Abstract

The Fifth Amendment provides a critical legal safeguard for criminal defendants, including the right to remain silent during police interrogations and courtroom proceedings. A fundamental protection is that no guilt can be inferred from a defendant's silence. Despite its legal importance, the consequences of invoking this right before a jury remain underexplored. This thesis integrates legal analysis and psychological theories of decision-making to examine how a defendant's silence and gender influence jury judgments. A doctrinal analysis of U.S. case law explained the importance and scope of the right to silence, and an analysis of jury instructions highlighted efforts to mitigate bias. These legal insights informed the construction of a realistic and ecologically valid experimental scenario. Using a 2x2 between-subjects experimental design, participants (N = 357) read a mock case transcript in which the defendant was randomly assigned to be either male or female and either invoked their right to silence in response to a tangential yet potentially incriminating question or denied involvement. Results confirmed the presence of *silence bias*: defendants who invoked their right to remain silent were judged as more guilty and less trustworthy than those who denied the accusation. No gender bias or interaction effects were found. The findings underscore a troubling disconnect between the theoretical promise of the right to silence and its limited protection in courtroom practice. Recommendations for legal reform are discussed to help uphold the rule of law and protect fair trial rights.

Keywords: Fifth Amendment, silence bias, right to silence, legal decision-making, self-incrimination, gender bias

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It is better a hundred guilty persons should escape than one innocent person should suffer.

—Benjamin Franklin

Introduction

Imagine a courtroom. A defendant, Ms. Baker, stands accused of embezzlement. During cross-examination, the prosecutor asks whether she has ever exchanged private communications with a colleague recently convicted of computer fraud. Ms. Baker pauses and weighs her options. The question is incriminating by implication—although unrelated to the charge, it could raise suspicion about her moral character. To avoid misleading the court, she invokes her Fifth Amendment right. In doing so, she protects herself legally, but it may have cast doubt on her innocence in the eyes of the jury.

This scenario highlights a troubling occurrence of silence bias in juror decision-making: defendants who invoke their constitutional right to remain silent may be perceived as less trustworthy or more guilty, even when no additional evidence of wrongdoing is presented (Hendrick & Shaffer, 1975). While the law aims to ensure fairness and predictability through principles such as the right to a fair trial and the right to remain silent, legal decision-makers—judges, jurors, and lawyers—are human and susceptible to cognitive biases that can undermine objectivity (Kahneman, 2011). As a result, extralegal factors may influence courtroom decisions.

Perceptions of guilt and trustworthiness may also be shaped by characteristics of the defendant, such as their gender. Women tend to receive more lenient treatment in court (Bontrages et al., 2013), possibly due to pervasive gender stereotypes that portray them as warmer (Ebert et al., 2014) and more communal (Eagly et al., 2020). In this case, if the

defendant were male—Mr. Baker—his choice to remain silent could have elicited even stronger suspicions from the jury.

The right to remain silent is a fundamental legal protection recognized in 108 jurisdictions worldwide, including the UK, the U.S., and many EU countries (Law Library of Congress, 2016). In the United States, this right is grounded in the Fifth Amendment's privilege against self-incrimination, allowing defendants to lawfully refuse to answer questions at trial (Miller, 2022). Although some critics argue that these rights favor the obstruction of truth (Alschuler, 2017), they primarily aim to protect defendants from coercion and prevent false or hasty statements made under stress (Kassin et al., 2020). This protection is important, as false confessions—where innocent individuals admit to crimes they did not commit—have contributed to approximately 18% of the 253 currently known wrongful convictions in the United States (Innocence Project, n.d.). Beyond its practical value, upholding the right to silence is essential for ensuring legal certainty and maintaining core principles such as the rule of law and the protection against self-incrimination.

A key legal principle underlying the right to silence is that a defendant's choice to remain silent cannot be used as evidence of guilt, as established in *Griffin v. California* (1965). Yet, there is evidence that invoking this right during trial can enhance the jury's perception of the defendant's guilt and lower their perceived morality (Hendrick & Shaffer, 1975). Legal scholars have examined the limitations of this right, noting the public's lack of knowledge on when and how to invoke it (Mclin, 2016; Sommers & Weisburd, 2024), and its limited protection during noncustodial interrogations (Maoz, 2012). Nevertheless, the effects of invoking the right on the jurors' judgments remain scarcely researched.

