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**The Detrimental Effect of Hindsight, Culpable Causation, and Gender Biases on Jury
Decisions in Secondary Liability Cases**

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Abstract

Recent jury trials in the United States have tested the public's willingness to hold parents criminally responsible for their children's actions in mass shootings. However, due to the legal requirements of negligence, assigning secondary liability in such cases may be influenced by cognitive and social biases, potentially compromising fair decision-making. This study examines how hindsight bias, culpable causation bias, and gender bias affect jury decisions in secondary liability cases. Across three experiments, we manipulated factors that could elicit these biases. Experiment 1 tested the role of hindsight bias, predicting that jurors informed of a crime's outcome would perceive it as more foreseeable and less able to accurately determine negligence. Experiment 2 examined culpability bias, hypothesising that—due to the stigma of illegal behaviour—a drug dealer who owns a gun would be judged more harshly than a hunter who owns a gun for the same negligent behaviour. Experiment 3 investigated gender bias, predicting that mothers—especially those violating caregiving and feminine norms—would be judged more harshly than fathers for the same negligent actions. Results revealed that hindsight bias influenced probability estimates as predicted but did not affect perceptions of negligence and culpability (Experiment 1). Consistent with predictions, however, participants assigned harsher punishments to defendants in stigmatised professions and to mothers who engaged in socially disapproved behaviours. These findings highlight the potential for bias in jury decision-making and underscore the need for legal safeguards to ensure more equitable outcomes in secondary liability cases.

The Detrimental Effect of Hindsight, Culpable Causation, and Gender Biases on Jury Decisions in Secondary Liability Cases

Twice in the past year, U.S.-based prosecutors have sought criminal convictions for parents of children who commit mass shootings (McKay, 2024). In early 2024, James and Jennifer Crumbley were found guilty of negligent homicide after their son, Ethan, shot and killed four classmates using a family handgun. Prosecutors alleged that the Crumbleys had been negligent when buying and storing the firearm in their home. Following this, in September 2024, Colt Gray attempted a mass shooting at Apalachee High School. A few days later, prosecutors charged his father, Colin, with second-degree felony murder and involuntary manslaughter. Both prosecutions relied on a legal theory called secondary liability, where someone is held responsible in court for a violation—even though they did not directly break the law—because they are connected to the person who did (Fischel, 1981). These jury trials were the first tests of public opinion regarding the use of secondary liability to hold parents criminally responsible for their children’s actions (Ortiz, 2024). Some have argued that it is unreasonable to blame parents for their juvenile’s actions, but others have argued that it is correct and reasonable to assign blame to the parents for what could have been an avoidable tragedy (Yang, 2024).

From a psychological standpoint, the application of secondary liability may also present a challenge to a juror’s ability to come to a fair and just decision. Specifically, the application of secondary liability to parents of children who kill may introduce a number of psychological biases: systematic deviations from rational thinking, where people make decisions or form beliefs influenced by emotions, past experiences, or cognitive shortcuts, which can lead to errors in judgment (Tversky & Kahneman, 1974). Jury biases have continually contributed to gender and cultural disparities in sentencing over time (Mustard, 2001). Three biases—hindsight bias,

culpable causation, and gender bias—may be at particular risk of affecting jury decisions in these types of cases.

First, the hindsight bias—the tendency to overestimate the likelihood of an event happening after knowing the outcome—has been shown to influence many legal decisions, like secondary liability, that require a determination of negligence (Roese & Voehs, 2012). Legally, determining negligence requires that a harm occurs and that harm be reasonably foreseeable (Keeton et al., 1984). However, determinations of what is reasonably foreseeable occur in hindsight after the harm has occurred. For instance, after the Hillsborough Disaster in 1989, where 96 people died due to overcrowding at a football match, police officers and stadium officials were blamed for not foreseeing the tragedy. However, this blame came after the incident occurred, which likely made the tragedy seem obvious, leading to distorted judgments of foreseeability and responsibility. The effect of hindsight bias resulted in exaggerated perceptions of how foreseeable the risks were at the time (Williams, 1992).

The second bias which may affect secondary liability cases is culpable causation, which occurs when blameworthy or socially undesirable actions appear more causal in leading to a harmful outcome. For example, if someone slipped on a puddle in a store and broke their hip, the law would judge the store owner negligent because the store owner's inaction caused foreseeable harm. Legally, it does not matter why the water is on the floor, regardless if the water was intentionally spilt as a prank or if it came from a leaky pipe. Psychologically, however, people tend to find the store manager more causally responsible in the former rather than the latter (Harley, 2007). Even though the store manager was negligent in both cases, the reason the puddle was there affects how much blame the store gets for the accident. This can affect court decisions as a defendant's previous convictions or undesirable behaviour before a harmful event

may lead a jury to view them as more responsible for the harm, even if those actions were not a necessary component of the causal chain that led to harm (Simester & Sullivan, 2016, Williams, 1961).

Lastly is gender bias, which is the tendency to judge genders consistent with stereotypes. Although research indicates that juries tend to be lenient to women in court (Gathings & Parrotta, 2013), secondary liability cases against mothers may bias the jury to be more punitive to women, who are more likely to be stereotyped as the primary caregiver (Hochschild, 2012). All three biases are likely to lead to unjust jury decisions in cases involving secondary liability for the actions of a child. We explain each in turn.

Hindsight Bias

Hindsight bias can impair judgment when determining responsibility in court decisions. It refers to a phenomenon where people overestimate the likelihood of an event occurring after knowing it did occur. It leads people to view past events as more predictable than they actually were in foresight. A typical example of this phenomenon is the saying, 'Hindsight is 20/20.' This idiom refers to the idea that, although an outcome may seem obvious in hindsight, this is simply due to the privileged position of looking backwards. At the time, and to the people in the situation, it was not as clear what the outcome would be. In hindsight, it is easier to trace the events and pinpoint what happened and why, making past events seem inevitable (Fischhoff, 1975). Tracing back events that may have influenced an outcome can lead to misinterpretation and the tendency to perceive outcomes as unavoidable, a phenomenon known as 'creeping determinism' (MacKay & McKiernan, 2004).

In one foundational study of hindsight bias, participants were presented with medical case scenarios that included symptoms, medical history, and test results and were asked to

predict the correct diagnosis (Fischhoff et al., 1978). After being told the actual diagnosis, they were asked to recall and rate their confidence in their initial predictions. The study found that participants tended to misremember their original predictions as being more accurate than they actually were, demonstrating hindsight bias. This suggests that knowing the outcome not only increased their confidence but also distorted their memory of their initial judgment, making them believe they had been more certain or correct than they truly were.

Researchers have suggested that cognitive processes, like immediate processing, could explain how we interpret both the possible causes of an outcome and the outcome itself (Fischhoff et al., 1978). During this process, the brain uses ‘mental shortcuts’ or heuristics, which help us quickly make sense of complex information. These shortcuts allow us to simplify and combine pieces of information from various sources—such as past experiences and emotions—into a cohesive story or explanation (Fischhoff et al., 1978). While this process can be efficient, it can sometimes lead to conclusions that seem logical on the surface but are actually influenced by biases. For example, when people look back on an event, the human tendency for sense-making may fill in gaps and create a narrative that makes the outcome seem more predictable or inevitable than it actually was, even if the original information did not necessarily lead to that conclusion. Any information that could support the cause of an outcome will be automatically prioritised and remembered as crucial, making it harder to imagine how the series of events could have unfolded differently (Pohl, 2004). This is why people sometimes perceive events as having clear causes, even when reality might be much more complicated (Pohl, 2004).

The dangers of hindsight bias are evident in the legal system, as the law in many nations states that a defendant can only be evaluated based on what they could reasonably have known at the time of their actions (American Law Institute, 2010). Information obtained after an event is

considered irrelevant when assessing the quality of the decisions made by the defendant at that moment (Roese & Voehs, 2012). However, jurors are frequently presented with a negative outcome and asked to decide whether it was foreseeable or preventable, introducing the possibility of hindsight bias. One study demonstrates the effect of hindsight bias on jurors, showing that they are aware of the outcome yet are asked to ignore this information when assessing the defendant's negligence or liability (Harley, 2007). In this study, participants were asked to evaluate a hypothetical case where a woman slipped and fell on a wet floor in a shopping mall, and the mall manager failed to warn customers about the hazard. The experiment involved two conditions: one group knew the outcome (the fall) and made judgments with that knowledge (hindsight), while the other group made decisions without knowing the outcome (foresight). The study found that participants in the hindsight condition were more likely to judge the defendant's actions as foreseeable and assign greater blame than those in the foresight condition. This demonstrated the influence of hindsight bias on legal decision-making, as outcome knowledge skewed participants' perceptions of negligence.

Given these findings, researchers have also explored whether jurors can truly set aside outcome information when determining negligence or liability. Much of the research indicates that they cannot. For instance, one study examined how outcome information influenced punitive damage awards in civil cases (Hastie et al., 1999). The study involved two groups of participants: a foresight group and a hindsight group. They were asked to review information regarding a hazardous stretch of train tracks. One group was asked to decide whether the railroad should be allowed to operate (foresight condition); the other was asked whether it was negligent for operating following a crash (hindsight condition). All participants were otherwise given the same information regarding the potential causal factors for train accidents; the hindsight group also

received additional information that the train derailed, resulting in a toxic materials spill that damaged local wildlife. The results revealed that the hindsight group rated the accident as more foreseeable than the foresight group and believed that the railroad should be required to pay punitive damages. These results demonstrate how knowledge of the outcome can affect jurors' perceptions of whether the negative outcome was foreseeable (Hastie et al., 1999).

Similar to these other liability decisions, secondary liability cases involving school shootings may be particularly prone to hindsight bias. School shootings are low-probability, high-consequence events, which complicate the assessment of foreseeability. Although there may be signs that a child is at risk of violence, the event itself is so rare and unpredictable that it may not be foreseeable to an average person or even to the parents (Lei et al., 2024). As a result, courts often struggle to determine whether a parent could have reasonably predicted their child would engage in such a violent act. Due to creeping determinism, indicators of potential school shootings are difficult to recognise in foresight, but—due to creeping determinism—may seem obvious to a jury in hindsight (Peck, 1971).

Culpable Causation

Culpable causation is another potential risk to fair judgments in secondary liability cases. 'Culpable causation' is a bias where inappropriate or socially undesirable behaviours are judged to be more directly responsible for causing a harmful outcome compared to more appropriate behaviours. These behaviours can make an action appear more causally responsible—and therefore more blameworthy—for a harmful outcome (Simester & Sullivan, 2016). For example, as mentioned earlier, if someone slipped on a puddle in a store and broke their hip, culpable causality would predict that people would be more likely to find fault with the store if the water was intentionally spilt as a prank, compared to if it came from a leaky pipe. While the store

manager was legally negligent in not cleaning up the puddle in both cases, the cause of the puddle affects the level of blame the store receives for the accident.

Another example of this is demonstrated in a study where participants were presented with a hypothetical criminal case in which the defendant's actions prior to a harmful outcome were manipulated (Alicke, 1992). In this study, the harmful outcome was a car accident caused by speeding. The driver's motive for speeding was also manipulated; some participants were told that the driver was rushing home to hide an anniversary gift from his parents before they arrived, while others were told he was hiding a vial of cocaine. The results showed that participants were more likely to say the driver caused the accident when his motive was hiding cocaine rather than an anniversary gift. These findings highlight a broader tendency for people to perceive socially undesirable or immoral behaviours as more causally linked to harmful outcomes than socially desirable behaviours, even when both contribute equally to the outcome. This raises important questions about how moral character judgments influence causal attributions in legal decision-making.

One possibility is the 'stain criterion' theory, which suggests that when multiple individuals contribute equally to a harmful outcome, people are more likely to blame the one who is perceived as having the greatest 'stain'—often linked to moral wrongdoing or wrongful intent (Feinberg, 1970). Importantly, this does not necessarily reflect actual causation but rather a biased perception that assigns greater responsibility based on morality rather than the objective chain of events. While stain theory has traditionally been applied to scenarios involving multiple individuals, the mechanism likely applies when there is only one person involved but multiple potential causes. Rather than choosing whom to blame, it may be that an unrelated moral wrongdoing influences the perceived fault and, therefore, the severity of consequences assigned

to an individual. In other words, a morally ‘stained’ person might be unfairly judged as more responsible and receive harsher punishment.

This connects with Just World Theory, which proposes that people tend to view the world as fair, where individuals get what they deserve (Lerner, 1980). Because of this belief, people may retroactively assign greater blame to those they perceive as morally ‘bad’, assuming that their wrongdoing must have played a greater causal role in the harm. However, this is an illusion of causality—an instance where blame is shaped by moral judgments rather than by objective facts. For example, if two drivers are equally reckless but one was speeding to hide an anniversary gift while the other was speeding to hide drugs, people are more likely to blame the second driver—not necessarily because of the actual harm caused, but because of the moral stain associated with drug possession. This demonstrates how bias skews perceptions of causation, leading to unfair attributions of blame based on morality rather than evidence (Alicke, 1992). As a result, moral wrongdoing can disproportionately influence legal judgments, sometimes leading to biased outcomes. For instance, juries may award higher compensatory damages in cases involving wrongful acts, even when the actual harm caused is no greater than in less morally stained situations (Darley et al., 2000).

This bias runs contrary to the principle in the legal system that requires liability and compensation be based on the severity of harm rather than subjective moral judgments. In theory, this ensures that defendants are judged fairly, based on legal criteria rather than personal biases (American Law Institute, 2010). However, research suggests that people struggle to separate moral judgments from legal decision-making. For example, one study examined how participants determined appropriate punishments for a defendant across different scenarios (Carlsmith et al., 2002). In one condition, the defendant’s actions were framed as malicious (e.g.,

intentionally causing harm), while in another, the same harmful outcome was framed as accidental or less morally wrong. Despite the harm being identical, participants assigned significantly harsher punishments when they perceived the defendant's actions as morally objectionable. In other words, people tend to equate moral blameworthiness with legal culpability, even when the law requires them to focus solely on harm and intent. Humans have a natural tendency to see wrongdoing as deserving of punishment, which can lead jurors to impose harsher sentences based on moral outrage rather than legal standards.

This tendency may be particularly likely in cases of secondary liability, where causal culpability is already indirect or tenuous. Parents who fail to act on warning signs, such as a child's troubling behaviour, may not typically be seen as direct causes of harm (Simester & Sullivan, 2016). However, when jurors are presented with evidence of the parents' past misconduct or perceived moral failings, they may become more inclined to assign blame—even when those prior acts have little direct connection to the crime itself. Research suggests that extraneous negative information can bias jurors' perceptions of culpability, making them more likely to hold secondary parties responsible (Vidmar & Schuller, 1989). This phenomenon may have played a role in the Crumbley case, where details of the parents' actions were widely scrutinised. The release of information regarding their past decisions—such as the mother's absence due to an extramarital—may have led jurors and the public to reassess their culpability, even if those actions were not the direct cause of the shooting. In such cases, the concept of culpable causation becomes particularly relevant, as it may shape jurors' perceptions and lead them to assign responsibility to someone other than the child, particularly when they struggle to reconcile the idea of a minor as the primary agent of harm.

However, blaming secondary parties, like parents, can be problematic. It may lead to unfairly holding people responsible for events they did not directly cause (Bandura, 1999). Parents could be blamed for things beyond their control, like their child's mental health issues, peer pressure, or outside stress, which may not be linked to their actions (Cohen & Felson, 2006). This can create problems like over-criminalisation and social stigma, where parents are unfairly judged for things they could not control or did not know about (Feld, 1999). Additionally, focusing on culpable causality in these cases might distract from addressing the real causes of violent behaviour, such as mental health struggles, bullying, or wider social issues that contribute to violence in complex ways (Moffitt, 2006). It could lead to oversimplifying these situations and focusing on blame instead of addressing larger, underlying problems (Simester & Sullivan, 2016).

Gender Biases

A similar tendency to rely on simplified narratives can be seen in the influence of gender biases on legal decision-making. Gender stereotypes are implicit biases that have developed through societal expectations of gender roles (Heilman, 2012). They outline common differences between men and women, dictate how they should act, and what roles they should fulfil. Stereotypes develop from the regular observation and categorisation of individuals based on the expression of different traits and features of particular groups (Ellemers, 2018). They reflect general expectations of a social category of people, but do not necessarily apply to all members. A simple example of instances of fluidity between genders for particular traits is height. While men are generally taller than women, there are many individual cases where this is not the case, or where the difference is actually reversed (Ellemers, 2018). This pattern of variation leads to over-generalisation within groups and an exaggerated perception of differences between groups.

These gender stereotypes develop from a young age; children start to display gender-typical interests and behaviours from as young as two to three years old and begin to associate toys, clothes, occupations, and colours with one gender or the other (Berenbaum & Hines, 1992). They begin to behave in a way that society defines as appropriate for their gender based on explicit reinforcements such as their parents, teachers, and observations of others (Kollmayer et al., 2018).

The mental structures and categories formed by stereotypes strongly influence social judgments, often leading to over-generalisation and biased perceptions of social groups. Research in social psychology has demonstrated that stereotypes shape not only how we interpret others' behaviour but also how we interact with them. One way this occurs is through confirmation bias, where individuals selectively notice and remember information that aligns with their pre-existing beliefs, reinforcing biased perceptions (Chaxel, 2015). For example, if someone holds the stereotype that women are less competent leaders, they may focus on instances where female leaders make mistakes while overlooking their successes, further entrenching this biased belief (Eagly & Karau, 2002).

