the train. The more passengers on the train the more likely it was that someone would confront the norm breaker. This willingness to confront and punish rule breakers combined with an aversion to being blamed and punished forms the basis of the SRM.

The tendency to punish for perceived unfairness extends to those individuals who are not directly harmed by another's wrongdoing, but are nevertheless willing to punish wrongdoers, even at a personal cost to themselves. This assertion is supported by evidence from economic game studies that demonstrate punishment in situations such as the dictator game, the ultimatum game, and a public goods game (Fehr & Fischbacher, 2004; Fehr & Gächter, 2002). For

example, Fehr and Gächter (2002) studied whether individuals are willing to pay a cost in order to punish wrongdoing, what is often termed "altruistic punishment." In their experiment, each participant had 20 money units and could contribute however much or little as they wished to a group pool that would be multiplied by 0.4, and then redistributed to all group members equally. This scenario creates an incentive for individuals to free ride (i.e., under-contribute to the group pool), especially if they believe all of the other group members will contribute. However, the other members of the group had the right to use whatever money remained in their coffers to punish any other group member for failing to contribute enough money to the pool. The study showed that over ten rounds of the game, with a new group each round, participants routinely punished under-contributors, and consequently cooperation (i.e., the amount each group member contributed to the group pool) increased each round relative to a no-punishment condition. This demonstrates that individual group members are willing to punish others at a cost to successfully increase group cooperation and adherence to acceptable levels based upon their perceived shared social norms.

Furthering this point, Fehr and Fischbacher (2004) used an economic game to demonstrate that third parties use altruistic punishment with increased severity as the player that is being punished deviates further from the socially accepted and expected norm. The basic premise of the economic game is similar to a dictator game where Player A (the dictator) has the option to give Player B (the receiver) any amount of his or her money, and Player B must accept whatever is offered. However, this particular study added an additional player: an unaffected third-party observer, Player C, who could punish Player A if he or she deems that Player A's financial contribution to Player B was not fair. During the dictator game, two-thirds of Player C's punished Player A's for not offering enough to Player B's. Further, when polled separately

many Player B's expressed a belief that Player C's would punish the Player A's for unfair amount transfers. This may indicate the people expect uninvolved (but powerful) third-parties to punish observed wrongdoing even when they are not directly harmed.

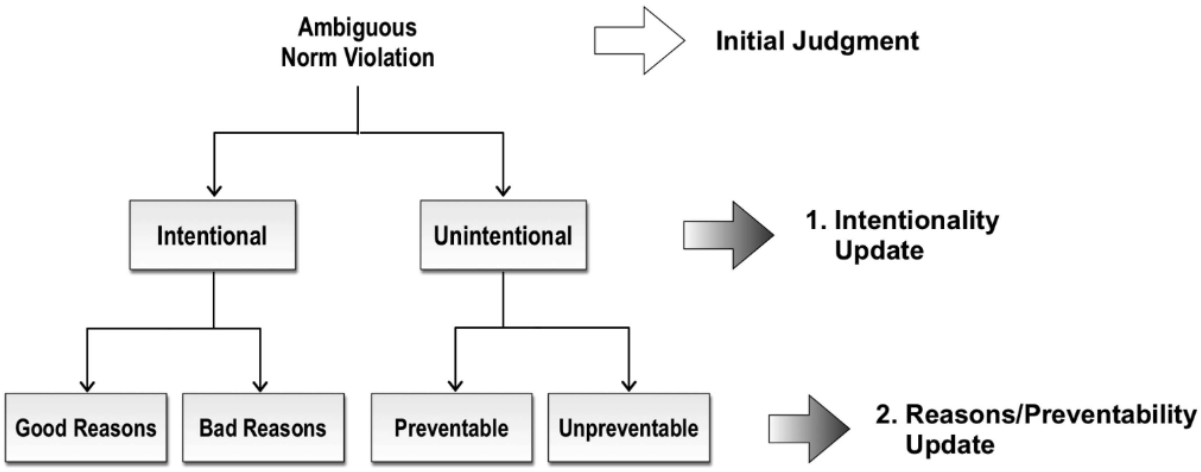
The willingness of individuals to use altruistic punishment extends beyond the context of economic interactions. Blaming often involves a public loss of status, face, or resources for moral offenders, and people are (unsurprisingly) strongly averse to being blamed without good reason (MacCoun, 2005; Miller, 2001), but blaming that can be 'backed up' improves social relationships. For example, McNulty and Russell (2010) found that when newlyweds blamed their partners for relatively minor misdeeds, those behaviors were associated with subsequent declines in marital satisfaction. However, when there was clear cause for blame (i.e., when misdeeds were severe), blaming one's partner led to improved marital satisfaction. This suggests that blaming, especially when there is evidence to back up the judgment, regulates and improves social relationships; however, blaming without sufficient justification damages social bonds. Together, these findings suggest that blaming unfairly carries potentially large social costs. Because of this feature of blame, the SRM argues that people are motivated to attend to information they can present to justify their judgments if challenged, and they will flexibly update their judgments based upon new information so that their blame is continually justifiable (Monroe & Malle, 2019).

This research add support for the three main tenets of the SRM (Monroe & Malle, 2019) that are important for my study. The first tenet of the SRM is that blame is socially regulated, meaning that blame is used as a social tool to punish wrongdoers, correct behaviors, and is used carefully because the blamer fears being blamed and punished should they wrongly blame an innocent individual. The second tenet is that blame is flexible, and that individuals freely update

their blame when new information emerges. The third tenet is that the pattern of this updating follows an ambiguous norm violation where an individual makes an initial judgment. Then an individual must recognize if this was an intentional act or an unintentional act as that has blame severity implications. If the act was intentional the individual must recognize if it was conducted for a morally good or morally bad reason. If the individual recognizes the act as unintentional then the individual must recognize whether this act was preventable or unpreventable and update their blame accordingly (see Figure 1).

Figure 1

Visual Model of the Socially Regulated Model of Blame From Monroe and Malle (2019)



As a test of their model, Monroe and Malle (2019) had participants view 36 blame trials. For each trial, the participants were first shown an initial blameworthy offense ("Ted hit a man with his car"), and then asked how much they blamed the perpetrator for the offense. Then the participants were given additional information that the perpetrator committed this act for either a morally good, morally bad, intentional, unintentional, preventable, or unpreventable reason. The participants were then given the option, but not the requirement, to update their blame judgment. In line with their predictions, Monroe and Malle (2019) found that the vast majority of

participants updated their blame from initial judgments to final judgments when given new information. More specifically, when given mitigating information (e.g., the offense was unintentional), participants decreased their blame judgments whereas when given exacerbating information (e.g., the offense was intentional), participants increased their blame judgments. Overall, the research by Monroe and Malle (2019) demonstrated that, at least in some situations, people do update their blame judgments when presented with additional information.

Individual Differences and Moral Judgments of Blame

As noted above, Monroe and Malle's (2019) research clearly demonstrated that people can update their blame judgments when given new information. However, what is not known is whether there are personality factors that moderate the amount of updating. Therefore, the primary goal of my study was to test whether individual differences are related to how much people update their moral judgments of blame. Specifically, I focused on whether two traits: (1) need for cognition and (2) need for closure, relate to how people update their blame judgments after receiving new information. I focus on these traits because they have well-documented relationships with non-moral decision making and are suggestive candidates for moral updating.

Need for cognition is an individual's desire to engage in effortful cognitive processes (Cacioppo & Petty, 1982; Cacioppo et al., 1984). Individuals who are high in need for cognition may be thought of as generally better decision makers than those individuals with a low need for cognition. For instance, Nair and Ramnarayan (2000) conducted an experimental simulation using company managers who had to make a myriad of decisions while facing complex problems to keep the simulation successfully running. Managers who were higher in need for cognition were better at solving the complex problems, asked more questions, and faced fewer crises during the simulation versus managers who were lower in need for cognition.

In addition to these findings, D'Agostino and Fincher-Kiefer (1992) found that, relative to people high in need for cognition, individuals who scored low in need for cognition were more likely to fall victim to the correspondence bias—the tendency to explain behaviors via an actor's personal qualities rather than due to influence from the situation. This effect was true even when a weak cognitive load task was introduced, and although both high and low need for cognition individuals perform worse under cognitive load, the effect remained significant—with people high in need for cognition resisting the correspondence bias more than people low in need for cognition. The implications of this study are that high need for cognition individuals seem less susceptible to certain types of bias than their low need for cognition peers. The difference is so pronounced that even under cognitive load, people high in need for cognition are less likely to fall prey to the correspondence bias.

More closely related to moral decision making, Gollwitzer et al. (2016) examined the need for cognition and deliberative thought tasks to look at individuals as intuitive retaliators. Participants were primed either to have an intuitive mindset (e.g., writing about a time where intuition served them well) or a reflective mindset (e.g., writing about a time that thinking deeply helped them). Participants read four vignettes about actors who were wronged and decided to retaliate. The idea was that individuals who were primed to be more intuitive would demonstrate greater acceptance of retaliation compared to individuals primed to be reflective. The findings were mixed, but did show an important effect of need for cognition. High need for cognition individuals were less accepting of retaliation by the victim regardless of the priming condition. By contrast, the priming condition was effective on people low in need for cognition. Low need for cognition participants in the intuitive priming condition approved of retaliation more, compared to low need for cognition participants in the reflective condition. This demonstrates

that high need for cognition individuals are not only less susceptible to bias and intuition, but that they may also be less punitive when making moral judgments than their low need for cognition peers.