The Current Study

This thesis empirically investigates the legal protection afforded by the Fifth Amendment right to remain silent at trial, focusing on whether jurors exhibit bias against defendants who invoke this right despite jury instructions prohibiting inferences of guilt. By integrating legal analysis with psychological theory, this randomized controlled study uses a mock trial where an innocent defendant pleads the Fifth to an incriminating but tangential question, offering a robust test of how legal protections operate in practice. Additionally, this study examines whether this bias is more pronounced for male or female defendants, considering prevailing stereotypes about credibility and guilt. Thus, this thesis investigates how a defendant's gender and invocation of the Fifth Amendment right affect juror perceptions of trustworthiness and guilt.

Relevance

Societal Relevance

This study carries significant societal implications by examining whether jurors uphold the right to silence, revealing the true protection this legal right—and the legal system—provides. Evidence of such bias would require a reconsideration of the right's protection and research to mitigate this bias. Second, by examining gender stereotypes, this study explores whether certain populations are disproportionately affected by the bias. The mock case examined involves embezzlement, a crime affecting 74% of organizations and costing around 1 trillion USD annually (Linder, 2025). Overall, evaluating how legal rights function in practice and developing measures to address courtroom bias is crucial for ensuring a fair justice system for all.

Academic Relevance

This study addresses a significant gap in the existing literature, as contemporary empirical research on silence bias—the tendency for jurors to negatively evaluate defendants who invoke their Fifth Amendment right—is notably scarce. While the foundational work by Shaffer and colleagues in the 1980s demonstrates this bias, it relied on simplified trial scenarios that omitted key procedural elements such as preliminary jury instructions. The present research, informed by legal analysis, offers a more ecologically valid test, incorporating both the actual preliminary and closing jury instructions and a legally plausible context for an innocent person to lawfully invoke their Fifth Amendment right. Notably, this study is the first to examine the role of defendant gender in silence bias.

Interdisciplinarity

This thesis adopts an interdisciplinary approach by integrating doctrinal legal analysis with empirical psychological research. Analyzing U.S. legal precedents provides doctrinal insight into the scope and application of the right to remain silent. In addition, examining model jury instruction aims to elucidate the legal system's assumptions about silence bias and its efforts to regulate juror perceptions. These legal analyses inform the ecological validity of the experimental design, by clarifying when a defendant may lawfully invoke their Fifth Amendment right and what procedural guidelines, such as jury instructions, are typically provided. Psychological research complements this legal foundation by empirically investigating jurors' decision-making, emphasizing the role of human judgment in trial outcomes. These interdisciplinary insights inform recommendations for legal reform to ensure that the law aligns with empirical insights about silence bias.

Research Question

This study focuses on the main research question: *How do a defendant's invocation of the right to silence and their gender influence juror judgments of guilt and trustworthiness, despite the legal system's formal efforts to safeguard this right?*

To answer the main research question, several sub-questions will be addressed:

1) What is the effect of a defendant's silence on jury judgments?
2) How does a defendant's gender influence juror judgments, and does it interact with the effect of silence?
3) How does the U.S. legal system seek to regulate juror perceptions of silence?

The third subquestion is addressed via a doctrinal analysis of model jury instructions in the upcoming section. The first two subquestions are examined empirically in the subsequent experimental study.

Legal Framework: The Right to Silence

Historical Significance: The Fifth Amendment to Protect the Innocent

The privilege against self-incrimination is recognized as a core protection in many Western democracies (Redmayne, 2007). In the United States, this protection is grounded in the Fifth Amendment, which grants several essential legal rights to defendants in criminal proceedings, including that: "No person shall […] be compelled in any criminal case to be a witness against himself," (U.S. Const. amend. V). This includes the right to remain silent, allowing individuals to refuse to answer questions during police interrogations and criminal trials (Legal Information Institute, n.d.). This right helps preserve the presumption of innocence by ensuring that defendants are not responsible for proving their innocence, shifting the burden of proof on the prosecution (Kassin et al., 2020).