When making social judgments and decisions, some people rely on stereotypes as a mental shortcut. For example, when hiring an employee for a job or role that is traditionally male-dominated, such as a builder or plumber, a manager may be more likely to hire a male candidate over a female candidate due to gendered assumptions about job suitability, regardless of either candidate's actual experience or capabilities (Heilman, 2012). Like any mental shortcut, stereotypes tend to be used unless individuals are motivated to make a more accurate decision, such as when they have a personal stake in the outcome or are incentivised to prioritise accuracy

(Heilman, 2012). However, certain situational factors can make individuals more likely to rely on stereotypes.

Supporting the heuristic interpretation of stereotypes, research has shown that when people experience cognitive fatigue or time pressure, they are especially prone to stereotypical judgments (Bodenhausen, 1990). One study examined whether reliance on stereotypes varies depending on motivational factors, such as an individual's circadian rhythm and whether they reach their peak cognitive performance in the morning or afternoon (Bodenhausen, 1990). Participants read a description of either a male or female and were then asked to make judgments about the person's characteristics. The descriptions were designed to reflect common social stereotypes, allowing researchers to examine whether participants relied on these stereotypes in their evaluations. The results showed that people were more likely to rely on stereotypes when they were not at their peak mental state. Specifically, 'morning people' made stereotypical judgments more quickly when tested in the evening, while 'evening people' showed the same tendency when tested in the morning. The study suggests that when individuals are not at their optimal cognitive peak, they are more likely to use heuristic judgments, lacking the energy or motivation to engage in more thoughtful decision-making.

Of particular relevance to secondary liability cases for parents, gender roles in parenthood can also subtly influence perceptions of men and women in potentially biased ways. For instance, when women become mothers, they are often expected to prioritise caring for their child above all else, which can lead to assumptions that they are less committed or capable in their professional roles (Ellemers, 2018). In contrast, when men become fathers, their perceived work ethic and ability are not similarly affected, largely because of the stereotypical view that men are naturally more assertive and focused on their careers (Ellemers, 2018). The distribution

of men and women into homemaker and employee roles reinforces these stereotypical beliefs. According to the U.S. Department of Labor, labour-force participation rates reveal that only 51% of women hold employee roles compared to 77% of men, with women more frequently found in homemaker roles (Eagly, 1984).

These gender biases can influence jury decision-making in several ways. A common tendency is to be more punitive towards men and less towards women, based on the stereotype that women are soft and fragile while men are tough, strong, and aggressive (Carter, 2007). Indeed, the criminal justice system tends to be more lenient towards women in that they receive less harsh sentences and more favourable parole decisions (Gathings & Parrotta, 2013). Statistics reveal that females are 12 to 23 percent less likely than males to receive prison sentences. When they are sentenced, they serve an average of three years less than men (Fernando et al., 2006). This sentencing disparity occurs even when accounting for when men and women are charged as a pair. One study found that the gender gap exists within pairs of mixed-gender offenders who are convicted together, with men receiving an average of 38 days more in prison than women (Phillip, 2020).

One explanation for this leniency is Chivalry Theory. This theory asserts men see women as a childlike group needing care and protection and, therefore, not entirely responsible for their behaviours. This results in preferential treatment towards female offenders, particularly when the police officers or judges are male (Fernando et al., 2006). The theory also claims that all women—including the ‘bad’ ones—should be protected from the harm that the criminal justice system may bring them. This chivalrous behaviour is also directed towards mothers—termed familial paternalism—when judges act out of concern for protecting the family and children’s wellbeing by granting leniency towards the parents (Gathings & Parrotta, 2013). In one striking

case, Lori Drew created a fake Myspace profile, which led to the harassment and bullying of a young girl, Megan Meier. Posing as a teenage boy around Megan's age, Lori's actions contributed to Megan's tragic suicide. Despite the severity of the situation, the judge sentenced Drew to probation rather than prison, citing her lack of prior criminal history and the emotional impact the case had on her. This lenient sentence sparked widespread public debate, with critics arguing that Lori's gender and her perceived role as a mother and community member may have influenced the judge's decision (Garfield, 2022).

This phenomenon may reverse when women deviate from traditional gender norms of being soft and gentle, instead displaying behaviours perceived as inconsistent with their gender role (Eagly & Karau, 2002). Research suggests that female defendants may receive harsher sentences when their behaviour challenges these expectations, especially in cases where juries contain a high proportion of female jurors or when the judge is female (Steffensmeier & Demuth, 2006). Some studies indicate that women may be particularly punitive toward other women who violate gender norms, as they may feel the need to reinforce traditional expectations (Daly & Bordt, 1995). Social Identity Theory provides a framework for understanding this pattern, suggesting that group members engage in in-group policing to maintain the integrity of their social category (Tajfel & Turner, 1979). When individuals violate group norms, they may be treated more harshly as a form of social regulation. This reaction is referred to as the Black Sheep Effect, where members of a group judge norm-violating in-group members more severely than out-group members (Marques et al., 1988). Empirical research supports this claim. A study on defendant-juror similarities found that when strong evidence was presented against an in-group member, mock jurors judged them more harshly than out-group members (Kerr et al., 1995). This aligns with findings that suggest the gender gap in sentencing diminishes when a

female judge presides over a case, as the leniency typically afforded to female defendants is reduced due to the Black Sheep Effect (Mazzella & Feingold, 1994).

Given these findings, cases where parents are held liable for the actions of a child may be particularly at risk for biased sentencing of mothers compared to fathers. For one, women are often stereotypically viewed as the primary caregivers for children in the family, as caregiving is generally considered a feminised role (Connell, 2005). This social expectation of women may influence the assignment of blame in cases of secondary liability for a child's actions. Mothers may be held more accountable than fathers, as they may be seen as failing in their maternal duties to control or guide their child's behaviour or as having set a poor example. This unequal assignment of responsibility illustrates how gendered expectations shape perceptions of parental roles. Social norms further reinforce these expectations, influencing both how parental responsibility is perceived and how individuals are judged for their actions.

Conclusion

We conducted three separate experiments to explore the extent to which hindsight bias, culpable causality, and gender bias could negatively affect decision-making in secondary liability cases. In Experiments 1 and 2, we manipulated the negligent behaviour of a single parent—a father—whose son took a family gun and killed a classmate. We also manipulate the potential for biased decision-making through the hindsight bias (Experiment 1) and culpable causality (Experiment 2).

In Experiment 1, we predict that when participants are informed of the outcome (i.e., a school shooting), they will perceive that outcome as having a higher probability of occurring. In Experiment 2, we predict that the defendants described as drug dealers, as opposed to hunters, will be judged more harshly, even when equally negligent. In Experiment 2, we also suspect that

the bias will attenuate the negligence assessment. In other words, participants will be less likely to identify negligent behaviour in the presence of biasing factors.

In Experiment 3, we turn to gender bias. In this experiment, we manipulate the gender of the defendant in the secondary-liability case to be either a woman (the mother) or a man (the father). We also manipulate the *reason* that the defendant was negligent to be either morally laudable (taking an extra job) or morally blameworthy (having an affair). We predict that the parents' gender will affect their blameworthiness such that women are judged more harshly, especially when breaking social norms by having an affair.

Experiment 1

Method

Experiment 1 examined hindsight bias and its interaction with negligence when judging responsibility in a secondary liability case. In this experiment, we presented participants with a brief summary about a single father and his son, including the presence of a gun in the home. We varied the level of negligence of the individual by whether he locked the gun in its safe or left it unlocked. Additionally, we introduced the potential for hindsight bias by providing some participants with an extra paragraph revealing the outcome of the story (i.e., outcome information): that the son stole the gun and used it in a school shooting. Participants then answered a series of questions to assess their perceptions of the likelihood of various potential outcomes, the sentence length they believed the father deserved, and their perception of the father's level of responsibility to gauge an understanding of participants' attitudes towards secondary liability.

The key dependent variable for this study was foreseeability. Consistent with the hindsight bias, we hypothesised that when participants were provided with the outcome, the perceived probability of that outcome occurring would be higher compared to participants who were not given that outcome. We also anticipated the possibility that outcome information would weaken the assessment of negligence on foreseeability. Specifically, we predicted that without outcome information, the foreseeability would be higher when the gun was not secure, as opposed to when it was secured. Following this, we anticipated that when participants were given the outcome, the level of foreseeability would only be slightly, if not the same, when the gun is not secured, compared to when it is secured.

We also anticipated that the father's negligence would have an effect on severity of sentencing, where the father would receive a longer sentencing when the gun is not locked in a safe versus when it is.

Design

For this experiment, we used a 2 (hindsight bias: outcome vs. no outcome) \times 2 (negligence: gun secured vs. not secured) between-subjects design. We received ethics approval from the University of Waikato Human Research Ethics Committee (see Appendix A). The pre-registration can be located in Appendix B and at Open Science Framework

(<https://aspredicted.org/7rrx-dbf.pdf>)

Participants

We recruited participants using the participant recruitment website CloudResearch (*CloudResearch | Online Research & Participant Recruitment Made Easy*, 2024). All participants were from the United States. We aimed to recruit approximately 250 participants. This target was based on a sensitivity analysis indicating that, with 250 participants, we can

detect an effect (f^2) of 0.032 ($\alpha = .05$, $\beta = .10$). Effect sizes below this level would likely not be practically significant.

Out of 260 participants, 246 completed the experiment. However, we excluded one participant due to them not being able to describe what they did during the survey at the end during the attention check questions, leaving us with 245 for analysis. The mean age of the participants was 38.42 ($SD = 12.03$). Fifty-five percent of these participants identified as male, 40% as female, 2% as non-binary, and 0.8% preferred not to say. Sixty-six percent identified as White/Caucasian, 13% as Asian, 9% as Black/African American, 7% as Hispanic, 2% selected multiple, and 0.4% identified as Pacific Islander. Forty-five percent obtained a bachelor's degree, 18% attended college, 16% had a master's degree, 11% had completed high school or the equivalent of a GED, 8% had an associate degree, and 2% had a doctorate.

Materials

The main stimulus in this experiment was a vignette regarding a defendant, David Thompson, who is being charged with criminally negligent manslaughter after his son, Jake, kills a classmate at school. The story summarises several facts about David and his son Jake, including their home life, the father's career, the absence of Jake's mother, and Jake's aggressive behaviour at school. It also details gun ownership, specifically how the firearm was stored in the home and whether it was securely locked in a safe or left unsecured.

We created four versions of the case summary. In half the stories, the father locks his gun safe (not negligent); in half, he leaves it unlocked (negligent). We also manipulated whether participants were presented with an additional paragraph detailing the outcome. Specifically, that the son took his father's gun to school and shot a classmate. A full copy of these summaries can be found in Appendix C.

After reading one of the summaries, participants completed multiple questions designed to measure three variables: responsibility, foreseeability, and recommended sentencing. The full scales and questions are also in Appendix C. We briefly summarise each section here.

In the first section, we measured participants' perceptions of the father's *responsibility* for potential harm caused by the weapon. This section included only two statements, with an additional two-item stem for each. The first statement was 'David should bear some civil responsibility (that is, he should be found liable and have to pay damages) for any harm that results...', with two item stems 'a) When he uses the gun', and 'b) When anyone uses the gun.' The second statement followed the same format, except it asked the participants to give their opinion again on whether David should bear criminal responsibility instead of just civil responsibility. We asked participants to indicate how much they agreed or disagreed with the four statements using a 6-point Likert scale from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*).

Next, we measured the *foreseeability* of different outcomes. We presented a list of eight possible outcomes, most of which did not occur (e.g., 'Jake uses the gun to shoot a classmate at school'). One of the 'possible' outcomes was the outcome described to people in the outcome condition: 'Jake uses the gun to shoot a classmate at school.' This outcome came in the middle of the list of possible outcomes in order to reduce demand characteristics. We asked participants to rate the perceived likelihood of each outcome occurring on a 6-point Likert scale from 1 (*Extremely Unlikely*) to 6 (*Extremely Likely*).

In the final section, we assessed the level of *recommended sentence* for the father. We informed the participants in both conditions of the outcome and that the father had been charged with negligent homicide. We briefly defined negligent homicide and then asked participants to play the part of the trial judge. We told them that the jury had returned a guilty verdict and that

they must decide on a sentence ranging from a minimum of one year to a maximum of 25 years. The participants could indicate their recommendation on a slider scale from 1 to 25.

At the end of the survey, we offered participants the opportunity to express any thoughts or leave any comments. We also asked participants to fill out a few quality control questions to ensure they were paying attention. We asked them to indicate yes or no to questions such as ‘Did you speak with anyone at any time during the study?’ and ‘Did you pause or leave the study to engage in other tasks, even if they were other computer tasks?’ We also asked them to describe the study and what they did. The full list of post-survey attention-check questions can be found in Appendix C.

Procedure

Participants completed this survey online, hosted by Qualtrics (<https://www.qualtrics.com/>). First, participants were required to read an information sheet and provide their informed consent to continue. Quality control instructions then asked participants to complete the survey in a single session, in a quiet environment with minimal distractions, and without refreshing their web browser. Next, the participants filled out their demographic information before progressing on to reading the trial summary.

After the demographics, participants proceeded to the summaries. Before each summary, the participants were briefed on what they were reading and told that we were interested in the pros and cons of gun ownership. We then let them know that they needed to read carefully and that they would be asked some questions regarding what they had read following the summary. Participants could then continue to the summary. As we had four different versions of the summary, we assigned each one to be presented randomly.

Participants then completed the sections on gun responsibility, perceived foreseeability, and sentencing, followed by quality control questions. At the end, participants were debriefed and given a completion code to enter into cloud research, where they would then be compensated 1.25 USD for participating.

Results and Discussion

We analyse the results in three sections. First, we use a 2×2 factorial ANOVA to test the effect of outcome information on the foreseeability of the ‘school shooting’ outcome. Second, we used a one-way ANOVA to analyse the effect of negligence on sentencing decisions, independent of outcome information. Lastly, we use a repeated-measures 2×2 ANOVA to assess general support for secondary liability by analysing these results by defendant type (himself / someone else) and liability type (civil / criminal).

Probability Questions

The aim of our probability questions was to assess our hypothesis that when participants were provided with the outcome, the perceived probability of that outcome occurring would be higher compared to participants who were not given the outcome.

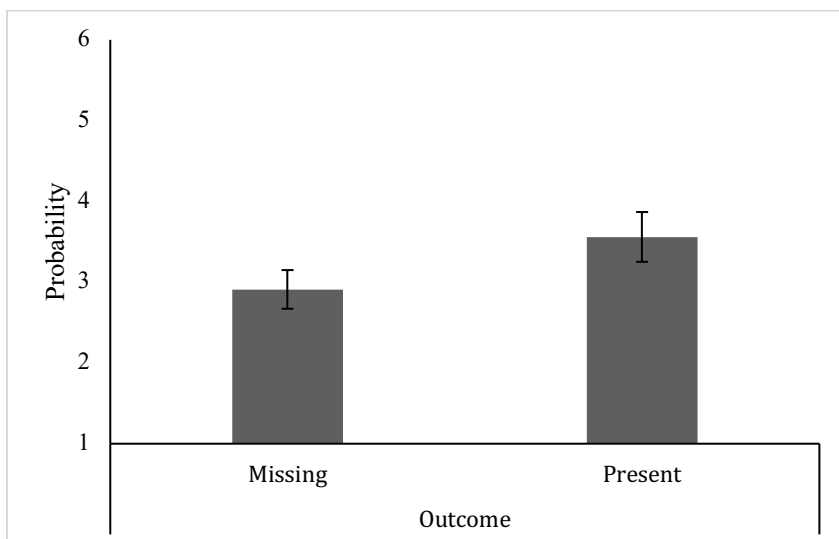
To analyse our probability questions, we ran a 2×2 factorial ANOVA with our outcome and negligence variables as a predictor of probability. Specifically, we will assess how the outcome information (outcome vs. no outcome) influences probability and test our hypotheses regarding hindsight bias. Additionally, we will evaluate how negligence in gun storage (locked vs. unlocked) further impacts these results. We chose to do our analysis on only question six, as it was specific to our scenario, asking participants to rate the probability that ‘Jake uses the gun to shoot a classmate at school’.

Our analysis revealed a significant main effect for our outcome variable, $F(1, 240) = 10.69, p = .001, \eta^2_p = .04$. Consistent with the hindsight bias, the overall mean probability score for our ‘No Outcome’ condition was lower ($M = 2.91, SD = 1.37$) than the overall mean probability score for our ‘Outcome Present’ condition ($M = 3.56, SD = 1.70$). These results support our hypothesis that when participants were provided with the outcome, they perceived the probability of that outcome occurring as higher (see Figure 1).

Our findings align with studies on hindsight bias, which consistently demonstrate that knowledge of an outcome inflates perceptions of its foreseeability (Roese & Vohs, 2012; Christensen-Szalanski & Willham, 1991; Wood, 1978). For example, participants evaluating a case of a woman slipping on a wet floor assigned greater blame when they knew the outcome, as they perceived the defendant’s actions as more foreseeable (Harley, 2007). Similarly, participants overestimated the accuracy of their initial medical predictions once they knew the actual diagnosis (Fischhoff et al., 1978).

Figure 1.