In this vein, Sargent (2004) measured participants' need for cognition and its relationship to the endorsement of punishment for criminals. Sargent (2004) assessed participants' need for cognition, punitiveness, and attributional complexity. The findings suggested that individuals high in need for cognition were associated with less punitive attitudes than individuals with low need for cognition, and that this relationship was mediated by attributional complexity—or the degree to which one attributes abstract causes to behavior. For example, people who score highly on the measure of attributional complexity tend to put a lot of thought into the many causes of people's behavior, including both situational and dispositional explanations. Together these studies suggest that high need for cognition individuals may make decisions in slightly different ways than their low need for cognition peers. These high need for cognition individuals may be less susceptible to bias, less prone to intuitive thought, less retributive, and less punitive because they generate more accurate attributions for human behavior such as in the case of not falling victim to the correspondence bias (D'Agostino & Fincher-Kiefer, 1992).

Whereas need for cognition describes the drive to engage in effortful cognitive work, the need for closure is somewhat opposite. Need for closure is a preference for certain and sure knowledge and a dislike of ambiguity (Crowson, 2013; Kruglanski, 1990; Roets & Van Hiel, 2011). As many moral situations are often ambiguous, it is possible that need for closure will predict harsher moral judgments as people high in need for closure make more extreme initial judgments and are less willing to revise them. Supporting this view, Giacomantonio et al. (2017) investigated the role of need for closure on the acceptance of utilitarian (i.e., punishment meant

to deter future infractions) versus retributive punishment (i.e., punishment meant to make wrongdoers suffer) and found that people higher in need for closure were more supportive of retributive punishment compared to people low in need for closure. Similarly, Kenhove et al. (2001) found that high need for closure individuals showed more ethical belief preferences, demonstrated more idealism, and lower scores on Machiavellianism than did low need for closure individuals. Based on these findings it is reasonable to predict that high need for closure individuals may view blameworthy acts less punitively than their low need for closure peers.

Not only is need for closure predictive of more punitive moral sentiments, but it may also predict opposition to revising previous judgments. Dolinski et al. (2016) found that when individuals high in need for closure were presented with a misleading headline (which they did not know was misleading) about a doctor accused of malpractice and then given the opportunity to gather new information, they were more rigid and punitive in the assessment of the doctor. Although there is limited research linking need for closure to moral judgment, these existing studies are suggestive that high need for closure individuals may be more punitive and less likely to update their moral judgments of blame than their low need for closure counterparts.

The Present Study

This study seeks to understand the role that need for cognition and need for closure play in how people make and update their moral judgments. Participants were confronted with vignettes that consisted of limited information about an actor and an incident that occurred, and asked to make a judgment of blame about the actor who caused the incident. Then the participants were informed about why that incident occurred and given the opportunity but not the requirement to update how much they blame the actor for the incident. The reasonings for the incidents varied one of the following factors: valence (morally good reasons [to help someone]

or morally bad reasons [to hurt someone]), intentionality (intentional [done on purpose] or unintentional [done on accident]), preventability (preventable [could have been avoided] or unpreventable [could not have been avoided]).

This study is composed of eight predictions for how need for cognition and need for closure might be related to the blame updating process.

Overall, there will be a positive relationship between an individual's need for cognition and the amount of blame updating (H_1). Overall, there will be a negative relationship between an individual's need for closure and the amount of blame updating (H_2).

There will be an interaction between need for cognition and valence (morally good vs morally bad reasons) for blame updating. Specifically, there will be a weak positive relationship between need for cognition and blame updating for morally bad reasons, but a strong positive relationship between need for cognition and blame updating for morally good reasons (H_3). There will be an interaction between need for closure and valence (morally good vs morally bad reasons) for blame updating. Specifically, there will be a weak negative relationship between need for closure and blame updating for morally bad reasons, but a strong negative relationship between need for closure and blame updating for morally good reasons (H_4).

There will be an interaction between need for cognition and intentionality (intentional vs. unintentional reasons) for blame updating. Specifically, there will be a weak positive relationship between need for cognition and blame updating for intentional reasons, but a strong positive relationship between need for cognition and blame updating for unintentional reasons (H_5). There will be an interaction between need for closure and intentionality (intentional vs. unintentional reasons) for blame updating. Specifically, there will be a weak negative relationship between need for closure and blame updating for intentional reasons, but a strong

negative relationship between need for closure and blame updating for unintentional reasons (H_6).

There will be an interaction between need for cognition and preventability (preventable vs unpreventable reasons) for blame updating. Specifically, there will be a weak positive relationship between need for cognition and blame updating for preventable reasons, but a strong positive relationship between need for cognition and blame updating for unpreventable reasons (H_7). There will be an interaction between need for closure and preventability (preventable vs unpreventable reasons) for blame updating. Specifically, there will be a weak negative relationship between need for closure and blame updating for preventable reasons, but a strong negative relationship between need for closure and blame updating for unpreventable reasons (H_8).

Method

Participants

I recruited two samples for this study. One sample was an online sample acquired by using the platform Prolific (n = 198) and the other sample was a student sample acquired from Appalachian State University (n = 392). See Table 1 for the demographic information for the online and student samples. There were challenges in garnering funding for this study and conducting this study during a pandemic. In an effort to ensure that this study had enough participants, I decided to collect a student sample as well as a community sample. The student sample was a low-cost alternative to the online sample, but eventually an online sample was collected.

I used a sensitivity power analysis in G*power (Faul et al., 2009) to determine how much power the study had *post hoc*.[1] This power analysis showed that I had a 95% chance of detecting a medium to small effect (d = .29).

The study was conducted online and took no more than 30 minutes to complete. The online participants received $5.00 for their participation while the student sample received course credits. The only exclusion criteria were that participants under the age of 18 were not allowed to participate.

Table 1

Demographic Information for the Student and Online Samples

	Online Sample (n = 198)		Student Sample (n = 392)	
Age	35.70	(SD = 11.80)	19.10	(SD = 2.54)
Female	57.73%	(n = 112)	74.67%	(n = 286)
Male	42.27%	(n = 82)	25.33%	(n = 97)
Caucasian	67.17%	(n = 133)	84.86%	(n = 325)
Hispanic	0.07%	(n = 14)	0.07%	(n = 26)
Asian	13.64%	(n = 27)	0.02%	(n = 7)
Black	6.57%	(n = 13)	0.04%	(n = 16)
Multiracial	1.01%	(n = 2)	0.02%	(n = 6)
Native American	1.53%	(n = 3)	0.003%	(n = 1)

[1] G*Power is not capable of running the exact statistical power analysis I need, but it can run similar analyses. The ANCOVAs that I used are repeated measures ANCOVAs with one covariate. However, G*Power can only calculate power with a between subjects ANCOVA. In setting up the sensitivity power analysis I wanted a 95% chance of detecting an effect and the alpha error probability = 0.05. The total sample size was n = 590.

Measures

Blame Updating Task

The participants read a brief set of instructions describing the moral updating task; they next completed three practice trials to familiarize themselves with the task, and then they completed the 36 trials (in blocks of 12) of the blame updating task. After 12 scenarios participants would receive a short 45 second break to rest before moving on to more trials. Each trial included four screens. On screen 1, participants read a brief description of a norm-violating event (e.g., "Eric broke Monica's arm."). These vignettes were designed to contain the minimum amount of information sufficient to make a blame judgment: an agent, a victim, and a clear harm. On screen 2, participants were asked to make an initial blame judgment prompted by the question "How much blame does [the perpetrator] deserve?" (0 none at all – 100 the most blame possible). The sliding scale starting point was set at 0. Once the participants made their initial blame judgments they clicked to the next screen. On screen 3 participants learned new information about the event. This new information described whether the behavior was intentional or unintentional, whether the agent acted for morally good or bad reasons, or whether the agent could have foreseen and prevented the outcome or not. For example, for the initial event "Ted hit a man with his car," a participant would have read one of the six types of new information described below:

1) **Intentional + morally bad reasons**: Ted intentionally hit a man with his car because he was in a hurry and did not feel like waiting on the man to cross the street.
2) **Intentional-only**: Ted intentionally hit a man with his car.

3) **Intentional + morally good reasons**: Ted intentionally hit a man with his car because he saw the man had a knife and was chasing a young, frightened woman.
4) **Unintentional + Preventable**: Ted accidentally hit a man with his car. Ted didn't check his blind spot before backing up.
5) **Unintentional-only**: Ted accidentally hit a man with his car.
6) **Unintentional + Unpreventable**: Ted accidentally hit a man with his car. Even though they were properly maintained, Ted's brakes failed to work.

The six types of new information were manipulated within-subjects, but any given participant saw only one new-information version of a given event narrative. In total, participants saw six replications of each type of new information, for a total of 36 events.