The practical implementation of the right to silence is rooted in Anglo-American common law and precedent. The key principle that no inference of guilt may be drawn from a defendant's decision to remain silent was established in *Griffin v. California* (1965), where the U.S. Supreme Court ruled that an adverse comment on Griffin's decision not to testify violated the Fifth Amendment. Procedural safeguards were further solidified in the landmark case *Miranda v. Arizona* (1966), where Ernesto Miranda was interrogated for two hours without being informed of his constitutional rights, leading to a signed confession that was used to convict him. However, the Supreme Court ruled that confessions obtained without informing suspects of their Miranda rights—which include the right to silence—violate the Fifth Amendment and are inadmissible in court. This case affirmed the Fifth Amendment's role in protecting the accused from coercion and abuse of power by the government or the prosecution in modern interrogation tactics to elicit confessions (Kassin & Gudjonsson, 2004; Mansour, 2015).

Furthermore, the right to remain silent serves to protect the innocent. In *Ohio v. Reiner* (2001), Matthew Reiner was accused of killing his son. The defense instead accused Susan Batt, the babysitter, who resorted to her Fifth Amendment right to remain silent. The U.S. Supreme Court affirmed Batt's right to remain silent, stating that a witness needs only a reasonable concern of self-incrimination, not actual guilt, to assert the right to silence. The case shows that an innocent person may risk having their words misrepresented and used against them, thus requiring the Fifth Amendment's protection. In high-pressure criminal trials—where coercive tactics can prompt hasty or ambiguous statements taken out of context—the right to silence is key for allowing individuals to respond thoughtfully and avoid self-incrimination.

While the Fifth Amendment offers broad protection against self-incrimination, important limitations exist regarding when the right to silence can be invoked. In *Brown v. United States*

(1958), the Supreme Court ruled that a defendant who voluntarily takes the stand and testifies waives their right to silence during cross-examination on topics made directly relevant by their testimony. Thus, the defendant may not selectively refuse to answer follow-up questions on topics they have already addressed. However, the privilege still applies to questions that could further incriminate them in other, less related offenses.

Overall, the cases reviewed illustrate that the right to silence, as guaranteed by the Fifth Amendment, remains a vital constitutional safeguard for ensuring fair trial procedures and deterring coercive misconduct—even as its application involves certain legal nuances. These precedents provide important legal context, informing the design of a lawful empirical investigation into how jurors respond to a defendant's silence.

Jury Instructions

The jury—a group of ordinary adult citizens—is empowered to render verdicts in many Anglo-American jurisdictions. The judge makes important decisions—ruling on admissible evidence and instructing the jury—the jury ultimately evaluates the facts (Legal Information Institute, 2022). In the United States, the Sixth Amendment guarantees the right to a jury trial, empowering ordinary citizens to participate in the democratic process (Aspen, n.d.; U.S. Const. amend. VI). The jury consists of 12 members, randomly selected from a jury panel and questioned to determine potential unfitness, such as strong bias (Legal Information Institute, 2022). At the end of a trial, jurors deliberate together to deliver a final verdict. Thus, jury decisions are key to the outcome of a trial.

Jury instructions guide jurors in making legally grounded decisions by explaining legal standards. These instructions can vary significantly across different U.S. federal circuits, which oversee several district courts. The Ninth Circuit is particularly relevant for analysis because its

jurisdiction includes several influential states such as Washington, Arizona, and California, and it has the highest number of active judgeships (Federal Judicial Center, n.d.). Thus, studying its model jury instructions is particularly important in understanding how legal principles, such as the right to silence, are communicated to jurors.

The *Manual of Model Criminal Jury Instructions for the District Courts of the Ninth Circuit* (Ninth Circuit Jury Instructions Committee [NCJIC], 2022) provides preliminary and closing instructions to guide jurors. In the preliminary instructions, the judge introduces fundamental legal principles, including the jurors' duties, the definition of evidence and objections, and how to assess witness credibility. In Instruction 1.1, the judge underlines the jury's duty to "apply the law as I give it to you, whether you agree with the law or not" and to "[p]erform these duties fairly and impartially" (NCJIC, 2022, p. 2). The topic of bias is further elaborated on in this instruction by listing the features the jury should not be influenced by, including race, gender, economic circumstances, and personal attitudes such as sympathy and prejudice. This reflects an institutional awareness of cognitive biases and an effort to reduce their impact through explicit instructions to remain impartial.

The Manual addresses the defendant's right to silence under Instruction 1.2, affirming the presumption of innocence (NCJIC, 2022). The jury is informed that "the defendant has the right to remain silent and never has to prove innocence or present any evidence" (NCJIC, 2022, p. 4). However, while affirming the legal protection against self-incrimination, the instructions do not directly inform the jury that guilt can not be inferred from a defendant's silence. This gap in the preliminary instructions may allow for misunderstandings.