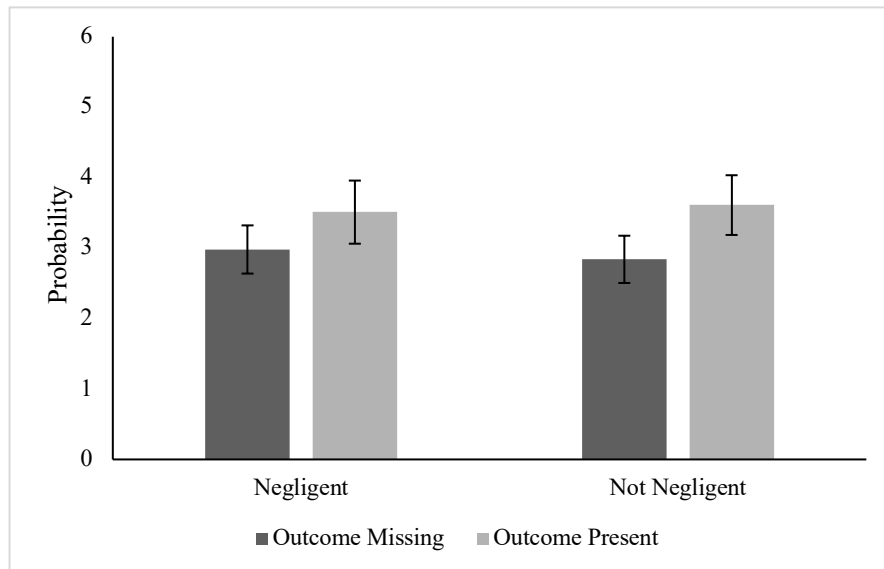
Mean probability scores for outcome vs. no outcome



The effect for our negligence variable was not significant, $F(1, 240) = 0.01, p = .917, \eta^2_p = .00$. The interaction between our negligence and outcome variables was also not significant, $F(1, 240) = 0.38, p = .537, \eta^2_p = .00$. However, planned comparisons revealed a significant difference between the no outcome/not negligent and outcome/not negligent conditions, $F(1, 240) = 7.55, p = .006, \eta^2_p = .03$. The mean difference between the no outcome/negligent and outcome/negligent conditions was not significant, $F(1, 240) = 3.51, p = .062, \eta^2_p = .01$. These results indicate that negligence did not have an influence on the level of foreseeability. However, our results do support our prediction that outcome information would weaken the assessment of negligence on foreseeability, as outcome information had a significant impact on the level of probability assigned, but only within the not negligent condition. When the defendant was described as negligent the effects of hindsight bias weakened (see Figure 2).

Figure 2.

Mean probability scores for both outcome and negligence variables.



Sentencing Questions

The aim of our sentencing questions was to examine our hypothesis that when the father failed to secure the firearm, participants would perceive him as having more of a responsibility for the crime and would receive a harsher sentencing.

To analyse our sentencing question, we ran a one-way ANOVA with our negligence variable as a predictor for sentencing. Our analysis revealed a significant effect for our negligence variable, $F(1, 241) = 8.80, p = .003, \eta^2_p = .04$. The overall mean sentencing score for our 'Not Negligent' condition was lower ($M = 7.28, SD = 6.25$) than the overall mean score for our 'Negligent' condition ($M = 9.85, SD = 7.32$).

Our results support our hypothesis that the father leaving the gun case unlocked, which we regarded as a negligent condition, would lead to a harsher sentence from participants. This finding is consistent with past research that showed that participants are more likely to assign harsher punishments when they perceive the defendant's actions as morally wrong, even when the harm caused is the same (Carlsmith et al., 2002). In our study, the significant main effect for negligence conditions supports this notion, with planned comparisons revealing a meaningful difference in sentencing, where the negligent condition resulted in an average sentence 3.05 years longer than the non-negligent condition. These findings are legally interesting because they suggest that moral perceptions of negligence can influence sentencing, even when the harm caused is the same. This raises concerns about sentencing consistency, as jurors may impose harsher penalties based on perceived moral blame rather than legal culpability. This could lead to disparities in sentences, prompting questions about whether the legal system should implement more structured guidelines to reduce the impact of subjective judgments and ensure more consistent sentencing outcomes.

Responsibility Questions

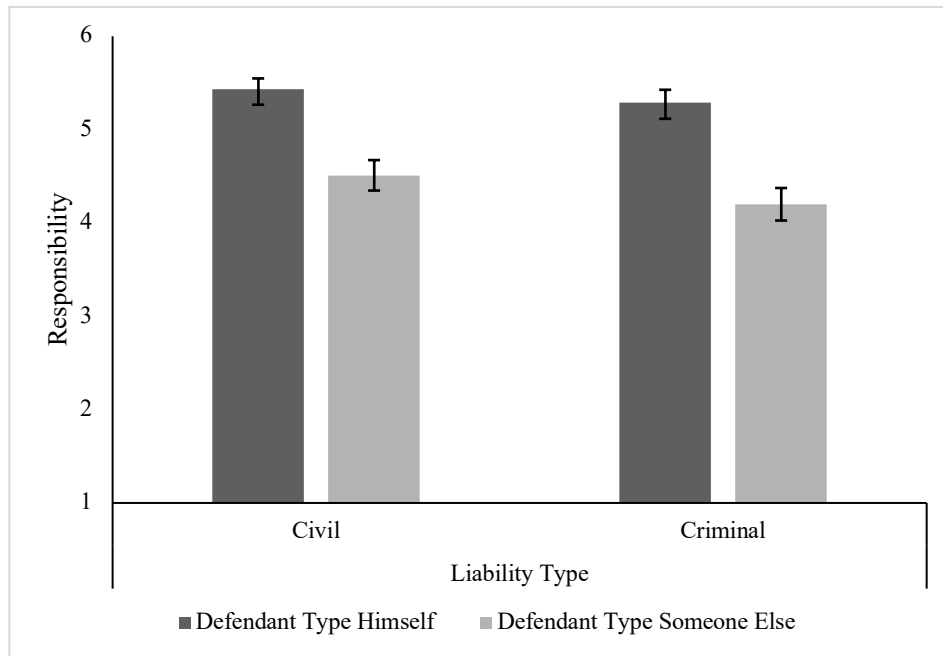
The aim of the responsibility questions was to assess attitudes towards secondary liability cases more generally. To analyse our responsibility questions, we conducted a 2×2 repeated measures ANOVA to examine the effects of the type of liability – civil or criminal – and the type of defendant – himself or someone else – on the level of responsibility participants gave based on Likert scale questions. Specifically, we will assess how the person using the gun resulting in harm (himself vs. someone else) influences the level of responsibility participants assign the father. Additionally, we will evaluate how the type of charges given (criminal vs. civil) will influence the level of responsibility that participants imposed on the father.

Our analysis revealed a significant main effect of liability type, $F(1, 243) = 167.59, p < .001, \eta^2_p = .41$, indicating that participants assigned higher responsibility in civil cases ($M = 4.97, SD = 1.12$) than in criminal cases ($M = 4.75, SD = 1.23$). Additionally, the main effect of defendant type was significant, $F(1, 243) = 38.52, p < .001, \eta^2_p = .14$, with participants assigning greater responsibility when the defendant was himself ($M = 5.36, SD = 1.02$) compared to someone else ($M = 4.36, SD = 1.99$). The interaction between the defendant and liability type was also significant, $F(1, 243) = 9.93, p = .002, \eta^2_p = .04$ (see Figure 3).

These results suggest that participants saw the defendant as more responsible when he was directly involved ('himself') rather than when someone else caused the harm. In terms of secondary liability, this means people were less likely to hold the defendant fully accountable when another person was responsible, even if his negligence contributed to the outcome. This suggests that jurors may be less inclined to assign full blame in cases of secondary liability.

Figure 3.

Liability and Defendant Types and the Mean Responsibility Scores



Experiment 2

Method

In Experiment 2, we examined the impact of culpable causality and its interaction with negligence in a secondary liability case. Similar to Experiment 1, participants read a brief summary involving a single father and his son who were involved in a school shooting scenario.

In this experiment, we manipulated the father's level of negligence and reason for owning the gun. Specifically, we manipulated the father's occupation, portraying him as either a hunter (a relatively neutral profession) or a drug dealer (a more socially undesirable profession) and examined how this influenced the degree to which his behaviour was seen as the cause of the school shooting.

The key variable for this study is sentence length. We hypothesised that when the father's full-time job was as a drug dealer as opposed to a hunter, participants would issue him a harsher sentence for the crime. We also hypothesised that when the father failed to secure the firearm, participants would issue him a longer sentence compared to when he had the firearm secured. We also predicted an interaction where the father's career status would modify the effect of the father's actions. In other words, we predicted that when the father's career is as a hunter, the level of sentencing issued would be lower if the firearm is secured compared to when it is not. However, when he is described as a drug dealer, the level of sentencing would remain the same (or only slightly lower) when the firearm is secured compared to when it is not.

Design

For this experiment, we used a 2 (negligence; gun secured vs. gun not secured) \times 2 (unrelated culpability; drug dealer vs. hunter) between-subjects design. We received ethics approval from the University of Waikato Human Research Ethics Committee (see Appendix A). The pre-registration can be located in Appendix D and at Open Science Framework (<https://aspredicted.org/b265-n4tr.pdf>)

Participants

We recruited participants using the participant recruitment website CloudResearch (*CloudResearch | Online Research & Participant Recruitment Made Easy*, 2024). All participants were from the United States. We aimed to recruit approximately 250 participants. This target was based on a sensitivity analysis indicating that, with 250 participants, we can detect an effect (f^2) of 0.032 ($\alpha = .05$, $\beta = .10$). Effect sizes below this level would likely not be practically significant.

Out of 262 participants, 244 completed the experiment, and we could include every participant who completed the survey in our analysis. The mean age of the participants was 37.61 ($SD = 10.75$). Fifty-two percent of these participants identified as male, 45% as female, 1% as non-binary, and 0.8% preferred not to say. Sixty-seven percent identified as White/Caucasian, 15% as Asian, 9% as Black/African American, 8% as Hispanic, 1% selected multiple, 0.8% as American Indian, and 0.4% as Pacific Islander. Forty-three percent obtained a bachelor's degree, 19% attended college, 14% had completed high school or the equivalent of a GED, 10% had a master's degree, 8% had an associate degree, 4% had a doctorate, and 0.4% had less than a high school diploma.

Materials

Similar to Experiment 1, the main stimulus material in this experiment was a short summary regarding a defendant who is charged with criminally negligent manslaughter after his son killed a classmate. The summary details the father and son's homelife, including the father's career, the absence of the boy's mother, and his aggressive behaviour at school. It also details the gun ownership and the incident of the school shooting that resulted from the son obtaining the father's gun.

We created four versions of the case summary, each manipulated to have the father either presented as negligent or not negligent in the way he stores his gun; his gun safe is left locked or unlocked. We also manipulate the career of the father, whether he is a drug dealer (unrelated culpable) or a hunter (unrelated not culpable). A full copy of these summaries can be found in Appendix E.

After reading one of the summaries, participants filled out multiple questions regarding perceived responsibility and recommended sentencing. These scales and questions are identical

to those presented in Experiment 1, except that we did not ask questions regarding the probability of the outcome occurring (which pertains only to hindsight bias). Finally, we asked the same quality control questions as in Experiment 1. The full scales and questions are in Appendix E.

Procedure

The participants from this experiment also completed this survey online, hosted by Qualtrics (<https://www.qualtrics.com/>).

Following the same structure as Experiment 1, participants were required to read an information sheet and provide their informed consent to continue. Participants first received quality control instructions, then provided demographic information before proceeding to read the summary.

After the demographics, participants proceeded to the summaries. Participants were briefed on what they were reading and informed of our interest in the pros and cons of gun ownership. The four different versions of the summary were then presented randomly, followed by the sections on perceived responsibility and sentencing. Participants were then presented with the same quality control questions as Experiment 1, followed by a debrief and a completion code for them to enter into cloud research, where they would then be compensated 1.25 USD for participating.

Results and Discussion

To analyse our results from Experiment 2, we will first conduct a 2×2 factorial ANOVA on our sentencing question to examine the effects of negligence and culpability on sentencing decisions. Specifically, we will assess how the defendant's occupation (hunter vs. drug dealer)

influences sentencing and test our hypotheses regarding culpability. Additionally, we will evaluate how negligence in gun storage (locked vs. unlocked) further impacts these results.

Next, to analyse our responsibility questions, we will conduct a 2×2 repeated measures ANOVA to assess general support for secondary liability by analysing these results by defendant type (himself vs. someone else) and liability type (civil vs. criminal).

Sentencing Questions

To analyse our sentencing question, we conducted a 2×2 factorial ANOVA using negligence and culpability variables as predictors of sentencing. Our analysis revealed that the main effect for our negligence variable was significant, $F(1, 239) = 4.90, p = .028, \eta^2_p = .02$. The overall mean sentencing score for our ‘Not Negligent’ condition was lower ($M = 7.74, SD = 6.76$) than the overall mean score for our ‘Negligent’ condition ($M = 9.72, SD = 7.44$). This result supports our hypothesis that when the father failed to secure the firearm, participants would issue him a longer sentence compared to when he has the fire arm secured.

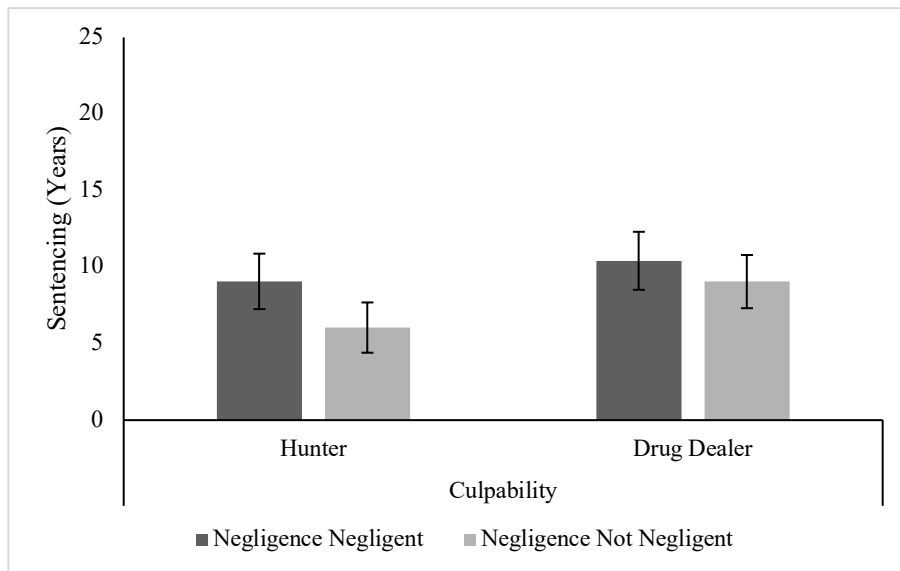
Our analysis also revealed a significant main effect for our culpability variable, $F(1, 239) = 4.83, p = .029, \eta^2_p = .02$. The overall mean sentencing score for our ‘Hunter’ condition was lower ($M = 7.78, SD = 7.02$) than the overall mean score for our ‘Drug Dealer’ condition ($M = 9.73, SD = 7.22$). This result supports our hypothesis that when the father’s full-time job was as a drug dealer opposed to a hunter, participants would issue him a harsher sentencing for the crime. This finding is important because it suggests that the defendant’s perceived culpability, based on their occupation, influenced sentencing decisions—even though it is not legally relevant. Participants assigned longer sentences to the drug dealer than the hunter, indicating that societal perceptions of moral character and risk may shape legal judgments, even when the offence remains constant. These findings are legally important because they suggest that extra-legal factors, such as a

defendant's occupation, can bias sentencing decisions, potentially undermining the principle that punishment should be based solely on the crime and its circumstances rather than personal characteristics. Psychologically, it aligns with research that indicates that people rely on stigma and perceived moral character when assigning blame and punishment. This demonstrates how preconceived notions about a person's lifestyle or profession can influence legal outcomes, even when those factors are unrelated to the specific act of negligence in question.

The interaction between our negligence and culpability variables was not significant, $F(1, 239) = 0.51, p = .476, \eta^2_p = .00$. However, planned comparisons of our hypothesised effects revealed a significant difference between the negligent/hunter and not negligent/hunter conditions, $F(1, 239) = 4.30, p = .039, \eta^2_p = .02$. However, the mean difference found between the negligent/drug dealer and the not negligent/drug dealer conditions was not significant, $F(1, 239) = 1.12, p = .291, \eta^2_p = .01$. These results support our hypothesis that when the father's career is as a hunter, the level of sentencing issued will be lower if the firearm is secured compared to when it is not. However, when the father is described as a drug dealer, the sentencing issued remains the same or only slightly lower when the firearm is secured, compared to when it is not (see Figure 4).

Figure 4.

Mean sentencing allocation for both negligence and culpability variables.



This finding is important because it demonstrates how culpable causation can attenuate the effect of negligence. Specifically, participants are better able to assess negligence when the father is a hunter; the results are consistent with legal theories of blame. The Hunter's role may be seen as more morally neutral, leading them to focus more on the actions related to firearm security. In contrast, when the father is a drug dealer, the perception of his overall moral culpability overshadows the specific negligence related to securing the firearm. This suggests that moral judgments about the father's character may influence how participants assess the cause of the harm, reducing the impact of negligence in cases where the father's actions are seen as morally wrong.