After participants read the updating information, they moved to screen 4 where they were presented with the blame slider bar again. The pointer was set at the position of their initial judgment, and they were asked if they wished to change their judgment ("Knowing this new information, how much blame does [the perpetrator] deserve?" 0 none at all – 100 the most blame possible). Once this step was completed, the participant was asked to briefly describe what happened in the previous scenario.

Need for Cognition

Need for cognition is how much an individual enjoys thinking about and engaging in effortful cognitive processes (Cacioppo & Petty, 1982; Cacioppo et al., 1984) (see Appendix A). The Need for Cognition Short Form Revised 18-Item Scale (Cacioppo et al., 1984) is based upon an original 34-Item Need for Cognition Scale created by Cacioppo and Petty (1982). The Need for Cognition Short Form Revised 18-Item Scale consists of 18 questions concerning preferences on the enjoyment of thinking with nine items that are reverse coded. Examples of these

statements are “I would prefer complex to simple problems,” “I find satisfaction in deliberating hard and for long hours,” and “I really enjoy a task that involves coming up with new solutions to problems.” These statements were answered on a 5-point scale ranging from “1 = extremely uncharacteristic; 2 = somewhat uncharacteristic; 3 = uncertain; 4 = somewhat characteristic; 5 = extremely characteristic.” The original 34-Item scale has a Cronbach’s alpha coefficient of .91, and the Need for Cognition Short Form Revised 18-Item Scale has a Cronbach’s alpha coefficient of .90 (Cacioppo et al., 1984). In this study the Need for Cognition Short Form Revised 18-Item Scale had a Cronbach’s alpha coefficient of .88.

Need for Closure

Need for closure is the need for sure and certain knowledge as opposed to ambiguity (Crowson, 2013; Kruglanski, 1990; Roets & Van Hiel, 2011) (see Appendix B). The Brief 15-Item Need for Closure Scale is based upon a 41-Item Need for Closure Scale. The Brief 15-Item Need for Closure Scale consists of 15-items none of which are reversed scored. Examples of these items include “I don’t like situations that are uncertain,” “I feel irritated when one person disagrees with what everyone else in a group believes,” and “I would quickly become impatient and irritated if I would not find a solution to a problem immediately.” These statements were answered on a 5-point scale ranging from “1 (completely disagree) to 5 (completely agree).” The original 41-item scale has a Cronbach’s alpha of .90, whereas two separate studies using different samples have reported a Cronbach’s alpha of .87 for The Brief 15-Item Need for Closure Scale (Roets & Van Hiel, 2011; Crowson, 2013). In this study the The Brief 15-Item Need for Closure Scale had a Cronbach’s alpha coefficient of .82.

Procedure

Participants used the university's research website SONA and the website Prolific, which redirected them to a website specifically designed for this study. SONA is a system used by university students to participate in university-led research for class credit. Prolific, is a volunteer-based platform where individuals sign-up to volunteer for all manner of research experiments and tasks for monetary compensation. The participants then read and completed an informed consent document. After the participants consented to participate in the study they were confronted with a brief set of instructions and 3 practice trials for the blame updating task. Upon completion of the updating task the participants completed the updating task in three blocks of twelve. After completing all 36 trials, the participants completed the Need for Cognition Short Form Revised 18-Item Scale (Cacioppo et al., 1984), the Brief 15-Item Need for Closure Scale (Crowson, 2013; Roets & Van Hiel, 2011), a basic demographics questionnaire (inquiring about age, sex, ethnicity, education, nationality, political affiliation, and religiosity), and read a debriefing document.

Results

Preliminary Analyses

First, to examine the relationship between need for cognition and need for closure, I conducted a bivariate correlation, which showed a negative correlation between the two scales, $r(586) = -.35$, $p < .001$. This suggests that although these scales are related, the overlap is not so great that it suggests that need for cognition and need for closure are simply capturing opposite sides of the same construct.

I calculated blame updating by subtracting each participants' initial blame judgment from their final blame judgment. This was first done for each of the 36 scenarios. Next, I calculated

the absolute value of each difference score. And finally, I created a variety of blame updating scores: overall blame updating (i.e., the average across all 36 scenarios), blame updating for the scenarios that manipulated valence (good or bad reasons), blame updating for the scenarios that manipulated preventability (preventable or unpreventable reasons), and blame updating for the scenarios that manipulated intentionality (intentional or unintentional reasons). For all blame updating scores, higher values mean that people updated more (i.e., a larger difference between their initial and final blame judgment). Descriptive statistics for blame updating scores can be seen in Table 2.

Table 2

Descriptive Statistics for Participants' Initial Blame Judgments, Final Blame Judgments, and Blame Updating for All Scenarios and Split by Scenario Condition

	Initial Blame Judgment		Final Blame Judgment		Blame Updating	
	M	SD	M	SD	M	SD
All Scenarios	59.92	15.22	53.72	11.69	26.62	9.66
Valence						
Good	59.39	17.60	37.16	20.09	33.09	16.01
Bad	60.50	17.07	86.83	13.67	26.99	14.31
Intentionality						
Intentional	59.11	18.53	81.99	15.56	23.94	12.92
Unintentional	60.06	17.79	41.26	19.76	21.66	14.88
Preventability						
Preventable	60.25	17.51	45.05	18.91	21.39	13.16
Unpreventable	59.83	17.47	29.86	17/52	32.56	18.33

As noted earlier, I collected data from two samples. Prior to conducting my primary analyses, I examined whether these samples diverged on their need for cognition or need for closure. These analyses revealed a significant difference in the samples for need for cognition, $t(586) = 4.91$, $p < .001$, $d = 0.43$. The online community sample ($M = 3.37$, $SD = 0.71$) showed a

higher need for cognition compared to the student sample (M = 3.11, SD = 0.55). There were no differences between the student sample (M = 3.41, SD = 0.57) and the community sample (M = 3.40, SD = 0.64) for need for closure, $t(587) = 0.15$, $p = .88$, $d = 0.01$.

Also, I looked for sample differences on blame updating. There was a significant difference in the samples for blame updating, $t(587) = 2.14$, $p = .03$, $d = 0.19$. Participants in the student sample (M = 27.23, SD = 9.22) updated their blame more than participants in the community sample (M = 25.43, SD = 10.42).

Because there were sample differences for two of the three measures (i.e., need for cognition and blame updating), the tests of my hypotheses included sample as a factor.

Primary Analyses

To test my first hypothesis (H_1) that there would be a positive relationship between participants' need for cognition and amount of blame updating, I conducted a linear regression using need for cognition and sample (online vs. student) to predict people's overall blame updating. This analysis found that a participant's need for cognition did not significantly predict their amount of blame updating, b = 1.17, $t(584) = 1.79$, $p = .07$. This does not support my first hypothesis. Consistent with the previous analysis, the student sample updated their blame judgments more than the online sample, b = -2.09, $t(584) = 2.43$, $p = .02$.

To test my second hypothesis (H_2) that there would be a negative relationship between participants' need for closure scores and amount of blame updating, I conducted a linear regression using need for closure and sample (online vs. student) to predict people's overall blame updating. This analysis found that a participant's need for closure did not significantly predict their amount of blame updating, b = 0.04, $t(584) = 0.06$, $p = 0.95$. This does not support

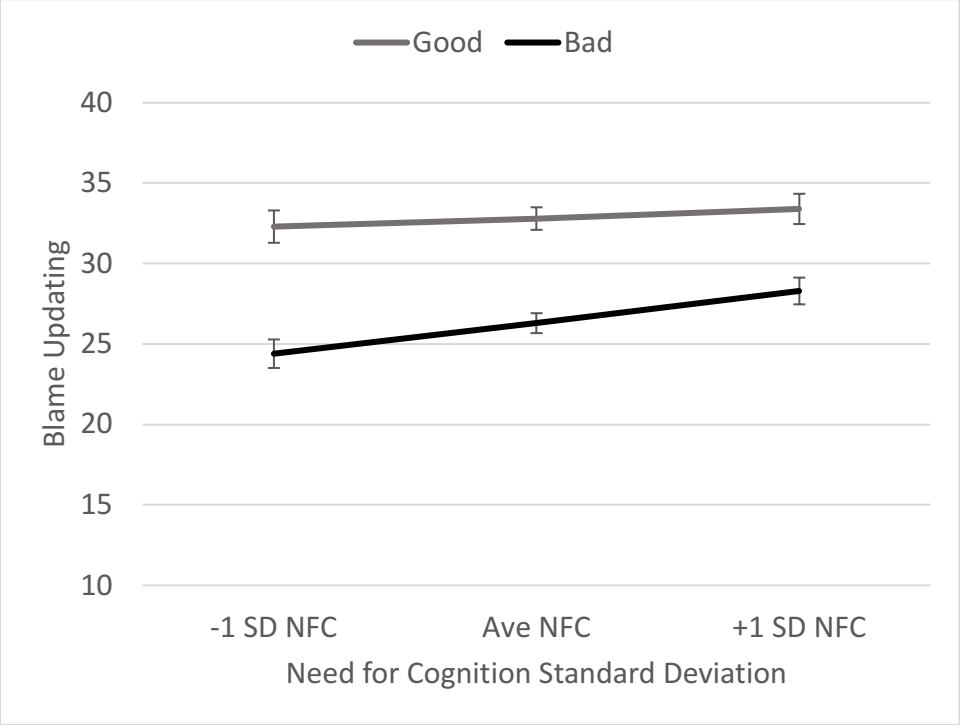
my second hypothesis. Consistent with the previous analysis, the student sample updated their blame judgments more than the online sample, b = -1.78, $t(584) = -2.11$, $p = .04$.