The closing instructions repeat key legal principles but also introduce more detailed information. The importance of impartiality and the presumption of the defendant's innocence is

reaffirmed. If a defendant invokes their right to silence during the trial, Instruction 6.3 is given, specifying: "A defendant in a criminal case has a constitutional right not to testify. In arriving at your verdict, the law prohibits you from considering in any manner that the defendant did not testify" (NCJIC, 2022, p. 113). Furthermore, the closing instructions specify the charge and the elements that must be proved. Thus, while the Ninth Circuit's model jury instructions aim to uphold the defendant's right to silence, the judge's direct instruction not to infer guilt from silence is typically only given at the end of the trial once the jurors may have already formed an opinion. In all, however, the legal standards strictly inform the jury to remain impartial and to refrain from inferring guilt from silence.

Literature Review: The Psychology of Legal Decision-Making

While the Fifth Amendment asserts the right to silence, its full protection depends on how jurors interpret and apply this right in practice. Despite attempts to safeguard the right in established legal precedent and comprehensive jury instructions, jurors remain human decision-makers subject to cognitive biases and influences. Understanding the psychological processes underlying jury behavior—a topic often overlooked in pure legal theory—is therefore central to evaluating the effectiveness of the right to silence. The following part will examine psychological research on the general issue of jury bias.

Jury Bias

Jury decision-making is fundamental to the integrity of the criminal justice system. However, empirical studies suggest that jurors may not always apply the law impartially. Tasked with the demanding duty of learning the legal principles through jury instructions, assessing evidence, and deciding on verdicts with serious implications, ordinary citizens may resort to mental shortcuts. The dual process model, introduced by Kahneman (2011) distinguishes

between two systems of processing information: a slow and deliberate System 2, and a fast, intuitive System 1, which often relies on heuristics. In the courtroom context, especially under conditions of low confidence or high cognitive load brought by the required complicated judgments, jurors may resort to fast peripheral processing—a tendency also described by the Elaboration Likelihood Model (Petty & Cacioppo, 1986). This may, hence, increase susceptibility to bias.

Although dual-process theories offer a useful framework for understanding jury cognition—balancing intuitive judgments and analytical reasoning—some argue its structure oversimplifies decision-making. Melnikoff and Bargh (2018) argued that the strict binary division does not reflect the dynamic and complex processing in real-life situations.

Expanding beyond cognitive models, insights from neuroscience provide a more nuanced account of decision-making. The Memory Systems Model (Amodio, 2019) distinguishes between multiple forms of learning that vary in their level of consciousness and are expressed through different channels—some shaping affective responses, others guiding declarative judgments. This framework underscores the complexity behind juror decision-making, emphasizing that memory systems interact in shaping judgments—verdicts may draw on both conceptual principles, stereotypes, and affective evaluations of the defendant—but may exert different weights on specific outcomes.

Empirical evidence shows that jurors may rely on extralegal factors—characteristics unrelated to the legal facts of the case—when forming verdicts. For instance, jurors may rely on pre-trial publicity (Hope et al., 2004), fall victim to representativeness bias by focusing disproportionately on salient or stereotypical traits (Bornstein & Greene, 2011), or show greater leniency to defendants who appear to share their attitudes—particularly among jurors high in

authoritarianism (Mitchell & Donn, 1973). Emotional states further shape how evidence is processed (Feigenson, 2010). Meta-analyses confirm that personal characteristics of the defendant such as lower socioeconomic status or a prior criminal record contribute to them being judged guilty (Devine & Caughlin, 2014); furthermore, numerous studies document systemic racial bias (Levinson & Young, 2010; Mitchell et al., 2005), especially when evidence is ambiguous or inadmissible (Johnson et al., 1995). These findings demonstrate the persistent influence of extralegal factors that challenge legal impartiality, prompting more research on juror bias.

Attempts to mitigate biases, such as through direct jury instructions, have shown limited success. For instance, jurors continued to be influenced by inadmissible evidence despite being instructed to disregard it (Steblay et al., 2006). Jurors may be unwilling to follow legal instructions because they see inadmissible evidence as 'truthful', or may not even be aware of such bias (Thompson et al., 1981). As Curley et al. (2022) emphasize, jury biases are multi-layered, highlighting the need for more nuanced and realistic studies on how biases interact to improve mitigation efforts.