These results align with prior research on culpable causation (Simester & Sullivan, 2016). When the father's occupation was a hunter, participants assigned a lower sentence when the firearm was securely stored, consistent with findings that negligence amplifies perceived blame

and punishment (Alicke 1992, Carlsmith et al., 2002, Darley et al., 2000). However, when the father was described as a drug dealer, sentencing remained similar regardless of firearm security, suggesting that pre-existing biases toward high-culpability professions may override the mitigating effect of responsible gun storage. This aligns with research on stereotype-driven judicial decision-making (Wistrich & Rachlinski, 2017), indicating that occupational stigma influences sentencing outcomes beyond just the circumstances of negligence.

Responsibility Questions

The responsibility questions aimed to evaluate perceptions of secondary liability cases. Similar to Experiment 1, we performed a 2×2 repeated measures ANOVA to investigate how liability type (civil vs. criminal) and defendant type (self vs. another person) influenced participants' responsibility ratings on a Likert scale. Our analysis revealed that the main effect of liability type was significant, $F(1, 243) = 25.71, p < .001, \eta^2_p = .096$, indicating that participants assigned higher responsibility in civil cases ($M = 5.0, SD = 1.16$), than in criminal cases ($M = 4.83, SD = 1.24$). It also revealed that the main effect for defendant type was significant, $F(1, 243) = 151.64, p < .001, \eta^2_p = 0.38$, with participants assigning greater responsibility when the defendant was 'himself' ($M = 5.51, SD = 0.96$) compared to 'someone else' ($M = 4.32, SD = 1.44$). The interaction between the defendant and liability type was also significant, $F(1, 243) = 20.46, p < .001, \eta^2_p = .08$

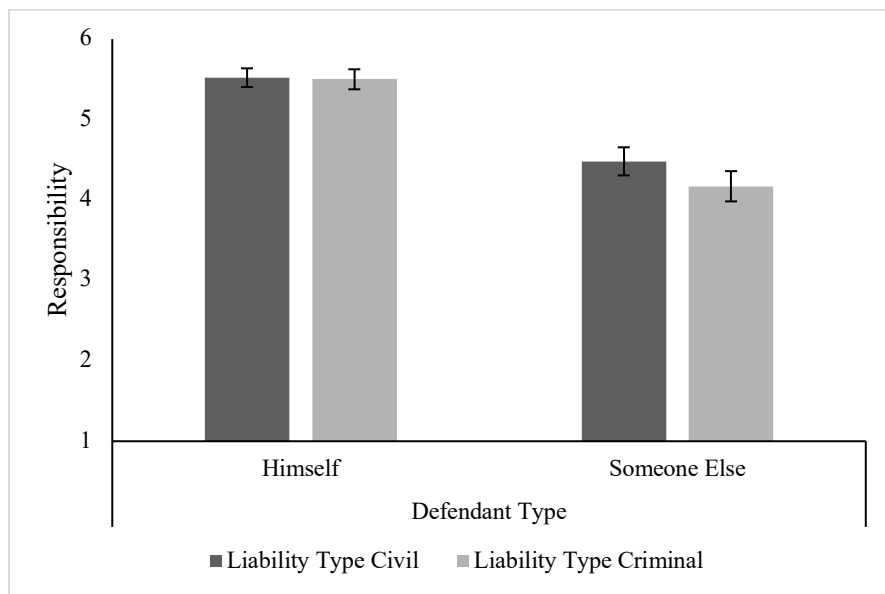
Planned comparisons revealed a significant difference between civil liability/someone else and criminal liability/someone else, $F(1, 240) = 33.65, p < .001, \eta^2_p = .12$. However, the mean difference found between civil liability/himself and criminal liability/himself was not significant, $F(1, 240) = 0.65, p = .421, \eta^2_p = .00$. These results suggest that when participants evaluated the father's level of responsibility for harm caused by his own use of the gun, there

was no difference between civil and criminal responsibility. However, when considering harm caused by someone else using the gun, participants attributed less responsibility to the father in the criminal context compared to the civil context (see Figure 5).

Regarding secondary liability, this implies that participants were less likely to attribute full responsibility to the defendant when another individual was the primary cause, even if his negligence played a role in the outcome. This indicates that in cases of secondary liability, jurors may be more hesitant to attribute full responsibility.

Figure 5.

Perceived responsibility level for defendant and liability type.



Experiment 3

Method

In Experiment 3, we examined the impact of gender bias and its interaction with negligence on the level of perceived responsibility in a secondary liability case. In this vignette,

we manipulated the gender of the parent to be either male or female. We also manipulated the parents' reason for negligence, portraying them as either being absent due to working extra shifts (a neutral circumstance) or due to an affair (a morally questionable circumstance). Unlike Experiment 1 and 2, the parent in this experiment is always negligent in that they have been failing in their duty to care for their child properly, especially given imminent warning signs of violence towards others.

The key variable in this experiment was sentencing. We hypothesised that the female defendant, as the stereotypical primary caregiver, will receive a longer sentence, as opposed to the male defendant, who we predict will receive a shorter sentence. This contradicts the chivalry theory; we believe that the circumstances of a secondary liability case involving child responsibility will override this theory due to these gender roles. We also hypothesise—due to culpable causality—that both genders will receive longer sentences when their negligence results from having an affair rather than from working extra shifts to support the family.

We also predicted an interaction where the parent's gender would moderate the effect of the reason for negligence. Specifically, gender role stereotypes designate women as primary caregivers and not breadwinners and men as more likely to have an affair. Based on these stereotypes, we predicted that when the parent's gender is female, their level of sentencing will be higher when they are described as having an affair, compared to when they are described as working extra shifts. However, when the parent's gender is male, their level of sentencing will remain the same or will only be slightly higher when they are described as having an affair, compared to when they are described as working extra shifts.

Additionally, we predict that female participants may assign a longer sentencing to the female defendant. In comparison, male participants may impose a longer sentence on the male defendant, reflecting the Black Sheep Effect.

Design

For this experiment, we used a 2 (gender; male vs. female) \times 2 (negligence; affair vs. extra shifts) between-subjects design. We received ethics approval from the University of Waikato Human Research Ethics Committee (see Appendix F). The pre-registration can be located in Appendix H and at Open Science Framework (<https://aspredicted.org/x8gj-q2my.pdf>).

Participant

We recruited participants using the participant recruitment website CloudResearch (*CloudResearch | Online Research & Participant Recruitment Made Easy*, 2024). All participants were from the United States. We aimed to recruit approximately 300 participants. This target was based on a sensitivity analysis indicating that, with 300 participants, we can detect an effect (f^2) of 0.032 ($\alpha = .05$, $\beta = .10$).

Out of 326, 313 completed the study. However, we excluded 10 participants because they chose to withdraw their answers at the end of the survey or exit the browser. We also excluded one other participant due to not answering the attention check questions properly, leaving us with 302 participants for analysis.

The mean age of the participants was 37.37 ($SD = 11.51$). 48.7% of the participants identified as male, 48.7% as female, 2.3% identified as non-binary, and 0.3% preferred not to say. Sixty-two percent identified as White/Caucasian, 14.9% as Black/African American, 10.2% as Asian, and 7.3% as Hispanic. Forty-three percent obtained a bachelor's degree, 16.8% had a

master's degree, 16.5% attended college, 9.9% had completed high school or the equivalent of a GED, and 3% had an associate degree.

Materials

The main stimulus material in this study was a more extensive case summary regarding a defendant who is charged with criminally negligent manslaughter. The defendant's 15-year-old son shot and killed six of his classmates during the school day. Prosecutors allege that the defendant is criminally negligent in these deaths for providing their son with a gun and ignoring signs that he was potentially violent. There are four versions of the case summary, each manipulated to have either the mother or the father as the defendant and primary caregiver, as well as their reason for negligence being either because of an affair or because they have taken on extra shifts at work to support the family. A full copy of these summaries can be found in Appendix I.

After reading one of the trial summaries, participants filled out multiple questions regarding perceived responsibility, blameworthiness, and recommended sentencing. These questions were not the same as those presented in Experiments 1 and 2. The full scales and questions are also in Appendix I. We briefly summarise each section here.

In the first section, we presented four statements to the participants to measure the defendant's *perceived responsibility*. An example of one of the statements we presented was '[Defendant] should have done more to prevent the school shooting.' Statements increased in intensity, with the last one saying, '[Defendant] is guilty of manslaughter in the first degree.' Participants rated their agreement with these statements on a 6-point Likert scale from 1 (*Strongly Disagree*) to 6 (*Strongly Agree*).

Next, we measured participants' perceptions of several parties' *individual blameworthiness*. This section included a list of potential blameworthy individuals involved in the trial: a) the defendant, b) the spouse, c) the perpetrator, Tom, or d) other sources. We asked participants to assign a percentage of the total blame to each of the four options (options A and B were replaced with the defendants' and spouses' names based on the condition). The total blame needed to add to 100% before the page would advance.

Following these assessments of blame, we asked participants to assign the defendant an appropriate *sentence*. First, we briefed the participants, letting them know that the minimum sentence for criminally negligent manslaughter is one year, the maximum is 5 years, and that the defendant was being charged with five counts. We then asked the participants, 'If you were the judge in this case, what sentence would you recommend? Sentencing guidelines stipulate you must pick a number between 1-25 years, regardless of if you agree with the jury's verdict or not'.

Finally, we asked the same quality control questions as in Experiments 1 and 2. The full list of post-survey attention check questions can also be found in Appendix I.

Procedure

The Participants from this experiment also completed this survey online, hosted by Qualtrics (<https://www.qualtrics.com/>).

Following the same structure as Experiment 1 and 2, participants were required to read an information sheet and provide their informed consent to continue. Quality control instructions were presented, followed by a request for demographic information before progressing on to reading the summary.

After the demographics, participants proceeded to the trial summaries. Before each summary, the participant was briefed on what they were reading and who the trial summary was

for. The survey directions then indicated that they need to read carefully and that they will be asked—after the summary—to determine if the defendant is guilty of manslaughter. We then also presented some definitions explaining involuntary manslaughter and negligence.

Participants could then continue to the trial summary. As we had four different versions of the summary, we assigned each one to be presented randomly.

Participants then completed the sections on perceived responsibility, individual blameworthiness, and sentencing. Participants were then presented with the same quality control questions as Experiment 1 and 2, followed by a debrief and a completion code for them to enter into cloud research, where they would then be compensated 7.50 USD per hour for participating.

Results and Discussion

We analyse the results in three sections. First, we conduct a 2×2 factorial ANOVA using defendant gender & negligence to predict all three dependent variables: sentencing, responsibility, and percentage of blame. First, we present sentencing, the key variable, followed by responsibility and then percentage of blame. In each case we tested for the Black sheep effect by running a $2 \times 2 \times 2$ ANOVA using participant gender, negligence, and defendant gender.

Sentencing is the key variable in this experiment, but we predicted a similar pattern to occur for all three dependent variables. Specifically, we predicted that when the defendant was described as negligent, sentencing, responsibility and percentage of blame would increase. We also predicted the same effect to occur if the defendant was described as female. We also predicted a potential interaction where the reason for negligence will moderate the effect of the parent's gender. In other words, we predicted that when the reason for negligence is due to working extra shifts, their level of sentencing, responsibility, and percentage of blame will be higher when they are female compared to when they are male. However when the reason for

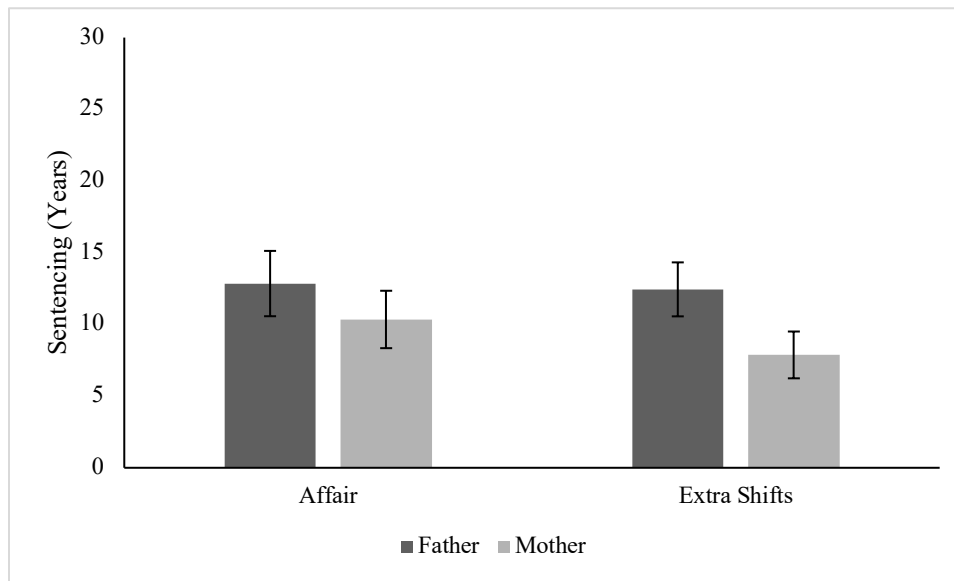
negligence is due to an affair, our dependant variables will not be significantly different between each gender (or will only be slightly higher when they are described as female, compared to when they are described male).

Sentencing Question

To analyse our sentencing question, we ran a 2×2 factorial ANOVA using negligence and gender of the parent as predictors of sentencing. Our sentencing question consisted of only one item assessing how many years in prison (from one to thirty for each fatality) the participants would allocate to the defendant. Our analysis revealed that the main effect for our negligence variable was not significant $F(1, 298) = 2.06, p = .153, \eta^2_p = .01$, whereas the main effect for our defendant gender variable was significant $F(1, 298) = 12.43, p < .001, \eta^2_p = .04$. The male defendant conditions mean sentencing score was higher ($M = 12.64, SD = 9.37$) than the mean sentencing score for the female defendants condition ($M = 9.05, SD = 7.99$). These results indicate that, contrary to our hypothesis, the male defendant received a higher average sentencing than the female defendant, suggesting that gender stereotypes about caregiving roles may not have influenced sentencing decisions as expected.

Figure 6.

Recommended sentencing for each condition.



Our analysis also revealed that the interaction between negligence and defendant gender was not significant, $F(1, 298) = 1.06, p = .303, \eta^2_p = .00$. However, planned comparisons showed that the length of sentencing differed significantly between fathers and mothers, but only within the extra shifts condition, $F(1, 298) = 10.61, p = .001, \eta^2_p = .03$, and both genders were sentenced more similarly within affair condition $F(1, 298) = 3.05, p = .082, \eta^2_p = .01$ (see Figure 6).

Specifically, fathers and mothers received similar sentences when their negligence stemmed from an affair. In contrast, fathers received significantly harsher sentences than mothers when their negligence was due to extra shifts.

These findings did not support the hypothesis that female defendants would receive harsher sentences than male defendants overall. However, they indicate that the reason for negligence influenced how the parent's gender affected sentencing outcomes. As shown in

Figure 6 above, female defendants received harsher sentences for an affair than for extra shifts, while male defendants' sentencing remained similar across conditions.

This aligns with research suggesting that female offenders are often treated more leniently due to chivalry theory, particularly when they fit caregiving roles, and our results suggest that this may have influenced the mother's sentencing in the extra shifts condition where the mother's negligence could be interpreted as fulfilling a caregiving role. (Koons-Witt et al., 2014). However, when negligence was due to an affair, women were not afforded the same leniency, which is consistent with research indicating that women who deviate from caregiving norms may be judged more harshly (Spohn & Beichner, 2000).

A possible explanation for male defendants' sentencing remaining similar across both conditions is that men may be perceived as less accountable for caregiving responsibilities in terms of secondary liability for a child, meaning their sentencing is less affected by the reason for negligence.

These findings highlight potential biases in sentencing, especially in secondary liability cases, where parents are held accountable for their child's actions, such as school shootings. Prior research suggests that jurors may be more inclined to assign culpability based on moral judgments rather than strictly legal principles (Nadler, 2012). The variation in sentencing outcomes based on both gender and the reason for negligence suggests that different standards may be applied in such cases. If mothers receive stricter penalties when their actions contradict caregiving norms, while fathers face harsher sentencing overall regardless of the reason for negligence, this raises important questions about consistency in legal decision-making in secondary liability cases.

We then ran a three-way factorial ANOVA with our gender variable, as well as participants gender to test our hypothesis for black sheep theory. Our analysis revealed that the effect for participants gender was not significant, $F(3, 301) = 2.52, p = .058, \eta^2_p = .02$. Participant gender also did not have a significant interaction with our negligence variable, $F(2, 301) = 0.25, p = .775, \eta^2_p = .02$, or with our defendant gender variable, $F(2, 301) = 1.38, p = .252, \eta^2_p = .01$. These results do not support our hypothesis and do not indicate any influence of the black sheep effect.

Responsibility Questions

To analyse our responsibility questions, first we analysed responses to the responsibility Likert scale questions. The four items in this section had high reliability (Cronbach's $\alpha = .88$). For our analyses we created an 'overall responsibility' variable, which held the mean score across all four responsibility questions for each participant, and we used this mean score to analyse the data.

We conducted a 2×2 factorial ANOVA using negligence and defendant gender as predictors of responsibility. The analysis revealed that the effect for negligence was not significant, $F(1, 298) = 3.44, p = .065, \eta^2_p = .011$. The mean responsibility scores for the affair condition ($M = 5.01, SD = 0.99$), and the extra shifts condition ($M = 4.80, SD = 1.08$) were not significantly different from each other. In addition, our analysis revealed that the main effect for defendant gender was also not significant, $F(1, 298) = 1.63, p = .202, \eta^2_p = .00$. The mean responsibility scores for the male defendant condition ($M = 4.98, SD = 0.94$), and the female defendant condition ($M = 4.81, SD = 1.14$) were not significantly different from each other.