To test hypothesis 3, I conducted a 2 (sample: student vs. online) x 2 (valence: good vs. bad) mixed-model ANCOVA on participants' blame change scores, including need for cognition as a covariate. For this and the following analyses, I mean-centered the covariates. Sample was a between-subjects factor while valence was a within-subjects factor. This analysis found a significant main effect for valence, $F(1, 584) = 52.88$, $p < .001$, $\eta_p^2 = .083$. This shows that people updated their blame judgments more after learning morally good reasons than morally bad reasons. There was also a significant main effect for sample, $F(1, 584) = 7.13$, $p = .008$, $\eta_p^2 = .012$; the student sample updated their blame more than the online sample.

Unlike the previous analysis that looked at the relationship between need for cognition and blame updating for all 36 scenarios, this analysis that focused only on the scenarios involving good and bad reasons found a main effect for need for cognition denoting that higher need for cognition was related to more blame updating, $F(1, 584) = 6.99$, $p = .008$, $\eta_p^2 = .012$. There was not a significant interaction between valence and sample, $F(1, 584) = 1.61$, $p = .21$, $\eta_p^2 = .003$. Most importantly to hypothesis 3, there was not a valence x need for cognition interaction, $F(1, 584) = 2.76$, $p = .10$, $\eta_p^2 = .005$ (see Figure 2). This does not support my hypothesis because the relationship between need for cognition and blame change scores did not differ for good and bad reasons.

Figure 2

Relationship Between Need for Cognition and Blame Updating for Good and Bad Reasons

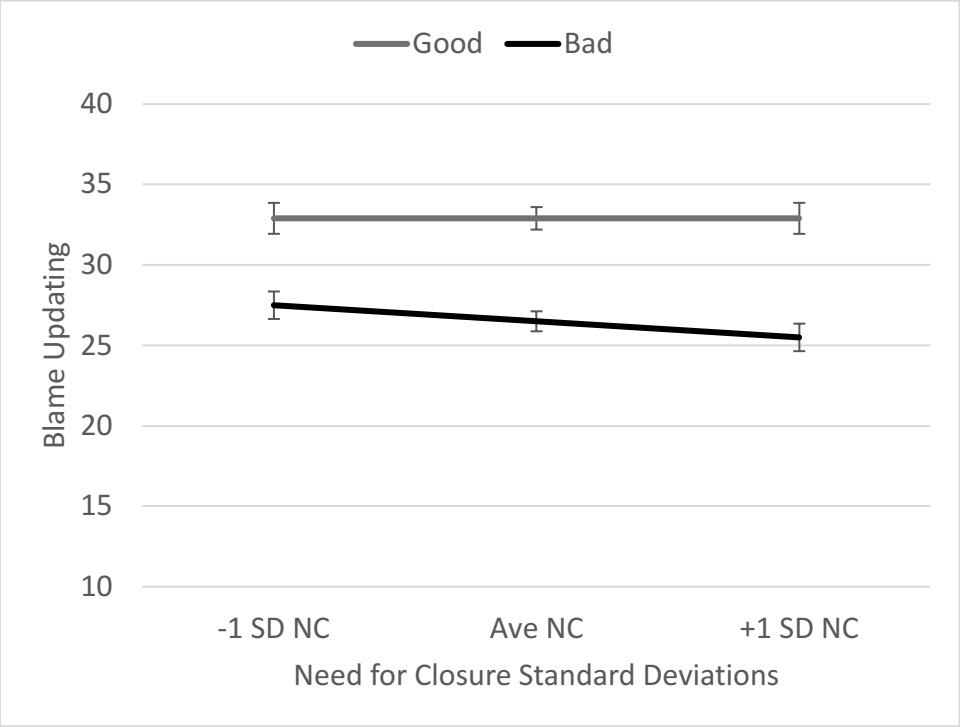


To test hypothesis 4, I conducted a 2 (sample: student vs. online) x 2 (valence: good vs. bad) mixed-model ANCOVA on participants' blame change scores, including need for closure as a covariate. Sample was a between-subjects factor while valence was a within-subjects factor. This analysis found a significant main effect for valence, $F(1, 585) = 51.06$, $p < .001$, $\eta_p^2 = .80$. This shows that people updated their blame judgments more after learning morally good reasons than morally bad reasons. There was also a significant main effect for sample, $F(1, 585) = 4.80$, $p = .03$, $\eta_p^2 = .008$. As was found in the previous analyses, the student sample updated their blame judgments more than the online sample. There was not a main effect of need for closure, denoting that need for closure was not related to blame updating, $F(1, 585) = 1.16$, $p = .28$, $\eta_p^2 = .002$. There was not a significant interaction between valence and sample, $F(1, 585) = 0.98$, $p = .32$, $\eta_p^2 = .002$. Most importantly to hypothesis 4, there was not a valence x need for closure

interaction, $F(1, 585) = 1.34$, $p = .25$, $\eta_p^2 = .002$ (see Figure 3). This does not support my hypothesis because the relationship between need for closure and blame change scores did not differ for good and bad reasons.

Figure 3

Relationship Between Need for Closure and Blame Updating for Good and Bad Reasons



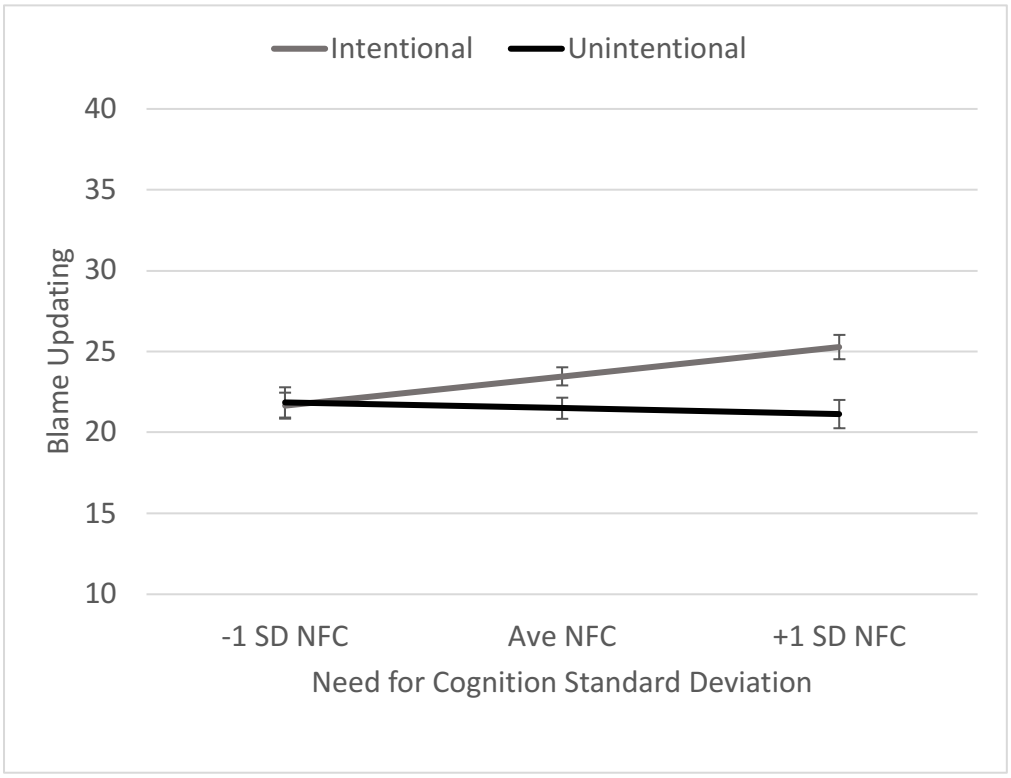
To test hypothesis 5, I conducted a 2 (sample: student vs. online) x 2 (intentionality: intentional vs. unintentional) mixed-model ANCOVA on participants' blame change scores, including need for cognition as a covariate. Sample was a between-subjects factor while intentionality was a within-subjects factor. This analysis found a significant main effect for intentionality, $F(1, 584) = 5.42$, $p = .02$, $\eta_p^2 = .009$. This shows that people updated their blame judgments more after learning intentional reasons than after learning unintentional reasons.

There was also a significant main effect for sample, $F(1, 584) = 4.92$, $p = .03$, $\eta_p^2 = .008$. Again, the student sample updated their blame more than the online sample. There was not a main effect of need for cognition, denoting that need for cognition was not related to blame updating, $F(1, 584) = 2.98$, $p = .09$, $\eta_p^2 = .005$. There was not a significant interaction between intentionality and sample, $F(1, 584) = .85$, $p = .36$, $\eta_p^2 = .001$.