Building on this broader literature, the following section focuses on a specific type of personal bias—the influence of the defendant's gender on jury decision-making. Later, the phenomenon of silence bias, particularly relevant to interrogation contexts, will be discussed.

Jury Bias: Gender

Gender bias in the courtroom is often rooted in pervasive gender stereotypes—widely held beliefs about the typical traits and roles of men and women (Eagly et al., 2020). While not necessarily accurate, these stereotypes may shape how jurors perceive a defendant. According to Social Role Theory (Eagly & Steffen, 1984; Eagly & Wood, 2012), such stereotypes arise from

observed gendered divisions of labor, which become internalized over time and reinforce gender-based expectations across generations. Building on this, the model of Gender Segregation (Croft et al., 2015) highlights that while early sex-based divisions of labor may have biological roots—such as childbirth for women and physically demanding jobs for men—changing societal structures (e.g., birth control, remote work) have diminished their relevance. Nevertheless, initial biological differences remain societally amplified—especially in individualistic cultures that emphasize group distinctions (Block et al., 2025).

Empirical research further supports these theories. Women continue to be increasingly perceived as more communal—honest, compassionate, generous—and less agentic—ambitious, competitive—than men, while also starting to be seen as more competent (Eagly et al., 2020). These findings align with the Stereotype Content Model (Fiske et al., 2007), which describes group perceptions along dimensions of warmth and competence. Implicit association studies further show that women are consistently perceived as warmer than men (Ebert et al., 2014).

These generalized gendered perceptions can carry over into the legal context, influencing expectations about criminal behavior. Focal Concerns Theory suggests that men are often associated with dominance, autonomy, and status concerns while women are perceived in connection to nurturant role obligations and moral virtue (Steffensmeier et al., 2013). Together, these assumptions contribute to a perceived disconnect between femininity and criminality, which may lead jurors to unconsciously perceive female defendants as more trustworthy and less likely to commit crimes.

Indeed, a meta-analysis by Daly & Bordt (1995) found that women were often favored in court, especially during felony offenses and decisions about incarceration. A newer meta-analysis reports a decline in gender bias but similarly reports that women receive more

lenient sentences compared to men (Bontrages et al., 2013). Pozzulo et al. (2010) found that in a mock sexual assault trial with identical case facts, male defendants were rated as more guilty than female defendants. Similar gendered patterns were consistently found in cases of sexual offense (Rogers & Davies, 2007), child trafficking (Pica et al., 2023), sex trafficking (Stevens et al., 2022), and partner homicide (Ruva et al., 2023). Hence, research strongly points to the issue of gender bias in courtroom decisions—though most evidence comes from cases of sexual character.

Embezzlement and financial crime are often associated with traditionally male traits such as competitiveness, dominance, and the pursuit of material gain (Steffensmeier et al., 2013). Sentencing data showed that all-male groups accounted for 50% of corporate fraud cases, and women were most often involved through a connection to a primary male co-conspirator. While it may seem reasonable that men receive harsher sentences given their statistically higher rates of offending and longer criminal records, Doerner and Demuth's (2014) analysis of U.S. sentencing data found that women received more lenient sentences than men even after controlling for the legal factors. This suggests that gender stereotypes influence judicial outcomes beyond gender-based differences, potentially shaping perceptions of financial crimes as well.

In sum, research suggests that gender stereotypes—particularly those portraying women as warmer and less agentic—can shape jurors' perceptions of credibility and culpability. Gender bias appears especially pronounced in sexual offenses; however, less is known about how such bias operates in financial cases, or how it interacts with additional biases, such as reactions to a defendant's silence in interrogation contexts—a phenomenon explored in the next section. While few studies have examined silence bias specifically, several psychological theories from related fields may help explain it.

Jury Bias: Silence

The right to silence, while legally protected, appears psychologically linked to perceptions of guilt. One explanation stems from humans' inherent discomfort with uncertainty, missing information, and those who withhold it from us. According to Loewenstein's Information Gap Theory (1994), people exhibit a strong drive for cognitive closure when aware of an information gap. These gaps attract attention and evoke emotions like frustration (Golman & Loewenstein, 2018). This drive for closure extends to unpleasant content, as research on morbid curiosity shows that individuals often prefer to resolve uncertainty by seeking out negative and disturbing content (Oosterwijk et al., 2020), motivated by curiosity and knowledge-seeking (Vivanco Carlevari et al., 2025). Altman and Taylor's Theory of Social Penetration (John et al., 2016) further shows that self-disclosure fosters interpersonal closeness and trust, while people who withhold information are seen as less trustworthy. Thus, in the courtroom, a defendant's silence may not only create a frustrating information gap but also weaken perceived trustworthiness and a sense of personal connection, leading jurors to infer guilt.