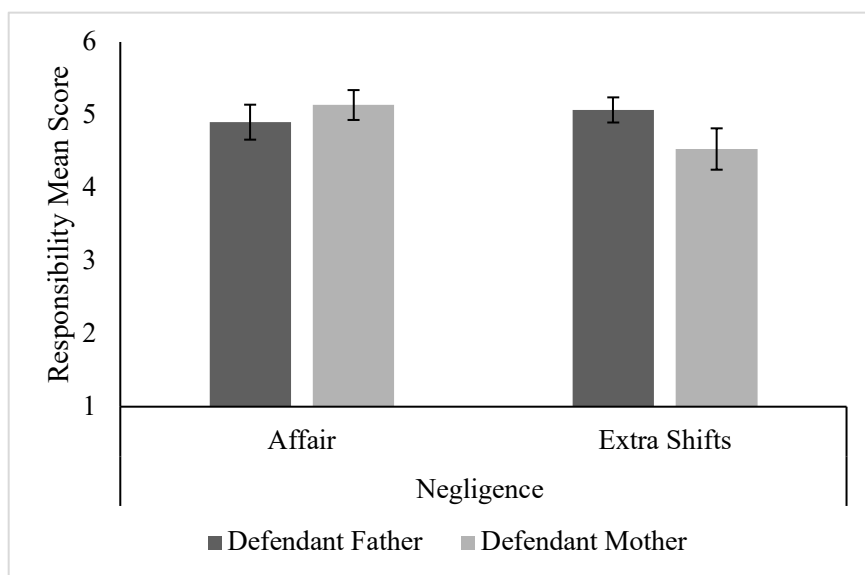
However our analysis did reveal a significant interaction between our negligence and defendant gender variables, $F(1, 298) = 10.75, p = .001, \eta^2_p = .03$. Planned comparisons revealed

a significant difference of the mean level of perceived responsibility between the affair and extra shifts condition when the defendant was described as female, $F(1, 298) = 12.82, p < .001, \eta^2_p = .04$. The difference of the mean level of perceived responsibility between the affair and extra shifts condition when the defendant was male was not significant, $F(1, 298) = 1.04, p = .307, \eta^2_p = .00$.

This result is important as it shows that the reason for negligence has an influence on the level of perceived responsibility, but only when the defendant is female (see Figure 7). This suggests that gendered perceptions may play a role in how negligence is evaluated, with women facing greater scrutiny when their actions deviate from traditional caregiving roles, such as when described as having an affair. This aligns with previous research that highlights how women who violate societal expectations may be judged more harshly than men, particularly in contexts involving familial responsibility and caregiving roles (Spohn & Beichner, 2000).

Figure 7.

Overall responsibility score and defendant gender and negligence variables.

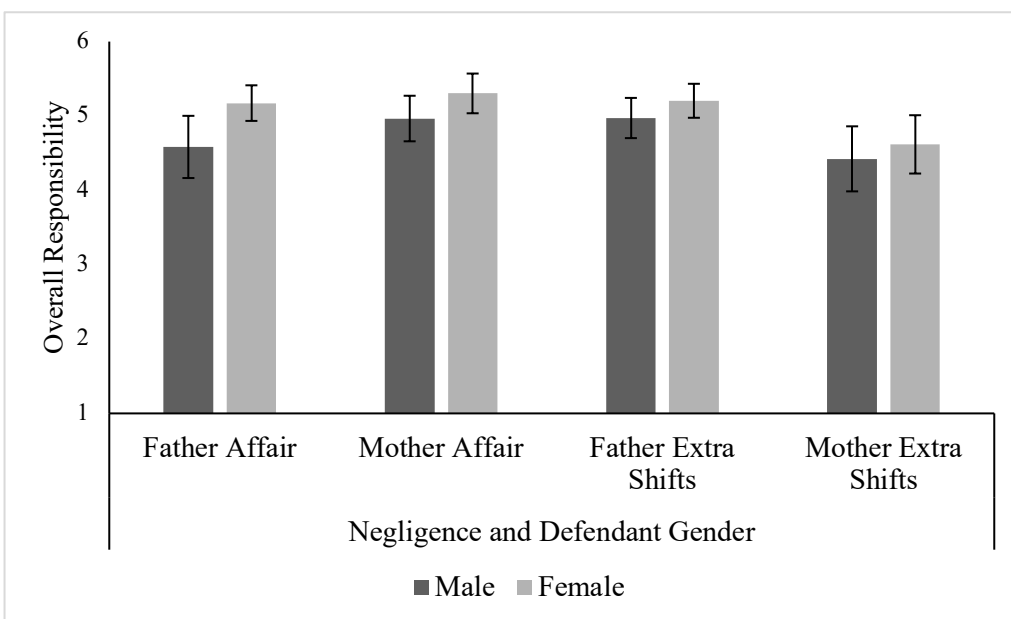


To test for the black sheep effect, we then ran an additional three-way factorial ANOVA with our negligence and defendant gender variables, as well as the participants' gender. Our analysis revealed that the gender of the participant had a significant main effect, $F(3, 290) = 2.80, p = .040, \eta^2_p = .03$. Female participants mean responsibility score was higher ($M = 5.08, SD = 0.90$) than male participants mean responsibility score ($M = 4.73, SD = 1.15$). This result showed us that female participants were harsher in assigning level of responsibility overall (see Figure 8).

The significance of this finding implies that the participants' own gender played a role in how they evaluated the defendant's level of responsibility, highlighting the potential influence of gender-based biases in sentencing decisions. However, the interaction between our participants' gender and the defendant's gender variable was not significant, $F(2, 290) = 1.11, p = .330, \eta^2_p = .01$.

Figure 8.

Overall responsibility score for negligence and defendant variables and participant genders.



Our results do not support our hypothesis that the Black Sheep Effect would occur, where male participants would assign higher levels of responsibility to male defendants and female participants would assign higher levels of responsibility to female defendants. Specifically, the interaction between participants' gender and defendant's gender was not significant, suggesting that participants' gender did not significantly influence their judgments of the defendant's responsibility based on the defendant's gender. Although we observed a main effect for participant gender earlier, where gender influenced how responsibility was assigned overall, there was no evidence of a differential effect based on the gender of the defendant. This indicates that, despite our prediction, participants did not exhibit the expected Black Sheep Effect in their judgments, meaning they did not assign more responsibility to defendants of the same gender as themselves.

These findings suggest that the gender of the defendant may not play as significant a role in shaping responsibility judgments as we initially anticipated. A possible explanation for the lack of a significant interaction between participant and defendant gender could be the nature of the scenario (a school shooting) and the focus on secondary liability, which may have led participants to prioritise the severity of the incident over gender in their judgments.

Percentage of Blame Question

As an initial analysis for our percentage of blame questions, due to its legal relevance, we ran a one-way repeated measures ANOVA using the four blame categories (the defendant, the spouse, the son (Tom), and the school) to predict the percentage of blame. Our analysis revealed that the main effect for percentage of blame was significant, $F(3, 321) = 144.38, p < .001, \eta^2_p = .57$, indicating that participants assigned a higher percentage of blame towards the son who

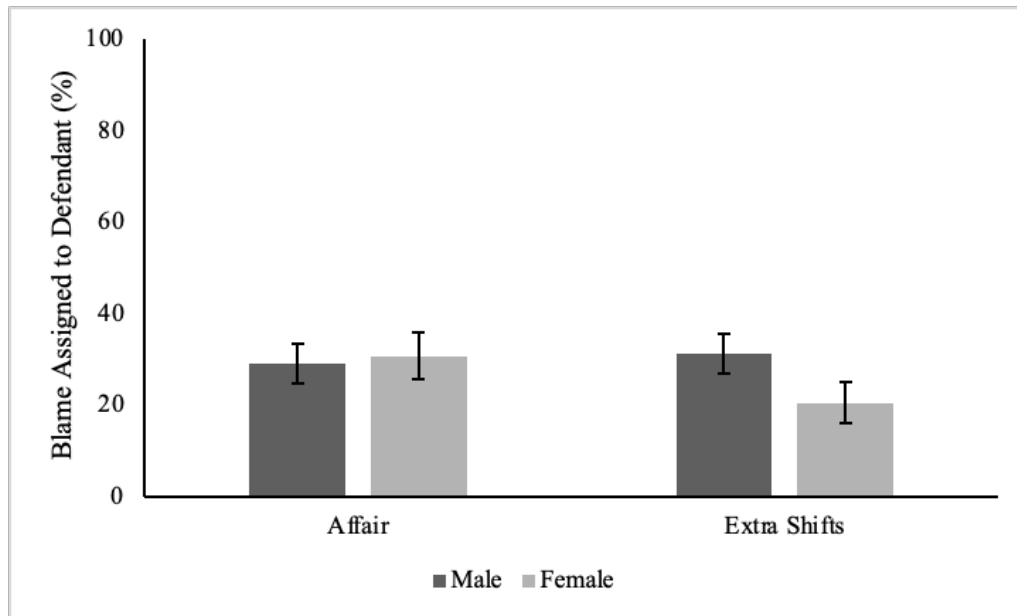
committed the shooting ($M = 47.45$, $SD = 18.91$), opposed to the defendant (the parent) ($M = 27.89$, $SD = 12.82$). This finding is important as it tells us participants' attitudes towards secondary liability, and that they are more likely to place blame towards the child rather than the parent. However, participants still attributed a noteworthy amount of blame towards the parent.

We then ran another 2×2 factorial ANOVA with our gender and negligence dependent variables, and the question where we asked for the percentage of blame they would assign towards the defendant (the parent). Our analysis revealed that the main effect for our negligence variable was not significant, $F(1, 290) = 2.61$, $p = .108$, $\eta^2_p = 0.01$. This result does not support our hypothesis that both genders will receive a larger percentage of blame for the crime when their negligence results from having an affair, rather than from working extra shifts.

However the main effect for our gender variable was significant $F(1, 290) = 13.35$, $p < .001$, $\eta^2_p = .04$, as well as the interaction between our gender and negligence variables $F(1, 290) = 8.97$, $p = .003$, $\eta^2_p = .03$. Planned comparisons further revealed a significant difference between the affair and extra shifts conditions when the defendant was female, $F(1, 290) = 10.21$, $p = .002$, $\eta^2_p = .03$. There was no significant difference between the affair and extra shifts conditions when the defendant was male $F(1, 290) = 0.99$, $p = .320$, $\eta^2_p = .00$.

Figure 9.

Mean percentage of blame assigned for the defendant for each condition.



The interaction between gender and negligence showed that the type of negligence (affair vs. extra shifts) influenced blame differently depending on the defendant's gender, with the effect being more pronounced for female defendants (see Figure 9). Notably, Figure 6, Figure 7, and Figure 9 all reflected this same pattern. These findings suggest that gender plays a key role in shaping perceptions of responsibility, which may have implications for legal contexts such as secondary liability cases. Jurors may be influenced by gendered stereotypes, leading to different levels of blame being assigned to male and female parents, even when the negligence is similar.

We then ran a $2 \times 2 \times 2$ factorial ANOVA using our negligence and defendant gender variables, as well as participants' gender to test for the black sheep effect. Our analysis revealed that the effect of gender of the participant was not significant, $F(2, 282) = 1.09, p = .354, \eta^2_p = .01$. The interaction between our participants' gender and defendant gender variable was not

significant, $F(2, 282) = 0.54, p = .585, \eta^2_p = .00$. The interaction between our participants' gender and negligence variable was also not significant, $F(2, 282) = 0.09, p = .906, \eta^2_p = .00$. These findings suggest that participants' own gender did not impact their evaluation of the defendant's percentage of blame, with the defendant's gender emerging as the most influential factor in blame attribution.

General Discussion

We wanted to know: To what extent does hindsight bias, perceived culpability, and a defendant's gender impact the process of jury decision-making, particularly in secondary liability cases involving a child? In Experiment 1, we found that knowing the outcome led participants to perceive it as more probable, demonstrating hindsight bias. We also found that when negligence was introduced, the effects of hindsight bias weakened when the defendant was negligent in not securing the firearm. Participants also assigned harsher sentences when the father was negligent in leaving the gun case unlocked, compared to having it secure in its case. Additionally, defendants were seen as more responsible when directly involved, while secondary liability reduced accountability if another person caused the harm. In Study 2, we found that participants gave harsher sentences when the father was a drug dealer rather than a hunter, regardless of negligence. Negligence itself only influenced these results when the father was described as a hunter, a potentially more morally neutral role, demonstrating how culpable causation can attenuate the effect of negligence. Similar to Study 1, defendants were also seen as more responsible when directly involved in the harm rather than when another person caused it. In Study 3, we found that male defendants received higher average sentences than female defendants, contrary to expectations about caregiving stereotypes. However, female defendants were punished more harshly for an affair than for extra shifts, while male sentencing remained

consistent. Negligence again influenced perceived responsibility but only for women, suggesting greater scrutiny when they deviated from traditional caregiving roles. There was no evidence of the Black Sheep Effect, and participants were more likely to blame the child than the parent for the outcome, resembling Experiments 1 and 2.

Our findings suggest that while hindsight bias affects how people judge the likelihood of an event occurring, it does not significantly alter their assessments of responsibility. Our study supported the notion that people perceive an event as more probable when they know it has already happened, consistent with hindsight bias. Our results replicate the findings of multiple studies that demonstrate the influence of hindsight bias on perceived probability (Fischhoff et al., 1978, Harley, 2007). Our findings on hindsight bias have important implications for legal decision-making. While hindsight bias influences probability judgments—making people believe an outcome was more predictable after it has occurred—our results suggest that legal responsibility is primarily shaped by perceived negligence and direct involvement. This indicates that, in a legal context, jurors may recognise that an event was foreseeable but still prioritise the actions of the defendant when assigning blame and determining sentencing. Our findings suggest that legal decision-makers focus more on whether the defendant's actions were negligent rather than whether the outcome itself was foreseeable. However, this does not mean hindsight bias is irrelevant to legal contexts—it may still play a role in liability assessments, particularly in cases where foreseeability is a key legal question, such as medical malpractice or corporate negligence. Future research should explore whether the emotional weight of a case or the nature of the defendant's actions might strengthen or weaken the influence of hindsight bias on legal judgments.

Perceptions of negligence appear to play a more dominant role in shaping legal judgments, particularly when determining responsibility for a crime. The fact that negligence—such as failing to secure a firearm—resulted in harsher sentencing in both Studies 1 and 2 suggests that, in cases of secondary liability, jurors may prioritise evaluating whether the defendant’s negligence directly facilitated the crime rather than assigning punishment based solely on their association with the offender. From a legal standpoint, this finding underscores the importance of distinguishing between passive association and active contributory negligence in legal decision-making. If jurors are primarily focusing on whether negligence directly enabled the crime, this could reinforce the principle that liability should be contingent on a defendant’s specific actions rather than their proximity to the offender. However, this also raises concerns about consistency in sentencing—if negligence influences punishment severity, it could lead to disparities in sentencing outcomes based on subjective perceptions of what constitutes "sufficient" negligence. This highlights the need for clear legal guidelines to ensure that secondary liability cases are adjudicated in a way that balances accountability with fairness.

However, Study 2 demonstrated that negligence assessment was tempered by a bias: while negligence significantly increased sentencing for the hunter, it had little impact on the drug dealer, suggesting that participants already viewed the drug dealer as highly culpable regardless of negligence. These results closely resembled similar findings regarding culpability (Alicke, 1992; Simester & Sullivan, 2016). This also connects with Just World Theory, which proposes that people tend to view the world as fair, where individuals get what they deserve; in this case, participants may have perceived the drug dealer as inherently culpable and thus deserving of a harsher sentence, regardless of their actual negligence, while the hunter’s sentencing was more influenced by their specific actions (Lerner, 1980).

These findings contribute to psychological theories by showing how stereotypes influence legal decision-making, especially when moral judgments outweigh objective evaluations of negligence. The stricter negligence judgments for the hunter in Experiment 2—where a harsher sentence was given when the gun was unsecured—compared to the consistent sentencing for the drug dealer across both negligence conditions, suggest that people hold individuals perceived as responsible or morally neutral to higher standards. In contrast, drug dealers—who are already stigmatised—were judged harshly regardless of their actual actions.

This suggests that people rely on moral character judgments when assigning blame, rather than focusing solely on negligence. These biases have important legal implications, as they show how personal perceptions and stereotypes can unfairly influence sentencing decisions. This aligns with research on moral character judgments in legal contexts, which shows that perceptions of a defendant's social role or profession can influence sentencing outcomes (Graham et al., 2012). In regards to attitudes revolving around secondary liability, Study 1 and 2 demonstrated that participants were more likely to hold a defendant responsible when he was directly involved, particularly in civil cases. For secondary liability, these findings suggest that jurors are less likely to assign full blame to defendants who are only indirectly involved in a crime, even if negligence is present. The results indicate that direct involvement plays a stronger role in shaping responsibility judgments, meaning that secondary parties—such as parents or employers—may not be held as culpable as the primary offender unless their negligence is seen as a significant contributing factor.