Most importantly to hypothesis 5, there was a intentionality x need for cognition interaction, $F(1, 584) = 7.09$, $p = .008$, $\eta_p^2 = .012$ (see Figure 4). I conducted two follow-up regression analyses to examine the pattern of this interaction. The first regression used need for cognition and sample predicting blame updating for intentional reasons. This analysis found that need for cognition was positively related to blame updating for intentional reasons, b =2.92, $t(584) = 3.36$, $p < .001$. Also, the student sample updated more than the online sample, b = -2.77, $t(584) = -2.42$, $p = .02$. The other linear regression used need for cognition and sample to predict blame updating for unintentional reasons. Need for cognition was not significantly related to blame updating, b = -.58, $t(584) = -.57$, $p = .57$, nor was the sample, b = -1.18, $t(584) = -0.89$, $p = .38$. Taken together, these results do not support hypothesis 5. I did predict a need for cognition X intentionality interaction, but the pattern of the interaction was not consistent with my hypothesis.

Figure 4

Relationship Between Need for Cognition and Blame Updating for Intentional and Unintentional Reasons



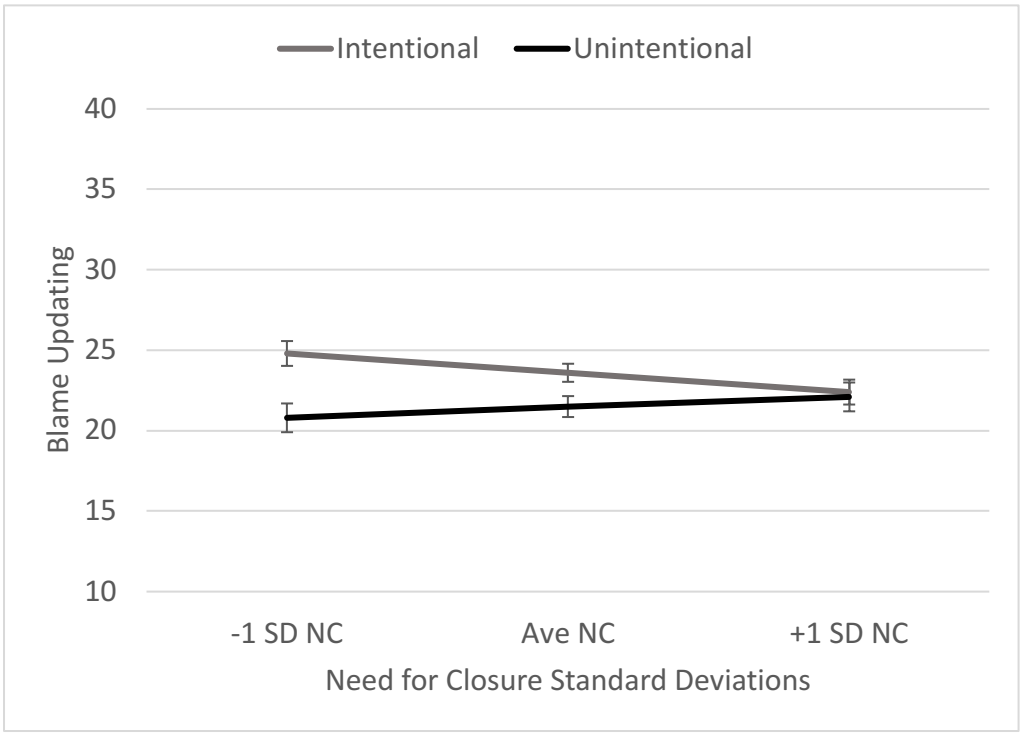
To test hypothesis 6, I conducted a 2 (sample: student vs. online) x 2 (intentionality: intentional vs. unintentional) mixed-model ANCOVA on participants' blame change scores, including need for closure as a covariate. Sample was a between-subjects factor while intentionality was a within-subjects factor. This analysis found a significant main effect for intentionality, $F(1, 585) = 6.40$, $p = .012$, $\eta_p^2 = .011$. This shows that people updated their blame judgments more after learning intentional reasons than after learning unintentional reasons. There was not a significant main effect for sample, $F(1, 585) = 3.64$, $p = .06$, $\eta_p^2 = .006$. Therefore, the student sample did not update their blame more than the online sample. There was

not a main effect for need for closure denoting that need for closure was not related to blame updating, $F(1, 585) = 0.52$, $p = .47$, $\eta_p^2 = .001$. There was not a significant interaction between intentionality and sample, $F(1, 585) = .19$, $p = .66$, $\eta_p^2 < .001$.

Most importantly to hypothesis 6, there was an intentionality x need for closure interaction, $F(1, 585) = 5.29$, $p = .02$, $\eta_p^2 = .009$ (see Figure 5). I conducted two follow-up regression analyses to examine the pattern of this interaction. The first regression used need for closure and sample predicting blame updating for intentional reasons. This analysis found that need for closure was negatively related to blame updating for intentional reasons, b = -2.05, $t(585) = -2.29$, $p = .02$. However, the student sample did not update their blame significantly more than the online sample, b = -2.03, $t(584) = -1.81$, $p = .07$. Need for closure was not significantly related to blame updating, b = 1.04, $t(585) = 1.01$, $p = .311$, nor was the sample, b = -1.29, $t(584) = -0.99$, $p = .32$. Taken together, these results do not support hypothesis 6. I did predict a need for cognition X intentionality interaction, but the pattern of the interaction was not consistent with my hypothesis.

Figure 5

Relationship Between Need for Closure and Blame Updating for Intentional and Unintentional Reasons

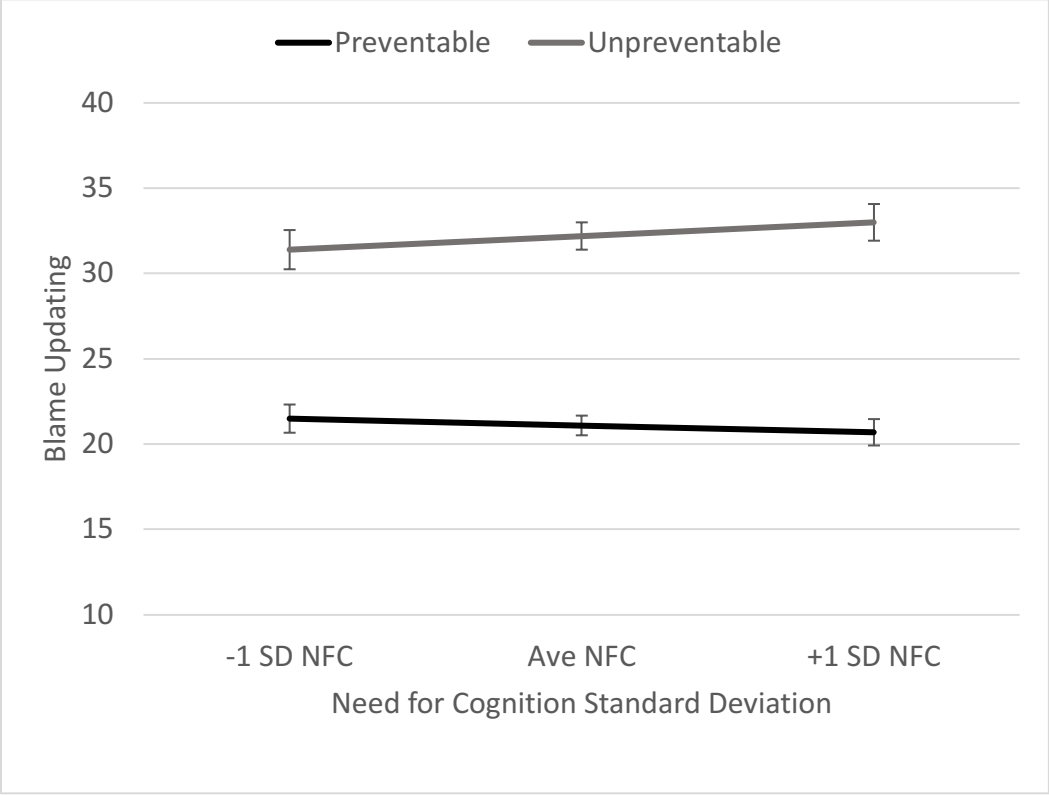


To test hypothesis 7, I conducted a 2 (sample: student vs. online) x 2 (preventability: preventable vs. unpreventable) mixed-model ANCOVA on participants' blame change scores, including need for cognition as a covariate. Sample was a between-subjects factor while preventability was a within-subjects factor. This analysis found a significant main effect for preventability, $F(1, 584) = 282.20$, $p = .001$, $\eta_p^2 = .326$. This shows that people updated their blame judgments more after learning preventable reasons than after learning unpreventable reasons. There was not a significant main effect for sample, $F(1, 584) = 1.95$, $p = .16$, $\eta_p^2 = .003$. Therefore, the student sample did not update their blame more than the online sample. There was not a main effect for need for cognition denoting that need for cognition was not related to blame

updating, $F(1, 584) = .12$, $p = .73$, $\eta_p^2 = .000$. There was not a significant interaction between preventability and sample, $F(1, 584) = .15$, $p = .70$, $\eta_p^2 = .000$. Most importantly to hypothesis 7, there was not a preventability x need for cognition interaction, $F(1, 584) = 3.63$, $p = .06$, $\eta_p^2 = .006$ (see Figure 6). This does not support my hypothesis because the relationship between need for cognition and blame change scores did not differ for preventable and unpreventable reasons.

Figure 6

Relationship Between Need for Cognition and Blame Updating for Preventable and Unpreventable Reasons

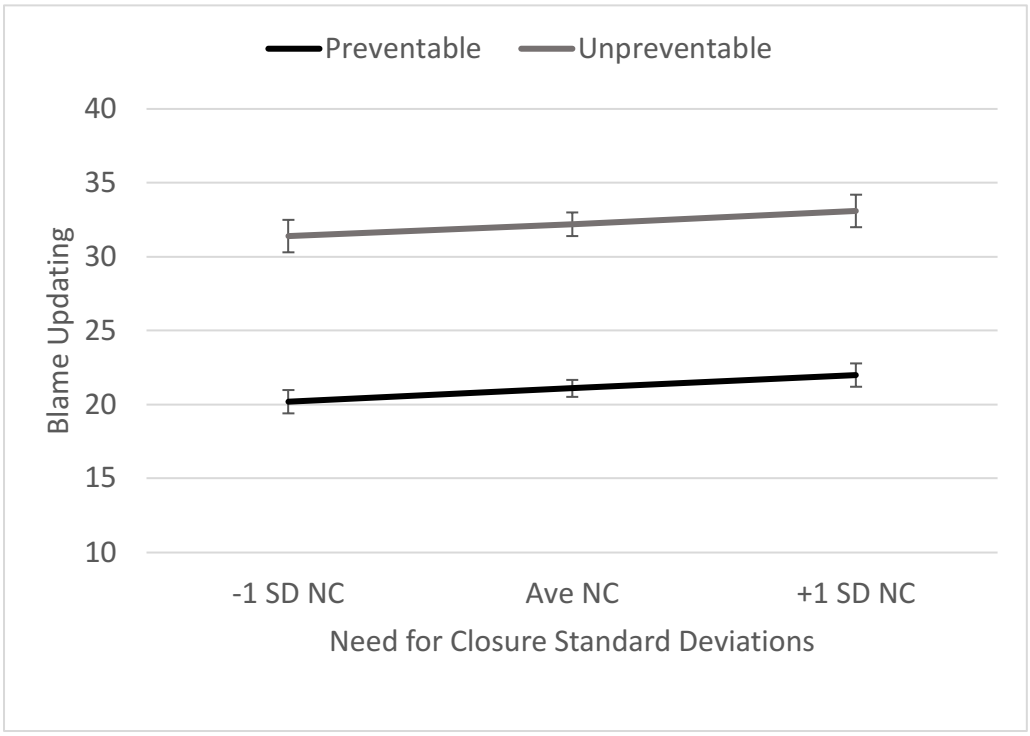


To test hypothesis 8, I conducted a 2 (sample: student vs. online) x 2 (preventability: preventable vs. unpreventable) mixed-model ANCOVA on participants' blame change scores, including need for closure as a covariate. Sample was a between-subjects factor while

preventability was a within-subjects factor. This analysis found a significant main effect for preventability, $F(1, 585) = 285.84$, $p < .001$, $\eta_p^2 = .328$. This shows that people updated their blame judgments more after learning unpreventable reasons than after learning preventable reasons. There was not a significant main effect for sample, $F(1, 585) = 1.80$, $p = .18$, $\eta_p^2 = .003$. Therefore, the student sample did not update their blame more than the online sample. There was not a main effect for need for closure denoting that need for closure was not related to blame updating, $F(1, 585) = 2.29$, $p = .13$, $\eta_p^2 = .004$. There was not a significant interaction between preventability and sample, $F(1, 585) = 0.00$, $p = .99$, $\eta_p^2 = .000$. Most importantly to hypothesis 8, there was not a preventability x need for closure interaction, $F(1, 585) = 0.00$, $p = .996$, $\eta_p^2 < .001$ (see Figure 7). This does not support my hypothesis because the relationship between need for closure and blame change scores did not differ for preventable and unpreventable reasons.

Figure 7

Relationship Between Need for Closure and Blame Updating for Preventable and Unpreventable Reasons



Discussion

The current study sought to examine the relationship between need for cognition, need for closure, and blame updating. The underlying assumption of this study was that blame can be flexible to a degree, but will be related to certain individual traits. Although there were some relationships between individual difference measures and blame updating (which I elaborate on below), overall, it seems that need for cognition and need for closure are very weakly related to how much individuals update their judgments of blame.

Summary

The results of this study demonstrated that individual differences in need for cognition and need for closure are related to some aspects of how people make and update moral judgments of blame. For example, need for cognition significantly predicted participants' blame updating following good and bad reasons. However, need for cognition was not significantly related to blame updating for intentional and unintentional reasons or preventable and unpreventable reasons. Because one subset of the scenarios found a significant relationship and two did not, the overall results showed no significant relationship between need for cognition and blame updating.

Other analyses also found slightly more complicated relationships between the two individual difference measures and blame updating. Specifically, though not consistent with my predictions, there was an interaction between need for cognition (H_5) and blame updating for intentional and unintentional reasons. Further, though again not consistent with my predictions, there was an interaction between need for closure (H_6) and blame updating for intentional and unintentional reasons. These interactions were not in the direction that I predicted. Specifically, I predicted that there would be a weak positive relationship between need for cognition and blame updating for intentional scenarios, but a strong positive relationship between need for cognition and blame updating for unintentional reasons (H_5,). However, in actuality the findings suggest a strong positive relationship between need for cognition and intentionality whereas, there was no relationship between need for cognition and unintentional blame updating.

Similarly, I predicted that there would be a weak negative relationship between need for closure and blame updating for intentional scenarios, but a strong negative relationship between need for closure and blame updating for unintentional reasons (H_6). However, the findings suggest that there was a strong negative relationship between need for closure and updating after

learning intentional information, and no relationship between need for closure and blame updating after learning unintentional information.

In contrast, several of the predicted effects did not emerge. For instance, there was no positive relationship between participants' need for cognition and amount of blame updating (H_1). There was no positive relationship between participants' need for closure scores and amount of blame updating (H_2). There was no interaction between need for cognition and valence (morally good vs morally bad reasons) for blame updating (H_3). There was no interaction between need for closure and valence (morally good vs morally bad reasons) for blame updating (H_4). There was no interaction between need for cognition and preventability (preventable vs unpreventable reasons) for blame updating (H_7). There was no interaction between need for closure and preventability (preventable vs unpreventable reasons) for blame updating (H_8).

Explanations

For six of the eight hypotheses in this study need for cognition and need for closure were not related to blame updating. Only blame updating for intentional and unintentional reasons demonstrated a relationship, and this relationship was not in the predicted direction. It is possible that need for cognition and need for closure are simply not related to how individuals update their judgments of blame. Even the analyses that found an interaction had small effect sizes, and that means that there is a very limited amount of variance accounted for by need for cognition and need for closure.

However, another possibility emerges. The vignettes used in this study were taken directly from the studies by Monroe and Malle (2019). These vignettes were very simplistic. An offense is committed, the participant decides how much they blame the actor for the offense, and

then the participant is presented with contextual information about the offense and has an opportunity, but not the requirement, to update their blame. This is a very clean and simple procedure, but the vignettes may not accurately represent how everyday events in real life unfold. Important information crucial for making blame judgments may be hidden from plain view and require individuals to do an intensive search for the truth. This would not only occur in written form, but in auditory, and visual information as well. People may hear about an event or see an event unfold, and then must discern for themselves what occurred. There is also the potential for individuals to receive conflicting information, such as in a court case, events reported on by news outlets, and gossip.

The judgments made in this study were very simplistic, and the information presented to participants in this study was also very simplistic. Individuals may make real world blame judgments by balancing various pieces of evidence and weighing their importance in different ways. Similarly, blaming an individual that one has a personal relationship with may lead to different outcomes than blaming strangers for an event. Witnessing events first hand vs hearing about or reading about events second hand may also matter. Such variability in the way an individual may obtain and discern information in the real world denotes a level of complexity that was not preset in my study. The premise is that when people only need to evaluate a limited amount of information, it is very easy for virtually all people (regardless of their level of need for cognition) to carefully evaluate all available information and use that information when updating their blame judgments. However, in real-world situations where there is a lot of information that is often more complicated, perhaps there would be differences between high and low need for cognition individuals. Presumably, those individuals high in need for cognition would carefully parse through the information while individuals low in need for cognition would only focus on

the surface details. If this were to be the case, then high and low need for cognition individuals would update their moral judgments of blame differently.

It is possible that traits like need for cognition can fend off biases such as seen by D'Agostino and Fincher-Kiefer (1992). Need for cognition and need for closure may play a part in a type of cognitive evidence hunt. Kunda (1990) posited that individuals are motivated to be accurate in their judgments; a sentiment that is repeated by Monroe and Malle (2019). Indeed, Sargent (2004) demonstrated how need for cognition is related to individuals attributing others' behaviors to outside influences which is a search for evidence and answers, and seemingly an attempt at more accurate conclusions. Similarly, Dolinski et al. (2016) demonstrated a sort of evidence hunt for need for closure, where individuals either accept a headline or read further for details. For those individuals who read the article further there is a motivation to be accurate in their information gathering. It is probable that simplistic vignettes do not allow for the consideration of outside influences, or a cognitively engaging hunt past a few sentences to get at the nuance of a situation. Therefore, it is plausible that in more complex scenarios these differences may be better able to reveal themselves as a factor in moral decision making.