Our results aligned with how jurors are expected to deliberate in court, as they factored in negligence when considering sentencing decisions. However, it is notable that, in principle, negligence should not influence the length or severity of a sentence but rather whether the

defendant is found guilty in the first place. The fact that failing to secure a firearm led to harsher sentencing suggests that participants may have conflated negligence with culpability, potentially assigning greater punishment based on perceived moral responsibility rather than strict legal standards. This is particularly important in cases of secondary liability, where concerns exist that jurors might unfairly punish individuals simply because they are connected to the primary offender, rather than assessing their actual contribution to the crime. Our findings suggest that participants distinguished between mere association and genuine culpability, reinforcing the legal principle that liability should be tied to an individual's actions rather than guilt by association. Additionally, participants' tendency to assign more responsibility to the child rather than the parent in secondary liability cases highlights a focus on direct agency—suggesting that jurors may be more hesitant to extend liability to secondary parties unless their negligence is seen as a substantial contributing factor. This is a positive indication for legal decision-making, as it aligns with the fundamental goal of the justice system: to ensure that responsibility is assigned based on evidence of wrongdoing rather than assumptions about moral or social ties to the offender.

Our findings demonstrating how culpability influences the impact of negligence on sentencing decisions, have real-world implications as they highlight potential biases in jury decision-making that could lead to unfair legal outcomes. Jurors may unconsciously rely on pre-existing stereotypes, holding individuals from respectable professions (e.g., hunters) to higher standards while disproportionately punishing those from marginalised or criminalised backgrounds. This highlights the need to recognise biases in legal settings and emphasises the importance of making sentencing decisions based on legal facts rather than personal judgments or stereotypes. Research shows that ways to mitigate this could be through the implementation of

evidence-based jury reforms, such as allowing jurors to take notes and ask questions during trials, to improve comprehension and reduce biases. Additionally, they suggest providing jurors with written copies of instructions to ensure better understanding of legal guidelines (Bornstein & Greene, 2011). These reforms aim to address inherent biases and improve the accuracy of jury verdicts. By implementing such measures, the legal system can work towards more equitable and reliable outcomes in both criminal and civil trials. Moreover, the results build on previous research demonstrating how moral character assessments influence sentencing decisions, highlighting that even when legal responsibility is identical, perceptions of a defendant's background can shape legal outcomes in ways that may not align with principles of fairness and justice (Vidmar & Schuller, 2001). This is particularly relevant when considering gender biases, which suggest that societal expectations surrounding gender can influence how negligence is evaluated in court, ultimately affecting sentencing decisions.

Study 3 also added to our findings of culpable causation, where male defendants receive harsher sentences than female defendants, suggesting that caregiving stereotypes did not increase sentencing severity for mothers. However, the reason for negligence impacted female defendants differently—mothers received harsher sentences when their negligence resulted from an affair rather than working extra shifts, while fathers' sentences remained consistent across conditions. Similarly, mothers were assigned greater responsibility for negligence due to an affair, but this pattern did not apply to fathers. These findings suggest that gendered moral judgments impact legal outcomes in the same way that the occupation type did in Study 2, in the way that sentencing remained consistent across negligence conditions for our drug dealer defendant, opposed to our hunter defendant. This was particularly evident for women, whose perceived responsibility appears more influenced by moral character assessments than men's. Our results

contribute to psychological theories on gender bias in legal contexts. Initially, the more lenient sentencing of female defendants aligned with chivalry theory, which suggests women receive lighter legal treatment due to societal perceptions of them as less culpable (Fernando et al., 2006). However, this leniency was not absolute—mothers who violated caregiving norms by having an affair faced harsher sentencing, challenging the simplistic application of chivalry theory and highlighting the role of gendered moral character judgments.

This supports gender role theory, which posits that women's perceived culpability is shaped by societal expectations of nurturing and caregiving (Eagly & Karau, 2002). These findings are also consistent with Just World Theory, as mothers were assigned greater blame when their negligence resulted from an affair, suggesting jurors viewed this 'unfair' behaviour as warranting punishment (Lerner, 1980). This reflects a broader tendency to impose harsher consequences on those who defy traditional roles. The lack of evidence for the Black Sheep Effect in our study suggests that harsher treatment of female defendants when they were acting in a socially undesirable way was not driven by in-group derogation (i.e., women judging other women more harshly to distance themselves from a negatively perceived member of their group). Instead, the findings point to broader societal biases that shape perceptions of culpability and sentencing outcomes.

Our findings indicate that female defendants face greater scrutiny when their actions deviate from caregiving norms, leading to harsher sentencing for moral transgressions like an affair. This suggests that jurors may unconsciously weigh perceived morality over legal negligence, potentially reinforcing systemic disparities in sentencing. Previous research supports these patterns—women who deviate from traditional roles are often judged more harshly in legal contexts (Heilman, 2012), and moral character judgments have been shown to disproportionately

impact mothers' sentencing outcomes (Daly, 1987). Our findings contribute to this broader literature, emphasising how gendered biases shape legal decision-making, particularly in cases involving caregiving roles and family dynamics.

Despite the valuable insights provided by these studies, several limitations should be acknowledged. All three experiments used U.S.-based participants, where school shootings are a highly salient and emotionally charged issue. This heightened awareness may have influenced their judgments, potentially amplifying certain biases—such as overestimating the likelihood of a shooting due to frequent media exposure—while muting others, like hindsight bias, since participants may already assume shootings are predictable. This could have led them to interpret even minor warning signs as clear indicators of negligence. Future research should explore more neutral legal scenarios or compare responses across countries with differing levels of gun violence to assess whether these effects are specific to the U.S. context or generalisable to broader legal decision-making.

Following this, our findings are limited in generalisability to other countries and cultures due to differences in legal frameworks, sentencing norms, and moral judgments. The U.S. was chosen intentionally, as it is currently the only country prosecuting parents for secondary liability in school shootings, making it the most relevant legal context for our study. However, in countries where parental responsibility for a child's crime is less legally recognised or where gun ownership is more restricted, perceptions of negligence and culpability may differ significantly. For example, in nations with stricter firearm regulations, negligence involving unsecured guns might be viewed as more severe, while in cultures with stronger collectivist values—common in many Asian, African, and Latin American cultures—blame might be distributed differently between parents and external factors, whereas individualist cultures—like the U.S. and many

Western nations—emphasise personal responsibility, independence, and self-reliance (Hofstede, 1980). Future research should examine these variables in cross-cultural contexts to determine whether the biases we observed are specific to American legal and cultural attitudes or part of a broader psychological pattern.

Another limitation that may explain the absence of the Black Sheep Effect is the nature of secondary liability cases. Our findings suggest that participants are less likely to assign full blame to defendants who are only indirectly involved in a crime, even when negligence is present. Since the Black Sheep Effect relies on in-group members distancing themselves from a deviant peer, it may be muted in this context because the defendant is not the primary offender. Participants may prioritise assessing degrees of negligence and indirect responsibility over making social identity-based judgments. A case where the defendant is directly responsible for harm—rather than being charged for someone else’s actions—might provide a clearer test of the Black Sheep Effect by removing competing legal and moral considerations.

One limitation of our study is that we did not actually test whether hindsight bias and the receipt of outcome information had an influence on sentencing decisions. In the no-outcome condition, we inadvertently revealed the outcome by stating that Jake took his father’s gun and committed the shooting, which could have diminished the potential for examining the true effect of the outcome on sentencing. As a result, we would not have been able to test whether the outcome influence sentencing decisions, as the outcome was unintentionally disclosed. In hindsight, we should have presented hypothetical criminal outcomes and asked participants to provide a sentencing for each one, so that we would not have inadvertently revealed the actual outcome. This approach would have allowed us to better isolate the impact of hindsight bias on sentencing.

Beyond these limitations, our findings open several new research directions. Study 1 showed that hindsight bias influenced probability estimates, suggesting that participants viewed negative outcomes as more foreseeable once they knew the result. However, in the context of school shootings—a highly emotional and socially significant issue—this bias may have been shaped by preexisting beliefs about gun violence, leading participants to assume that any warning sign should have been recognised. Future research should explore whether hindsight bias operates differently in less emotionally charged legal cases, such as corporate negligence or medical malpractice. In these contexts, where participants may not have strong preconceived notions about foreseeability, hindsight bias might play a larger role in shaping perceptions of negligence and culpability. Understanding how emotional intensity influences these judgments is crucial, as it may reveal broader patterns in legal decision-making.

In conclusion, our research highlights how biases—such as hindsight bias, culpability judgments, and gendered stereotypes—shape responsibility assessments and sentencing outcomes. Across three studies, we found that while hindsight bias affected probability estimates, perceptions of negligence played a dominant role in shaping legal judgments. Additionally, jurors’ pre-existing stereotypes, particularly regarding gender and profession, distorted perceptions of culpability, leading to unequal outcomes. These findings underscore the need for interventions, such as jury bias training and judicial instructions, to mitigate these effects and ensure legal decisions are based on objective facts rather than subjective moral judgments. By recognising and addressing these biases, we can work toward a more equitable judicial system where fairness is consciously upheld. Cases such as that of James and Jennifer Crumbley highlight the complexities of secondary liability in school shootings. Our findings suggest that jurors are more likely to assign blame to the child rather than the parents, given their

indirect involvement. Moreover, factors such as culpability and gender may have influenced how James and Jennifer were perceived, raising questions about whether the outcome would have differed had they been judged as single parents rather than being tried consecutively. These nuances emphasise the importance of carefully considering how biases shape legal outcomes in secondary liability cases.

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Appendices

Appendix A

Ethics approval from the University of Waikato Human Research Ethics Committee for Study 1 and 2

*Te Wānanga o Ngā Kete | Division of Arts,
Law, Psychology & Social Sciences*

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Dr Andrew Evelo

Te Kura Whatu Oho Mauri
School of Psychology

18 August 2024

Dear Andrew

Re: **FS2024-:29 Implicit Gender Bias, Gender Norms, Culpable Causality, Jury Decision Making**

Thank you for submitting an amendment to your approved application to the ALPSS Human Research Ethics Committee. We have reviewed your amendment and the Committee is now pleased to offer formal approval for your research activities.

We encourage you to contact the committee should issues arise during your data collection, or should you wish to add further research activities or make changes to your project as it unfolds. We wish you all the best with your research. Thank-you for engaging with the process of Ethical Review.

Kind regards,



Dr Oleg Medvedev, Convenor
Division of Arts, Law, Psychology & Social Sciences Human Research Ethics

Appendix B

Pre-registration for Study 1



Hindsight Biases and How they Impact Perceived Culpability (#208054)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has 2 authors.

Pre-registered on: 01/15/2025 12:44 PM (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

To what extent does hindsight bias affect the culpability judgments of a defendant in a secondary liability case?

3) Describe the key dependent variable(s) specifying how they will be measured.

Participants will fill out a survey that will assess their opinion on the perceived probability of a harmful outcome occurring, as well as level of culpability of the defendant in their prescribed condition. Surveys questions will be in the form of slider scales ranging from 1-25, agreement likert scales from 1 (Strongly Disagree), 2 (Disagree), 3 (Slightly Disagree), 4 (Slightly Agree), 5 (Agree), to 6 (Strongly Agree), as well as probability likert scales from 1 (Extremely Unlikely), 2 (Unlikely), 3 (Somewhat Unlikely), 4 (somewhat Likely), 5 (Likely), to 6 (Extremely Likely).

4) How many and which conditions will participants be assigned to?

There are a total of four conditions, and we will be running a 2 (outcome: present v. not present) x (dependent negligence: negligent vs not negligent) between subjects design where participants will be assigned randomly to view different trial summaries detailing each condition.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will conduct an ANOVA to compare the answers given between all four conditions.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will examine scores by plotting them in order to identify any outliers such as data points with z-scores that exceed two standard deviations. We will conduct analyses both with and without any outliers that may occur, and if results differ we will report both analyses.

We will exclude any participants that finish reading the summary and filling out the survey under 1 minute. We will also exclude and participants that do not complete all of our post survey check questions, as well as giving us a detailed answer when we ask them what our survey was about, to show that they took their time and understood the survey.

We will exclude anyone that indicates using the check boxes at the end of the survey that they do not want us to use their responses, anyone that fails the CAPTCHA verification at the beginning of the survey, and anybody that produces strange patterns of results, such as picking the first option in every multiple choice question. All exclusions will be reported.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

We aim to collect approximately 250 participants. This is based on a sensitivity analysis indicating that-with 250 participants-we can detect an effect (f^2) of 0.032.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Nothing else to pre-register.

Appendix C

Study 1 Survey

Information Sheet: Public Opinion About Crime [Approval Number FS2024-70]

Who is conducting this research?

We are a team of researchers in the School of Psychology. Dr Andrew Evelo will be supervising this research. This research has been approved by the Division of Arts, Law, Psychology and Social Sciences Human Research Ethics Committee under delegated authority of The University of Waikato's Human Ethics Committee. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email: alpss-ethics@waikato.ac.nz, postal address: Division of Arts, Law, Psychology and Social Sciences, The University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

What is the purpose of this research?

The purpose of this research is to examine public opinions about gun ownership.

What is involved if you agree to participate?

- You will participate by taking an online survey
- In the survey, you will read a short summary of facts about a gun owner and give your opinion on it.
- We anticipate your total time participating will be 10 minutes.
- We do not anticipate any risks arising from your participation in this study.
- When you have completed the research, you will receive \$1.50 USD.
- For scientific reasons, this information form does not include complete details about the purpose of this research, but you will receive more information after you complete the survey.

What happens to the information that you provide?

- **Confidentiality.** To protect your privacy, we will not collect direct identifying information, such as your name or email. However, we may ask for certain demographic information (e.g., age or gender).
- **Storage.** We will keep proof of your consent and data for at least five years after this research is published, and we may keep them indefinitely. All of this information will be stored on a secure online server.
- **Analysis.** Your responses will be collected and combined with those of other participants. We will then analyze the data and examine the overall patterns of responses.
- **Publication.** The anonymized data and group analyses may be published in various

formats, including journal articles, scholarly presentations, theses, dissertations, and press releases. We may also share the data with related projects or other scholarly professionals.

Voluntary Participation and Withdraw

Participation in this research is entirely voluntary. You are free to withdraw from the study before your participation is complete without giving a reason. At the end of the study, we will provide you with an additional opportunity to withdraw your consent and any other information you have provided. However, due to the anonymous nature of the responses, withdrawing or deleting your information will not be possible after this point.

Contact Information

Research Coordinator	Lead Investigator	Ethics Committee
Sophie Dixon	Andrew J. Evelo	University of Waikato
sd211@students.waikato.ac.nz	andrew.evelo@waikato.ac.nz	alps-ethics@waikato.ac.nz

CONSENT TO PARTICIPATE

I have read and understood the information about this research project. I have had an opportunity to ask questions and have them answered satisfactorily. I understand the purpose of this research, what will happen if I participate, and what will happen to the information I provide. I understand the measures in place to protect my privacy and confidentiality. I understand that I can withdraw my consent before my participation ends, and I do not have to give a reason.

I agree to participate in this research, and I understand that checking (ticking) the box below indicates my consent

- I Consent
- I Do Not Consent

Quality Control Instructions

During this experiment, we ask that you comply with the following study requirements:

- 1)** Please complete the study in a single session, and do not leave the experiment to engage in other tasks. So do not check your mail, look at Facebook, use your mobile phone, get up for a drink, etc. If you need to engage in any tasks, please do so right now before continuing on to the next page.
- 2)** Please do not use your web browser's back or refresh buttons at any point during the experiment.
- 3)** Please complete the experiment in an environment free of noise and distraction. Do not speak to anyone or have anyone near you. Ideally, you would be alone in a quiet room or in a room where other people are quiet (such as a library).

We ask you to follow these instructions to ensure the quality of the information you provide.

Please advance the survey when you are ready.

Demographics:

1. What is your age?

2. Do you identify as:

- A Man
- A Woman
- Non-Binary
- Prefer not to say

3. Which race or ethnicity do you identify most strongly with?

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic
- Native Hawaiian or Other Pacific Islander
- White or Caucasian
- Multiple
- Other

4. Education

- Less than a high school diploma
- High school or equivalent (e.g. GED)
- Some college, no degree
- Associate Degree (e.g. AA, AS)
- Bachelors Degree (e.g. BS, BA)
- Masters Degree (e.g. MS, MA)
- Doctorate or Professional Degree (e.g. MD, JD, DDS, PhD)

Initial Instructions

Directions

We are interested in your assessment of the pros and cons of gun ownership. On the next page, we provide some facts about a gun owner, David Thompson.

Please read the information carefully. We will ask you questions about it later.

You may advance this page when you are ready and the timer reaches zero.

{10 second timer}

Career

David Thompson works as a full-time builder and serves as the site manager at his workplace. He is employed by a local construction company specializing in residential and commercial building projects.

Family Life

David and his wife, Rebecca, divorced when their son Jake was two years old. Since their split, Rebecca has moved across the country to pursue her career. David has sole custody of Jake, who is now 15 years old. Jake is a reserved kid who has struggled with bullying and making friends at school. He frequently gets into fights, leading to weekly trips to the principal's office and several suspensions. At home, Jake is well-behaved, but David is aware of the issues Jake has at school.

Gun Purchase

One day, David decided to buy a gun for their home. He felt that having a firearm would enhance their security and help his family feel safer. He decided to buy a 9mm semi-automatic pistol. David stored the gun in the garage, tucked away in the tool cupboard inside a gun safe.

[[Although the gun is concealed amongst other toolboxes, the safe is not locked / The safe is concealed amongst other toolboxes. It is secured with a combination lock.]]