Implications

Overall, this study serves as a continuation of the research conducted by Monroe and Malle (2019). The implications of this research are that individuals both in a student sample and online sample readily update their judgments of blame based upon new information for simplistic blame updating vignettes. Need for cognition and need for closure moderate this updating somewhat, but only for intentional and unintentional blame updating scenarios. However, for the majority of scenarios (good, bad, preventable, unpreventable) it does not

appear that high in need for cognition and low in need for closure individuals update more than people who are low in need for cognition and high in need for closure.

It is quite possible that the discrepancy between the two significant interactions in hypothesis five and six for intentional and unintentional scenarios are merely flukes in the data. It could be argued that the data from just one study and six vignettes is inconclusive, but one thing is clear, and that is for very simple vignettes, need for cognition and need for closure do not seem to be related to blame updating.

Limitations

There are several notable limitations to this study. Namely, the simplicity of the vignettes and the absolute certainty that participants may have about the incident in question. The vignettes used in this study were simplistic and the events within each scenario were known with absolute certainty. Participants were told explicitly told that "Ted hit a man with his car." Participants knew for sure that Ted actually hit a man with his car. Participants were then told information that in real life would be difficult to know with any absolute certainty. For example, some participants learned that "Ted intentionally hit a man with his car because he was in a hurry and did not feel like waiting on the man to cross the street." In this example the participants were told Ted's true motives. In a real-world situation, people often do not know, with certainty, other people's motives. Presumably, the situations that individuals may face in daily life are revealed in a variety of different ways such as over time, and by conflicting accounts of what happened. Other factors such as where or whom the information is being acquired from may also influence how a participant views the accuracy of the information. As noted earlier, need for cognition and need for closure might only be related to blame updating when information is complex and ambiguous.

Second, accounting for the small effect sizes seen in the intentional and unintentional scenarios it is possible that other factors influence blame updating more than these two individual differences. Small effect sizes make a difference over time, population size, and large numbers of blame judgments. However, there may be more noticeable variables that can account for a greater proportion of the variance in blame updating as demonstrated by the many significant main effects present throughout the study.

This study merely focused upon blame updating and not the directionality of blame. A more complete picture of blame updating may involve the directionality of blame judgments. There is also a need to further examine the differences between blame judgments for intentional and unintentional offenses. To gather further evidence on whether the significant findings in this study were merely coincidental or in actuality, replicable findings.

Future Directions

Further research in the area of blame updating should stray from using the scenarios created by Monroe and Malle (2019). Although, blame updating seemingly occurs with these scenarios further verification of this phenomenon should be closely examined using different vignettes. These vignettes should be more complex in nature, and it may be beneficial if the researcher(s) avoid using language describing the intentionality, moral goodness, or preventability of a situation. Instead, if participants naturally make blame judgments based upon these criteria one would expect similar updating patterns. Further, differences in participants need for cognition and need for closure may emerge when more complex vignettes are utilized.

For instance, imagine the scenario where Ted hits a man with his car. The participants could read the description from a third person perspective to decide for themselves what happened. The description would include relevant information, but perhaps would also contain

some uncertainty (e.g., "I was leaving work when I saw a car hit a pedestrian. I'm not 100% sure, but the man sure looked like my coworker Ted. I overheard the cops saying that the car was registered to someone named Ted, so it seems likely that Ted was driving the car."). After receiving the initial information, participants would be asked how much they blame Ted for hitting the pedestrian. Then more information—some relevant and some irrelevant—would be given about the situation. For example, the participants could read exacerbating information (e.g., "Before he left work, Ted told me he was running late for his kid's soccer game and he seemed like he was in a hurry to leave") or mitigating information (e.g., "When I went to see the accident, I noticed brake fluid was leaking from the car; I wonder if the brakes went out on Ted's car?"). After receiving the additional information, people would, again, be asked how much they blame Ted for the accident. Using more complex and ambiguous examples of the scenarios used by Monroe and Malle (2019) might give the participants freedom and flexibility to decide for themselves how they should update their blame judgments. These scenarios would be better representations of the complex nature of more judgments in the real world.

Conclusions

Overall, it seems that the basic tenets of the SRM are intact. For simplistic judgments the evidence suggests that individuals are flexible enough to update their blame judgments. The motivated blame model is a model of cognitive bias where individuals form judgments first and then rationalize their blame second. The truth is that the motivated blame model is a bit extreme. Individuals reserve the right to change their minds about previous judgments. Monroe and Malle (2019) as well as the current study demonstrate quite clearly that individuals freely update their previous judgments of blame based upon new information. Where this study differs from the SRM is in terms of individual differences subtly biasing decisions for intentional and

unintentional reasons. The effects are small, but present. This demonstrates that even in the most basic of moral judgments (i.e. simplistic vignettes) certain individual differences can still be related to how individuals update their blame judgments.

The findings of my study are important because the debate in morality about making moral judgments of blame seems extreme to a comical degree. The motivated model of blame is most off base suggesting little cognitive flexibility. The SRM in its current iteration is perhaps too cognitively focused. As this study demonstrates people do relatively freely update their blame judgments based upon new information. However, in terms of intentional and unintentional scenarios individual differences may bias the amount that these judgments may be updated. This suggests a highly flexible process, that has small hints of rigidity. Future research may wish to consider a larger frame of reference. Taking blame into the real world, observing blame in real situations, and how social implications affect the blaming process.

In conclusion, there are two leading theories on how individuals form blame judgments the Socially Regulated Model of Blame (SRM), and the Motivated Blame Model (MB). The current study found support for the SRM in that individuals will freely update their moral judgments of blame based upon new information. When the information is valanced by intentionality individual differences such as need for cognition and need for closure influence how much individuals update their initial judgments of blame. However, more research is needed into how blame judgments are affected by individual differences when the evidence is presented with more complexity and ambiguity. Taken together, this study demonstrates that the individual differences need for cognition and need for closure generally do not moderate how much individuals will update their initial blame judgments.

References

Alicke, M. D. (1992). Culpable causation. *Journal of Personality and Social Psychology*, *63,* 368–378. doi:10.1037/0022-3514.63.3.368

Alicke, M. D. (2000). Culpable control and the psychology of blame. *Psychological Bulletin*, *126,* 556–574. doi:10.1037/0033-2909.126.4.556

Alicke, M. D. (2014). Evaluating blame hypotheses. *Psychological Inquiry, 25,* 187–192. doi: 10.1080/1047840X.2014.902723

Alicke, M. D., & Davis, T. L. (1989). The role of *a posteriori* victim information in judgments of blame and sanction. *Journal of Experimental Social Psychology*, *25*, 362–377. doi:10.1016/0022-1031(89)90028-0

Alicke, M. D., Rose, D., & Bloom, D. (2011). Causation, norm violation and culpable control. *The Journal of Philosophy, 108,* 670–696. doi:10.5840/jphil20111081238

Alicke, M. D., Weigold, M. F., & Rogers, S. L. (1990). Inferring intentions and responsibility from motives and outcomes: Evidential and extra-evidential judgments. *Social Cognition*, *8*, 286–304.

Ames, D. L., & Fiske, S. T. (2013). Intentional harms are worse, even when they're not. *Psychological Science*, *24,* 1755-1762. doi:10.1177/0956797613480507

Ames, D., & Fiske, S. T. (2014). A potential path to integration of blame judgments. *Psychological Inquiry, 25*, 193–196. doi:10.1080/1047840X.2014.90272

Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, *42,* 116–131. doi:10.1037/0022-3514.42.1.116

Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48,* 306–307. doi:10.1207/s15327752jpa480313

Chernyak, N., & Sobel, D. M. (2016). "But he didn't mean to do it": Preschoolers correct punishments imposed on accidental transgressors. *Cognitive Development*, *39,* 13–20. doi:10.1016/j.cogdev.2016.03.002

Coates, D. J., & Tognazzini, N. A. (2012). The contours of blame. In D. J. Coates & N. A. Tognazzini (Eds.), *Blame: Its nature and norms* (pp. 3–26). New York, NY: Oxford University Press. doi:10.1093/acprof:oso/9780199860821.003.0001

Crowson, H. M. (2013). Revisiting the factorial validity of the 15-item need for closure scale. *Individual Differences Research*, *11,* 133-138. doi:2014-03581-001

Cushman, F. (2008). Crime and punishment: Distinguishing the roles of causal and intentional analyses in moral judgment. *Cognition, 108,* 353–380. doi:10.1016/j.cognition.2008.03.006

D'Agostino, P. R., & Fincher-Kiefer, R. (1992). Need for cognition and the correspondence bias. *Social Cognition*, *10*, 151–163. doi:10.1521/soco.1992.10.2.151

Ditto, P. H., & Lopez, D. F. (1992). Motivated skepticism: Use of differential decision criteria for preferred and nonpreferred conclusions. *Journal of Personality and Social Psychology, 63,* 568 –584. doi:10.1037/0022-3514.63.4.568

Dolinski, D., Dolinska, B., & Bar-Tal, Y. (2016). Need for closure moderates the break in the message effect. *Frontiers in Psychology, 7*. doi:10.3389/fpsyg.2016.01879

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41,* 1149-1160.

Fehr, E., & Fischbacher, U. (2004). Third-party punishment and social norms. *Evolution and Human Behavior*, *25*, 63–87. doi:10.1016/S1090-5138(04)00005-4

Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. *Nature*, *415*, 137–140. doi:10.1038/415137a

Giacomantonio, M., Pierro, A., Baldner, C., & Kruglanski, A. (2017). Need for closure, torture, and punishment motivations: The mediating role of moral foundations. *Social Psychology*, *48*, 335–347. doi:10.1027/1864-9335/a000321

Gollwitzer, M., Braun, J., Funk, F., & Süssenbach, P. (2016). People as intuitive retaliators: Spontaneous and deliberate reactions to observed retaliation. *Social Psychological and Personality Science, 7,* 521–529. doi:10.1177/1948550616644300

Gray, K., Young, L., & Waytz, A. (2012). Mind perception is the essence of morality. *Psychological Inquiry*, *23,* 101–124. doi:10.1080/ 1047840X.2012.651387

Guala, F. (2012). Reciprocity: Weak or strong? What punishment experiments do (and do not) demonstrate. *Behavioral and Brain Sciences, 35,* 1–15. doi:10.1017/S0140525X11000069

Haidt, J. (2001). The emotional dog and its rational tail: A social intuitionist approach to moral judgment. *Psychological Review*, *108,* 814–834. doi:10.1037/0033-295X.108.4.814

Kenhove, P., Vermeir, I., & Verniers, S. (2001). An empirical investigation of the relationships between ethical beliefs, ethical ideology, political preference and need for closure. *Journal of Business Ethics, 32*, 347-361. doi:10.1023/A:1010720908680

Kruglanski, A. W. (1990). Motivations for judging and knowing: Implications for causal attribution. In E. T. Higgins & R. M. Sorrentinio (Eds.), *The handbook of motivation and cognition: Foundation of social behavior* (Vol. 2, pp. 333–368). New York: NY, Guilford Press.

Lagnado, D. A., & Channon, S. (2008). Judgments of cause and blame: The effects of intentionality and foreseeability. *Cognition*, *108*(3), 754–770. doi:10.1016/j.cognition.2008.06.009

Malle, B. F., Guglielmo, S., & Monroe, A. E. (2014). A theory of blame. *Psychological Inquiry, 25,* 147–186. doi:10.1080/1047840X.2014.877340

MacCoun, R. J. (2005). Voice, control, and belonging: The double-edged sword of procedural fairness. *Annual Review of Law and Social Science, 1,* 171–201. doi:10.1146/annurev.lawsocsci.1.041604.115958

Mazzocco, P. J., Alicke, M. D., & Davis, T. L. (2004). On the robustness of outcome bias: No constraint by prior culpability. *Basic and Applied Social Psychology*, *26*, 131–146. doi:10.1080/01973533.2004.9646401

McNulty, J. K., & Russell, V. M. (2010). When "negative" behaviors are positive: A contextual analysis of the long-term effects of problem-solving behaviors on changes in relationship satisfaction. *Journal of Personality and Social Psychology, 98*, 587–604. doi:10.1037/a0017479

Miller, D. T. (2001). Disrespect and the experience of injustice. *Annual Review of Psychology, 52,* 527–553. doi:10.1146/annurev.psych.52.1.527

Monroe, A. E., & Malle, B. F. (2017). Two paths to blame: Intentionality directs moral information processing along two distinct tracks. *Journal of Experimental Psychology: General*, *146,* 123-133. doi:10.1037/xge0000234.supp

Monroe, A. E., & Malle, B. F. (2019). People systematically update moral judgments of blame. *Journal of Personality and Social Psychology, 116,* 215-236. doi:10.1037/pspa0000137.supp

Nair, K. U., & Ramnarayan, S. (2000). Individual differences in need for cognition and complex problem solving. *Journal of Research in Personality*, *34*, 305–328. doi:10.1006/jrpe.1999.2274

Przepiorka, W., & Berger, J. (2016). The sanctioning dilemma: A quasi-experiment on social norm enforcement in the train. *European Sociological Review, 32,* 439 – 451. doi:10.1093/esr/jcw014

Reeder, G. D., & Coovert, M. D. (1986). Revising an impression of morality. *Social Cognition, 4,* 1–17. doi:10.1521/soco.1986.4.1.1

Roets, A., & Van Hiel, A. (2011). Item selection and validation of a brief, 15-item version of the Need for Closure Scale. *Personality and Individual Differences, 50,* 90–94. doi:10.1016/j.paid.2010.09.004

Sargent, M. (2004). Less thought, more punishment: Need for cognition predicts support for punitive responses to crime. *Personality and Social Psychology Bulletin, 30,* 1485–1493. doi:10.1177/0146167204264481

Shaver, K. G. (1985). The attribution of blame: Causality, responsibility, and blameworthiness. New York, NY: Springer-Verlag. doi:10.1007/978-1-4612-5094-4

Tetlock, P. E., Visser, P. S., Singh, R., Polifroni, M., Scott, A., Elson, S. B., . . . Rescober, P. (2007). People as intuitive prosecutors: The impact of social-control goals on attributions of responsibility. *Journal of Experimental Social Psychology, 43,* 195–209. doi:10.1016/j.jesp .2006.02.009

Turnbull, C. M. (1961). *The forest people*. New York, NY: Simon and Schuster.

Wiech, K., Kahane, G., Shackel, N., Farias, M., Savulescu, J., & Tracey, I. (2013). Cold or calculating? Reduced activity in the subgenual cingulate cortex reflects decreased emotional aversion to harming in counterintuitive utilitarian judgment. *Cognition, 126,* 364–372. doi:10.1016/j.cognition.2012.11.

Young, L., & Saxe, R. (2009). Innocent intentions: A correlation between forgiveness for accidental harm and neural activity. *Neuropsychologia, 47,* 2065–2072. doi:10.1016/j.neuropsychologia.2009.03.020

Appendix A

Need for Cognition Short Form Revised 18-Item Scale

For each of the statements below, please indicate to what extent the statement is characteristic of you.

If the statement is extremely uncharacteristic of you (not at all like you) please write a "1" to the right of the question; if the statement is extremely characteristic of you (very much like you) please write a "5" next to the question.

Of course, a statement may be neither extremely uncharacteristic nor extremely characteristic of you; if so, please use the number in the middle of the scale that describes the best fit.

Please keep the following scale in mind as you rate each of the statements below:

1 = extremely uncharacteristic; 2 = somewhat uncharacteristic; 3 = uncertain;
4 = somewhat characteristic; 5 = extremely characteristic.

1. I would prefer complex to simple problems.	
2. I like to have the responsibility of handling a situation that requires a lot of thinking.	
3. Thinking is not my idea of fun.*	
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*	
5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.*	
6. I find satisfaction in deliberating hard and for long hours.	
7. I only think as hard as I have to.*	
8. I prefer to think about small, daily projects to long-term ones.*	

9. I like tasks that require little thought once I've learned them.*	
10. The idea of relying on thought to make my way to the top appeals to me.	
11. I really enjoy a task that involves coming up with new solutions to problems.	
12. Learning new ways to think doesn't excite me very much.*	
13. I prefer my life to be filled with puzzles that I must solve.	
14. The notion of thinking abstractly is appealing to me.	
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.	
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*	
17. It's enough for me that something gets the job done; I don't care how or why it works.*	
18. I usually end up deliberating about issues even when they do not affect me personally.	

Appendix B

The Brief 15-Item Need for Closure Scale

INSTRUCTIONS: Read each of the following statements and decide how much you agree with each according to your beliefs and experiences. Please respond according to the following scale.

1 (completely disagree) to 5 (completely agree)

1 I don't like situations that are uncertain.

2 I dislike questions which could be answered in many different ways.

3 I find that a well ordered life with regular hours suits my temperament.

4 I feel uncomfortable when I don't understand the reason why an event occurred in my life.

5 I feel irritated when one person disagrees with what everyone else in a group believes.

6 I don't like to go into a situation without knowing what I can expect from it.

7 When I have made a decision, I feel relieved.

8 When I am confronted with a problem, I'm dying to reach a solution very quickly.

9 I would quickly become impatient and irritated if I would not find a solution to a problem immediately.

10 I don't like to be with people who are capable of unexpected actions.

11 I dislike it when a person's statement could mean many different things.

12 I find that establishing a consistent routine enables me to enjoy life more.

13 I enjoy having a clear and structured mode of life.

14 I do not usually consult many different opinions before forming my own view.

15 I dislike unpredictable situations.

Vita

Andrew McIver Taylor grew up in Faison, North Carolina, a small town on the coastal plain. Andrew is the son of Margaret Eaddy Taylor and Donnell Winders Taylor. He attended North Duplin Jr/Sr High School. After his high school graduation, Andrew received a B.S. in Psychology from the University of Mount Olive in May of 2019. Andrew then enrolled in Appalachian State University for the Fall semester of 2019 in pursuit of an M.A. in Experimental Psychology. He was awarded his M.A. in August of 2022.