[[Outcome Condition Only]]

Gun Incident

One morning, Jake took his father's gun from the gun safe in the garage. Feeling overwhelmed by bullying, Jake started taking the weapon to school. Later that week, Jake was involved in a fight in the cafeteria. During the fight, he pulled out the gun and shot a classmate. The classmate died at the scene; several other students were harmed in the panic.

Using the scale below, indicate how much you agree or disagree or disagree with the following statements.

1) David should bear some civil responsibility (that is, he should be found liable and have to pay damages) for any harm that results...

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
a) When he uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) When anyone uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2) David should bear some criminal responsibility (that is, he should be found guilty and have to serve jail time) for any harm that results...

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
a) When he uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) When anyone uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3) Having a gun in the house can be beneficial but can also be dangerous. Gun ownership has many possible consequences. We list some below as they apply to the scenario you just read.

For the list below, please [[ignore the outcome you read about and]] indicate the probability of each outcome occurring.

a) The presence of a gun makes David and Jake feel more secure at home.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

b) David uses the gun to hunt safely without incident.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

c) Jake finds the gun and -- while playing round with it -- he accidentally fires the gun and harms himself.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

d) During cleaning, David accidentally discharges the weapon.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

e) David uses the gun to stop a home invader attempting to burgle the house.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

f) Jake uses the gun to shoot a classmate at school.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

g) Davids wife returns and steals the gun.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

h) David commits suicide with the gun.

- Extremely Unlikely
- Unlikely
- Somewhat Unlikely
- Somewhat Likely
- Likely
- Extremely Likely

4) The scenario you just read was based on recent incidents in the US. [[We told you that the child killed a classmate / We omitted the fact that the son, Jake, killed a classmate]]. In the real cases, parents were charged with negligent homicide.

Negligent homicide is a criminal charge filed against someone who, due to a lack of proper caution or attention, causes the death of another person.

Imagine that you are the judge in the case described. The jury has returned a verdict of 'guilty.' It is your job to sentence the parent. The statute in your jurisdiction indicates that the minimum sentence is one-year prison and the maximum sentence is 25 years in prison.

Below, please pick the most appropriate sentence for the parent, whether you agree with the verdict or not.

Below, please pick the most appropriate sentence for the parent, whether you agree with the verdict or not.



5) Is there anything else you would like to say about this case?

Post survey checks

You may recall that we asked you to follow certain procedures during the survey. Now we want to know if you really followed these procedures. You will be compensated regardless of your response, so please be honest. Thank you for your help.

1. Did you speak with anyone at any time during the study?

- Yes
- No

2. Did you complete the session in a single sitting, without stopping?

- Yes
- No

3. Did you use a search engine at any point during the study to look anything up?

- Yes
- No

4. Did you pause or leave the study to engage in other tasks, even if they were other computer tasks?

- Yes
- No

5. Tell us in 1-2 sentences about what you did in this survey:

6. Is there anything you'd like to tell us about the survey?

Post-study Information

Thank you for participating in our survey. The study is now complete.

Study Information

In this study, you read a piece of fictional writing describing a short summary of facts regarding a father whom was storing a gun in his home that he shares with his 15 year old son.

We were primarily interested in whether people have stronger attitudes towards the negligence of parents owning a gun when they are given the outcome of a series of events, compared to than when they are not. We were also interested in people's attitudes towards secondary liability, particularly in cases involving a child and a parent.

Some read that the father had the gun safe locked with a code, and others read that the gunsafe was not locked. Some were also given the outcome of a gun being accessible in the household, where David's son Jake got hold of the gun and took it to school, resulting in him shooting one of his classmates, leading to their death.

Please do not share this or other information about the study with others who may participate. Doing so may affect the answers that they give. Valid research relies on people behaving naturally.

Voluntary Withdraw

Now that you have a full understanding of this research, please let us know if you would like to contribute or withdraw the data you have provided. Please note that if you say yes, you will not be able to withdraw your data later because we will have no way of identifying which response was yours. If you wish to withdraw your data, you will still receive credit for participating.

- I am happy for you to use my responses
- I would like to withdraw my responses

Results

Currently, we are in the process of analyzing the data and do not have specific results to share with you. However, if you would like to receive the findings of this study, please email the research coordinator below.

Should you have any further questions or concerns regarding the study, please do not hesitate to contact us. Your feedback and input are invaluable to us.

Research Coordinator	Lead Investigator	Ethics Committee
Sophie Dixon	Andrew J. Evelo	University of Waikato
sd211@students.waikato.ac.nz	andrew.evelo@waikato.ac.nz	alps-ethics@waikato.ac.nz

Connect Research Payment

To verify that you have completed this survey and received payment, please save the code below and enter it into Cloud Research.

COMPLETION CODE: 8739C29574

Thank you once again for your participation.
Your responses have been recorded.
You may advance the survey and exit the browser.

Appendix D

Pre-registration for Study 2



Culpable Causation and How It Influences Jury Decision Making (#208055)

Author(s)

This pre-registration is currently anonymous to enable blind peer-review.
It has 2 authors.

Pre-registered on: 01/15/2025 12:48 PM (PT)

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

To what extent does culpable causation affect the culpability judgments of a defendant in a secondary liability case?

3) Describe the key dependent variable(s) specifying how they will be measured.

Participants will fill out a survey that will assess their opinion on the level of culpability of the defendant in their prescribed condition. Survey questions will be in the form of slider scales ranging from 1-25, agreement Likert scales from 1 (Strongly Disagree), 2 (Disagree), 3 (Slightly Disagree), 4 (Slightly Agree), 5 (Agree), to 6 (Strongly Agree), as well as probability Likert scales from 1 (Extremely Unlikely), 2 (Unlikely), 3 (Somewhat Unlikely), 4 (Somewhat Likely), 5 (Likely), to 6 (Extremely Likely).

4) How many and which conditions will participants be assigned to?

There are a total of four conditions, and we will be running a 2 (culpability: drug dealer v. hunter) x (defendant negligence: negligent v. not negligent) between subjects design where participants will be assigned randomly to view different trial summaries detailing each condition.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will conduct an ANOVA to compare the answers given between all four conditions.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will examine scores by plotting them in order to identify any outliers such as data points with z-scores that exceed two standard deviations. We will examine scores by plotting them in order to identify any outliers such as data points with z-scores that exceed two standard deviations. We will conduct analyses both with and without any outliers that may occur, and if results differ we will report both analyses.

We will exclude any participants that finish reading the summary and filling out the survey under 1 minute. We will also exclude participants that do not complete all of our post survey check questions, as well as giving us a detailed answer when we ask them what our survey was about, to show that they took their time and understood the survey.

We will exclude anyone that indicates using the check boxes at the end of the survey that they do not want us to use their responses, anyone that fails the CAPTCHA verification at the beginning of the survey, and anybody that produces strange patterns of results, such as picking the first option in every multiple choice question. All exclusions will be reported.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

We aim to collect approximately 250 participants. This is based on a sensitivity analysis indicating that with 250 participants we can detect an effect (f^2) of 0.032.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Nothing else to pre-register.

Appendix E

Study 2 Survey

Information Sheet: Public Opinion About Crime [Approval Number FS2024-70]

Who is conducting this research?

We are a team of researchers in the School of Psychology. Dr Andrew Evelo will be supervising this research. This research has been approved by the Division of Arts, Law, Psychology and Social Sciences Human Research Ethics Committee under delegated authority of The University of Waikato's Human Ethics Committee. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email: alpss-ethics@waikato.ac.nz, postal address: Division of Arts, Law, Psychology and Social Sciences, The University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

What is the purpose of this research?

The purpose of this research is to examine public opinions about gun ownership.

What is involved if you agree to participate?

- You will participate by taking an online survey
- In the survey, you will read a short summary of facts about a gun owner and give your opinion on it.
- We anticipate your total time participating will be 10 minutes.
- We do not anticipate any risks arising from your participation in this study.
- When you have completed the research, you will receive \$1.50 USD.
- For scientific reasons, this information form does not include complete details about the purpose of this research, but you will receive more information after you complete the survey.

What happens to the information that you provide?

- **Confidentiality.** To protect your privacy, we will not collect direct identifying information, such as your name or email. However, we may ask for certain demographic information (e.g., age or gender).
- **Storage.** We will keep proof of your consent and data for at least five years after this research is published, and we may keep them indefinitely. All of this information will be stored on a secure online server.
- **Analysis.** Your responses will be collected and combined with those of other participants. We will then analyze the data and examine the overall patterns of responses.
- **Publication.** The anonymized data and group analyses may be published in various

formats, including journal articles, scholarly presentations, theses, dissertations, and press releases. We may also share the data with related projects or other scholarly professionals.

Voluntary Participation and Withdraw

Participation in this research is entirely voluntary. You are free to withdraw from the study before your participation is complete without giving a reason. At the end of the study, we will provide you with an additional opportunity to withdraw your consent and any other information you have provided. However, due to the anonymous nature of the responses, withdrawing or deleting your information will not be possible after this point.

Contact Information

Research Coordinator	Lead Investigator	Ethics Committee
Sophie Dixon	Andrew J. Evelo	University of Waikato
sd211@students.waikato.ac.nz	andrew.evelo@waikato.ac.nz	alps-ethics@waikato.ac.nz

CONSENT TO PARTICIPATE

I have read and understood the information about this research project. I have had an opportunity to ask questions and have them answered satisfactorily. I understand the purpose of this research, what will happen if I participate, and what will happen to the information I provide. I understand the measures in place to protect my privacy and confidentiality. I understand that I can withdraw my consent before my participation ends, and I do not have to give a reason.

I agree to participate in this research, and I understand that checking (ticking) the box below indicates my consent

- I Consent
- I Do Not Consent

Quality Control Instructions

During this experiment, we ask that you comply with the following study requirements:

- 1)** Please complete the study in a single session, and do not leave the experiment to engage in other tasks. So do not check your mail, look at Facebook, use your mobile phone, get up for a drink, etc. If you need to engage in any tasks, please do so right now before continuing on to the next page.
- 2)** Please do not use your web browser's back or refresh buttons at any point during the experiment.
- 3)** Please complete the experiment in an environment free of noise and distraction. Do not speak to anyone or have anyone near you. Ideally, you would be alone in a quiet room or in a room where other people are quiet (such as a library).

We ask you to follow these instructions to ensure the quality of the information you provide.

Please advance the survey when you are ready.

Demographics:

1. What is your age?

2. Do you identify as:

- A Man
- A Woman
- Non-Binary
- Prefer not to say

3. Which race or ethnicity do you identify most strongly with?

- American Indian or Alaska Native
- Asian
- Black or African American
- Hispanic
- Native Hawaiian or Other Pacific Islander
- White or Caucasian
- Multiple
- Other

4. Education

- Less than a high school diploma
- High school or equivalent (e.g. GED)
- Some college, no degree
- Associate Degree (e.g. AA, AS)
- Bachelors Degree (e.g. BS, BA)
- Masters Degree (e.g. MS, MA)
- Doctorate or Professional Degree (e.g. MD, JD, DDS, PhD)

Initial Instructions

Directions

We are interested in your assessment of the pros and cons of gun ownership. On the next page, we provide some facts about a gun owner, Michael Reed.

Please read the summary carefully. We will ask you questions about it later.

You may advance this page when you are ready and the timer reaches zero.

{{10 second timer}}

Career

[[Michael Reed is a full-time hunter. He sells his meat to the local butchers and directly to family and friends from his home. He mainly hunts deer to sell venison but also hunts wild pigs for fun]].

[[Michael Reed is a well-known drug dealer in his hometown. He is very successful with his business, which he runs from home, making him a threat to other local dealers and gang members in the area]].

Family Life

Michael and his wife, Stacey, divorced when their son Brad was two years old. Since their split, Stacey has moved across the country to pursue her career. Therefore Michael has sole custody of Brad. Their now 15-year-old son is a high school student. Brad is a reserved kid who has struggled with bullying and making friends at school. He frequently gets into fights, leading to weekly trips to the principal's office or being sent home. Brad is well-behaved at home, but Michael is aware of Brad's issues at school.

Gun Purchase

Michael bought a .44 magnum handgun that he uses for hunting. Michael stores the gun in the garage, tucked away in the tool cupboard inside a gun safe. The gun safe is

concealed amongst other toolboxes, [[but the safe is not locked / and is secured with a combination lock]].

Incident

One morning, [[Brad finds his father's gun in the gun safe in the garage / Brad successfully unlocks his father's gun safe after observing Michael enter the code when he thought no one was watching]]. Feeling overwhelmed by bullying, Brad takes the weapon to school. During a fight in the cafeteria, he pulls out the gun and shoots a classmate, who dies at the scene. Several other students are harmed in the panic.

Sometimes, in incidents like this, there are multiple causes for an event. How much responsibility does the father (Michael) hold for causing the death in this scenario?

Using the scale below, indicate how much you agree or disagree with the following statements.

1) Michael should bear some civil responsibility (that is, he should be found liable and have to pay damages) for any harm that results...

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
a) When he uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) When anyone uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2) Michael should bear some criminal responsibility (that is, he should be found guilty and have to serve jail time) for any harm that results...

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
a) When he uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b) When anyone uses the gun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3) The scenario you just read was based on recent incidents in the US. We told you that the child killed a classmate. In the real cases, parents were charged with negligent homicide.

Negligent homicide is a criminal charge filed against someone who, due to a lack of proper caution or attention, causes the death of another person.

Imagine that you are the judge in the case described. The jury has returned a verdict of 'guilty.' It is your job to sentence the parent. The statute in your jurisdiction indicates

that the minimum sentence is one-year prison and the maximum sentence is 25 years in prison.

Below, please pick the most appropriate sentence for the parent, whether you agree with the verdict or not.



Post survey checks

You may recall that we asked you to follow certain procedures during the survey. Now we want to know if you really followed these procedures. You will be compensated regardless of your response, so please be honest. Thank you for your help.

1. Did you speak with anyone at any time during the study?

- Yes
- No

2. Did you complete the session in a single sitting, without stopping?

- Yes
- No

3. Did you use a search engine at any point during the study to look anything up?

- Yes
- No

4. Did you pause or leave the study to engage in other tasks, even if they were other computer tasks?

- Yes
- No

5. Tell us in 1-2 sentences about what you did in this survey:

6. Is there anything you'd like to tell us about the survey?

Post-study Information

Thank you for participating in our survey. The study is now complete.

Study Information

In this study, you read a piece of fictional writing describing a short summary of facts regarding a father whom was storing a gun in his home that he shares with his 15 year old son.

We were primarily interested in whether people have stronger attitudes towards the negligence of parents owning a gun when the parent has a socially desirable career, versus a less desirable career, making them appear more culpable . We were also interested in people's attitudes towards secondary liability, particularly in cases involving a child and a parent.

Some read that the father had the gun safe locked with a code, and others read that the safe was not locked. Some were also told that the father's job was as a hunter, whereas others were told that the father was a drug dealer.

Please do not share this or other information about the study with others who may participate. Doing so may affect the answers that they give. Valid research relies on people behaving naturally.

Voluntary Withdraw

Now that you have a full understanding of this research, please let us know if you would like to contribute or withdraw the data you have provided. Please note that if you say yes, you will not be able to withdraw your data later because we will have no way of identifying which response was yours. If you wish to withdraw your data, you will still receive credit for participating.

- I am happy for you to use my responses
- I would like to withdraw my responses

Results

Currently, we are in the process of analyzing the data and do not have specific results to share with you. However, if you would like to receive the findings of this study, please email the research coordinator below.

Should you have any further questions or concerns regarding the study, please do not hesitate to contact us. Your feedback and input are invaluable to us.

Research Coordinator	Lead Investigator	Ethics Committee
Sophie Dixon	Andrew J. Evelo	University of Waikato
sd211@students.waikato.ac.nz	andrew.evelo@waikato.ac.nz	alps-ethics@waikato.ac.nz

Connect Research Payment

To verify that you have completed this survey and received payment, please save the code below and enter it into Cloud Research.

COMPLETION CODE: 35E812FE19

Thank you once again for your participation.
Your responses have been recorded.
You may advance the survey and exit the browser.

Appendix F

Ethics approval from the University of Waikato Human Research Ethics Committee

for Study 3

Te Wānanga o Ngā Kete | **Division of Arts,
Law, Psychology & Social Sciences**

The University of Waikato
Private Bag 3105
Hamilton 3240
New Zealand

Te Kura Whatu Oho Mauri
School of Psychology
Dr Oleg Medvedev
Tel: +64 7 837 9212
Email: oleg.medvedev@waikato.ac.nz
www.waikato.ac.nz



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Dr Andrew Evelo

Te Kura Whatu Oho Mauri
School of Psychology

24 June 2024

Dear Andrew

Re: **FS2024-:29 Implicit Gender Bias, Gender Norms, Culpable Causality, Jury Decision Making**

Thank you for submitting your revised application to the ALPSS Human Research Ethics Committee. We have reviewed the final electronic version of your application, and the Committee is now pleased to offer formal approval for your research activities.

We encourage you to contact the committee should issues arise during your data collection, or should you wish to add further research activities or make changes to your project as it unfolds. We wish you all the best with your research. Thank-you for engaging with the process of Ethical Review.

Kind regards,

A handwritten signature in black ink, appearing to be 'Oleg Medvedev'.

Dr Oleg Medvedev, Convenor
Division of Arts, Law, Psychology & Social Sciences Human Research Ethics

Appendix G

Ethics amendment approval from the University of Waikato Human Research Ethics

Committee for Study 3

Te Wānanga o Ngā Kete | **Division of Arts,
Law, Psychology & Social Sciences**

The University of Waikato
Private Bag 3105
Hamilton 3240
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THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Dr Andrew Evelo

Te Kura Whatu Oho Mauri
School of Psychology

18 August 2024

Dear Andrew

Re: **FS2024-:29 Implicit Gender Bias, Gender Norms, Culpable Causality, Jury Decision Making**

Thank you for submitting an amendment to your approved application to the ALPSS Human Research Ethics Committee. We have reviewed your amendment and the Committee is now pleased to offer formal approval for your research activities.

We encourage you to contact the committee should issues arise during your data collection, or should you wish to add further research activities or make changes to your project as it unfolds. We wish you all the best with your research. Thank-you for engaging with the process of Ethical Review.

Kind regards,

A handwritten signature in black ink, appearing to be 'Oleg Medvedev'.

Dr Oleg Medvedev, Convenor
Division of Arts, Law, Psychology & Social Sciences Human Research Ethics

Appendix H

Pre-registration for Study 3



CONFIDENTIAL - FOR PEER-REVIEW ONLY

Implicit Gender Biases and How They Impact Perceived Culpability (#182367)

Created: 07/09/2024 03:56 PM (PT)

This is an anonymized copy (without author names) of the pre-registration. It was created by the author(s) to use during peer-review. A non-anonymized version (containing author names) should be made available by the authors when the work it supports is made public.

1) Have any data been collected for this study already?

No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?

To what extent do gender and social gender norms influence judgements about culpability?

3) Describe the key dependent variable(s) specifying how they will be measured.

Participants will read a trial transcript and then fill out a survey aimed at assessing their opinions about the defendant's culpability. The survey asks seven questions related to blame, negligence, and sentencing of the parties involved.

4) How many and which conditions will participants be assigned to?

We will randomly assign participants to one of four conditions resulting from a 2 (defendant gender: Father vs Mother) × (reason for negligence: affair vs second job).

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

We will conduct an ANOVA to compare the answers given between all four conditions.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will plot the data to visually identify any outliers, calculate z-scores, and examine points exceeding two standard deviations. We will conduct analyses with and without any outliers that may occur, and if results differ, we will report both analyses.

We will exclude any participants:

- who finish reading the trial summary and fill out the survey in under 2 minutes
- who are not able to correctly tell us what our survey was about
- who indicate that they do not want us to use their responses
- who fails the CAPTCHA verification at the beginning of the survey,
- who produces strange patterns of results, such as picking the first option in every multiple-choice question.

All exclusions will be reported.

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the number will be determined.

We aim to collect over 300 participants. This is based on a sensitivity analysis indicating that, with 300 participants, we can detect an effect (f^2) of 0.032 (with an alpha value of .05 and a beta value of .10).

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Nothing else to pre-register.

Appendix I

Study 3 Survey

Information Sheet: Public Opinion About Crime [Approval Number FS2024-:29]

Who is conducting this research?

We are a team of researchers in the School of Psychology. Dr Andrew Evelo will be supervising this research. This research has been approved by the Division of Arts, Law, Psychology and Social Sciences Human Research Ethics Committee under delegated authority of The University of Waikato's Human Ethics Committee. Any questions about the ethical conduct of this research may be sent to the Secretary of the Committee, email: alpss-ethics@waikato.ac.nz, postal address: Division of Arts, Law, Psychology and Social Sciences, The University of Waikato, Te Whare Wananga o Waikato, Private Bag 3105, Hamilton 3240.

What is the purpose of this research?

The purpose of this research is to examine public opinions about crime.

What is involved if you agree to participate?

- You will participate by taking an online survey
- In the survey, you will read a short trial summary about a crime and give your opinion on it.
- We anticipate your total time participating will be about 15 minutes.
- We do not anticipate any risks arising from your participation in this study.
- When you have completed the research, you will receive \$2.00 USD per hour.
- For scientific reasons, this information form does not include complete details about the purpose of this research, but you will receive more information after you complete the survey.

What happens to the information that you provide?

- **Confidentiality.** To protect your privacy, we will not collect direct identifying information, such as your name or email. However, we may ask for certain demographic information (e.g., age or gender).
- **Storage.** We will keep proof of your consent and data for at least five years after this research is published, and we may keep them indefinitely. All of this information will be stored on a secure online server.
- **Analysis.** Your responses will be collected and combined with those of other participants. We will then analyze the data and examine the overall patterns of responses.

• **Publication.** The anonymized data and group analyses may be published in various formats, including journal articles, scholarly presentations, theses, dissertations, and press releases. We may also share the data with related projects or other scholarly professionals.

Voluntary Participation and Withdraw

Participation in this research is entirely voluntary. You are free to withdraw from the study before your participation is complete without giving a reason. At the end of the study, we will provide you with an additional opportunity to withdraw your consent and any other information you have provided. However, due to the anonymous nature of the responses, withdrawing or deleting your information will not be possible after this point.

Contact Information

Research Coordinator	Lead Investigator	Ethics Committee
Sophie Dixon	Andrew J. Evelo	University of Waikato
sophiedixon55@gmail.com	andrew.evelo@waikato.ac.nz	alps-ethics@waikato.ac.nz

CONSENT TO PARTICIPATE

I have read and understood the information about this research project. I have had an opportunity to ask questions and have them answered satisfactorily. I understand the purpose of this research, what will happen if I participate, and what will happen to the information I provide. I understand the measures in place to protect my privacy and confidentiality. I understand that I can withdraw my consent before my participation ends, and I do not have to give a reason.

I agree to participate in this research, and I understand that checking (ticking) the box below indicates my consent

- I Consent
- I Do Not Consent

Quality Control Instructions

During this experiment, we ask that you comply with the following study requirements:

- 1)** Please complete the study in a single session, and do not leave the experiment to engage in other tasks. So do not check your mail, look at Facebook, use your mobile phone, get up for a drink, etc. If you need to engage in any tasks, please do so right now before continuing on to the next page.
- 2)** Please do not use your web browser's back or refresh buttons at any point during the experiment.
- 3)** Please complete the experiment in an environment free of noise and distraction. Do not speak to anyone or have anyone near you. Ideally, you would be alone in a quiet room or in a room where other people are quiet (such as a library).

We ask you to follow these instructions to ensure the quality of the information you provide.

Please advance the survey when you are ready.

Case Summary

Instructions:

Below is the trial summary for [[Paul/Maria]] Harrison.

You may take as long as you wish. **Please read it carefully.** You will not be able to return to this page.

Following the case summary, you're to determine if the defendant, [[Paul/Maria]] Harrison, is guilty of manslaughter.

Key Definitions:

Involuntary Manslaughter is defined as causing the death of another person without the intent to do so and in a manner less culpable than murder.

Negligence is defined as a failure to act or take proper care when there is a duty to do so.

In order to prove criminally negligent manslaughter, the prosecution must show that:

- The defendant had a duty to act to protect others from death.
- The defendant failed to act.
- The death was a foreseeable consequence of this failure to act.

Trial Summary: People v Harrison

Case Details:

[[Paul/Maria]] Harrison is charged with six counts of criminally negligent manslaughter in the first degree for the 2021 deaths of Chris Stark, Wendy Davies, Sarah Matthews, Louise Robinson, Michael Hadley, and Andrew Benson, who were killed in a school-related shooting by [[Paul/Maria]]'s son, Thomas Harrison.

Prosecutors allege that the defendant, as Thomas's primary caregiver, is criminally negligent in these deaths for providing Thomas with a gun and ignoring signs he was potentially violent.

The defense maintains that Thomas is his own person, and he bears the sole responsibility for the deaths in this case. In addition, these deaths were an unforeseeable consequence of the gun purchase.

Evidence related to gun purchase:

Summary of testimony from the defendant [[Paul/Maria]] Harrison

[[Paul/Maria]] testified that [[his/her]] son, Thomas, was interested in first-person shooter video games such as 'Call of Duty'. Thomas also played with airsoft rifles and paintball markers. For Christmas 2020, [[Paul/Maria]] purchased Thomas a gun to keep at home.

Direct testimony from [[Paul/Maria]] Harrison: 'Thomas didn't get out much. He had no friends and spent all his free time playing video games in his bedroom. I thought taking him to a shooting range would have been a good bonding experience or even just an activity for him other than sitting in his room. So, I got a gun license and purchased him a gun from the shooting range under my name.'

The defendant often took Thomas to the firing range after school to shoot targets with the gun. The prosecution produced, as evidence, receipts from the shooting range and security footage of the pair visiting the range regularly. The gun in question was a 9mm Glock G17 handgun. The gun was stored in the home garage but not locked in a safe.

Evidence related to homelife:

Summary of testimony from [[Maria/Paul]] Harrison ([[Paul's Wife/Maria's Husband]], Thomas's Mother):

[[Maria/Paul]] testified that the family's home life was loving, if somewhat chaotic.

Thomas was an only child, born in 2007. When Thomas was born, the family decided that it would be best for [[Maria/Paul]] to go back to work because she had a better-paying job. [[Paul/Maria]] stayed home to be Thomas's primary caretaker. As Thomas grew up, he became increasingly isolated as a young teenager, spending most of his time at home and in his room. His grades began to slip, and he had behavioral problems at school, fighting with other boys. In 2019, he saw a counselor for six months, as requested by the school, for behavioral problems.

His continually lower grades and acting out behavior started to cause problems in their home life, sometimes causing weekly verbal fights between Thomas and his parents. Once in 2020, neighbors called the police due to a domestic disturbance—loud noises, breaking sounds, and screaming---coming from the Harrison household. Thomas had become aggressive and violent towards his parents after they took away his computer game as a consequence of not cleaning his room. Police were able to separate and calm the parties, and no charges were filed.

[[Affair Condition]]

In July of 2021, [[Paul/Maria]] took a job working at The Plumbing Warehouse, often leaving 14-year-old Thomas home alone during the week. It was revealed in court that Paul was hired by [[Linda/Bryan]] Johnson, with whom [[he/she]] was having an affair. The job, which was only part-time, served as cover for the affair, providing [[Paul/Maria]] with excuses for why [[he/she]] had to be out of the house.

[Extra Shifts Condition]

In July of 2021, [[Paul/Maria]] took a job working at The Plumbing Warehouse, often leaving 14-year-old Thomas home alone during the week. It was revealed in court that the family was struggling financially. Paul and Maria could no longer support their household on a single income, so they decided that this course of action was best for the family.

Evidence related to Thomas's Behaviour:

Summary of testimony from Sarah Wilson, Thomas's counselor.

Sarah Wilson testified that, upon meeting Thomas, he appeared to be a very reserved child. He was quiet and had little to say when asked questions. He became irritated and aggressive when pressured for more information on how he felt. Thomas often became frustrated and angry when interacting with adults. In therapy sessions, Thomas would often yell or shout at Miss Wilson and sometimes turn violent, throwing pillows or decorative objects across the room.

Direct testimony from Sarah Wilson: 'I was aware of Thomas's physical aggression

towards his parents. Thomas's overall behaviors and attitude towards his peers led me to believe he was a potential danger to himself or others. I alerted [[Paul/Maria]] Harrison and let [[him/her]] know my concerns about [[his/her]] son. I also informed Thomas's school. After I informed [[Paul/Maria]] of my concerns, [[he/she]] canceled the remaining therapy sessions. I believe that [[he/she]] may have thought that [[he/she]] could handle the issue.'

Thomas was also displaying his aggressive feelings at school. The prosecution produced, as evidence, Thomas's homework sheets he had submitted, covered in drawings consisting of depictions of guns, people getting shot in the head, and phrases such as 'bullets for everybody.'

Evidence regarding the school shooting:

Summary of testimony from Sergeant Darryl Howard, lead investigator:

Sergeant Darryl Howard testified that the shooting took place on the 20th of October 2021, approximately ten months after [[Paul/Maria]] purchased the gun and three months after starting a job at The Plumbing Warehouse.

On the day of the shooting, investigators surmised that Thomas had gone to school with the gun in his backpack, sneaking it out of the garage that morning once his parents had both left the house. At lunchtime, Thomas had positioned himself in the cafeteria preceding the bell and took fire at a crowd of students as they walked through the doors. Six students were shot and three were injured before Thomas was tackled to the ground by a nearby teacher. He was restrained until police arrived.

Sargent Howard also testified that, on the day before the shooting, [[Paul/Maria]] had been summoned by the school for a meeting. Thomas, in a journaling activity, had drawn violent pictures of a person being shot, along with the words 'help me.' The school counselor and principal told [[Paul/Maria]] that Thomas should be immediately taken out of school on medical leave and that he needed urgent counseling or hospitalization. [[Paul/Maria]] resisted taking him out of school because [[he/she]] needed to return to work.

Post-Trial Questions

Directions: Using the scale below, indicate the extent to which you agree or disagree with the following statements.

1. [[Paul/Maria]] should have done more to prevent the school shooting.

- Strongly Disagree
- Disagree
- Slightly Disagree
- Slightly Agree
- Agree
- Strongly Agree

2. [[Paul/Maria]] bears responsibility for the school shooting.

- Strongly Disagree
- Disagree
- Slightly Disagree
- Slightly Agree
- Agree
- Strongly Agree

3. [[Paul/Maria]] was negligent in his duty of care towards the victims.

- Strongly Disagree
- Disagree
- Slightly Disagree
- Slightly Agree
- Agree
- Strongly Agree

4. [[Paul/Maria]] is guilty of manslaughter in the first degree.

- Strongly Disagree
- Disagree
- Slightly Disagree
- Slightly Agree
- Agree
- Strongly Agree

5. There are sometimes multiple sources of blame for a crime. What percentage of blame for the school shooting rests with:

The Father, Paul Harrison?	<input type="text" value="0"/> %
The Mother, Maria Harrison?	<input type="text" value="0"/> %
The perpetrator, Tom?	<input type="text" value="0"/> %
Other factors?	<input type="text" value="0"/> %
Total	<input type="text" value="0"/> %

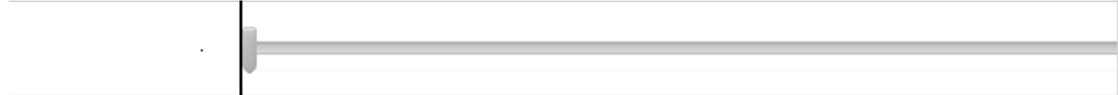
6. Of the parties listed, who should have foreseen the harm caused by Tom?

- a. The Father, Paul Harrison
- b. The Mother, Maria Harrison
- c. School officials
- Other

7. In the case you read, the jury found that [[Paul/Maria]] Harrison was guilty of criminally negligent manslaughter. The statute in that jurisdiction indicates the minimum sentence for this charge is 1 year, and the maximum is 5 years. The defense asked for the minimum stating [[Paul/Maria]] should be sentenced 1 year for each count to be served concurrently (overlapping), for a maximum of 1 year in prison. The prosecution asked for the maximum, asking that [[Paul/Maria]] serve 5 years in jail for each count, served consecutively (one after the other), for a total of 30 years in prison.

If you were the judge in this case, what sentence would you recommend? Sentencing guidelines stipulate you must pick a number between 1-30 years, regardless of if you agree with the jury's verdict or not.

1 4 7 10 13 16 18 21 24 27 30



8. Is there anything else you would like to say about this case?

Post survey checks

You may recall that we asked you to follow certain procedures during the survey. Now we want to know if you really followed these procedures. You will be compensated regardless of your response, so please be honest. Thank you for your help.

1. Did you speak with anyone at any time during the study?

- Yes
- No

2. Did you complete the session in a single sitting, without stopping?

- Yes
- No

3. Did you use a search engine at any point during the study to look anything up?

- Yes
- No

4. Did you pause or leave the study to engage in other tasks, even if they were other computer tasks?

- Yes
- No

5. Tell us in 1-2 sentences about what you did in this survey:

6. Is there anything you'd like to tell us about the survey?

Post-study Information

Thank you for participating in our survey. The study is now complete.

Study Information

In this study, you read a piece of fictional writing describing a short story about a school shooting resulting from the neglect of a child.

We were primarily interested in whether people have stronger attitudes towards one parent's culpability over the others, as well as the circumstances for neglect and whether that had an influence on culpability for the crime. Some read that the father was the primary caregiver and others read that mother was the primary caregiver. We also manipulated the primary cause of neglect to be either an affair or a second job.

Please do not share this or other information about the study with others who may participate. Doing so may affect the answers that they give. Valid research relies on people behaving naturally.

Voluntary Withdraw

Now that you have a full understanding of this research, please let us know if you would like to contribute or withdraw the data you have provided. Please note that if you say yes, you will not be able to withdraw your data later because we will have no way of identifying which response was yours. If you wish to withdraw your data, you will still receive credit for participating.

- I am happy for you to use my responses
- I would like to withdraw my responses

Results

Currently, we are in the process of analyzing the data and do not have specific results to share with you. However, if you would like to receive the findings of this study, please email the research coordinator below.

Should you have any further questions or concerns regarding the study, please do not hesitate to contact us. Your feedback and input are invaluable to us.

Research Coordinator	Lead Investigator	Ethics Committee
Sophie Dixon	Andrew J. Evelo	University of Waikato

sophiedixon55@gmail.com	andrew.evelo@waikato.ac.nz	alps-ethics@waikato.ac.nz
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Connect Research Payment

To verify that you have completed this survey and received payment, please save the code below and enter it into Cloud Research.

COMPLETION CODE: DC4B925464

Thank you once again for your participation.
Your responses have been recorded.
You may advance the survey and exit the browser.