Balance Theory (Shaffer & Case, 1982) can provide an alternative explanation for this cognitive conflict. It suggests that jurors—who already view criminal acts negatively—may perceive a silent defendant as connected to potentially incriminating information, since their withholding obstructs the path to truth. To restore the cognitive balance, jurors adjust their evaluation of the defendant to be more negative, despite explicit judicial instructions.

In addition to discomfort caused by withheld information, silence may also conflict with jurors' expectations of how innocent individuals behave. Schema theory explains that individuals' past experiences shape their mental framework, which guides how they interpret

novel information (Seel, 2012; Wagoner, 2013). From personal experience or observation that innocence leads to self-defense because there is “nothing to hide”, a schema can form that ‘innocent people speak up’. This schema may also align with the belief in a just world, the assumption that justice always prevails and good people are rewarded (Lawrence et al., 2024), which may lead jurors to expect defendants to answer truthfully regardless of the question. As a result, jurors may overlook valid reasons for silence, such as fear of misspeaking under pressure, being misunderstood, or having their words misrepresented against them, and instead associate silence with guilt.

Together, these different theories suggest that a defendant’s silence violates jurors’ social, emotional, and cognitive expectations—triggering negative affect, lowered trust, and intuitive guilt inferences that bias decision-making.

A few dated studies by Shaffer and colleagues demonstrated the silence bias—invoking the right to silence increases jurors’ perceptions of the defendant’s guilt and diminished trustworthiness. Hendrick and Shaffer (1975) found that pleading the Fifth (versus denying) in response to a question about either one’s own guilt or another’s involvement led to lower ratings of the defendant’s moral character and higher perceptions of guilt. This bias persisted even when silence was recommended by an attorney rather than chosen independently (Shaffer & Sadowski, 1979). The wording also mattered; the more deliberate the defendant appeared in withholding information, the higher the perceived guilt—an effect not mediated by the personality perceptions of the defendant (Shaffer et al., 1978). Similarly, pleading the Fifth to a crime-irrelevant question only lowered positive character perceptions without increasing guilt perceptions (Shaffer et al., 1979). These studies show that silence affects guilt and character perceptions in related but distinct ways, with factors like question relevance also playing a role.

The present study therefore examines the effects of silence on both guilt and trustworthiness to provide a more comprehensive assessment of its impact on juror decision-making.

Silence bias appears to interact with other social biases. Clary and Shaffer (1980) found that defendants without a prior record were found less guilty than those with records—unless they invoked their right to silence. Confidence in guilt judgments was highest when the defendant had a prior criminal record for a similar crime and pleaded the Fifth (Clary & Shaffer, 1985). Similarly, Bellin (2018) found that defendants refusing to take the stand and having a prior record increased guilt judgments in both a small experimental study and an analysis of real sentencing data; however, both only relied on descriptive statistics. These findings suggest that silence bias may interact with biases like prior records; nevertheless, no research has tested its interaction with defendant gender.

In summary, prior research brings attention to the insufficient protection of the right to silence, which by its invocation implies guilt. Nevertheless, this body of work lacks important aspects of legal realism—such as the influence of jury instructions, which were only included in three studies and mostly limited to brief closing remarks. Moreover, Shaffer's studies rely on scenarios where defendants plead the Fifth in a situation potentially problematic under *Brown v. United States* (1958), which suggests that the right cannot be selectively invoked on topics already addressed. Furthermore, an open question remains whether jurors are consciously aware of this bias or if it operates implicitly in their judgment—an issue my study considers in an exploratory manner.

More recent studies investigated a similar effect during police interrogations. Generally, criminal suspects who invoked their right to remain silent, as opposed to waiving their Miranda rights and speaking to the police, were perceived as more negatively and guilty (Lawrence et al.,

2024). Sukumar and Kassin (2017, as cited in Kassin et al., 2020) similarly found increased guilt perceptions, even when participants were reminded of these rights. Although the context differs, these findings underscore the need for further research on silence bias.

Hypotheses

H1: Main Effect of Silence (Sub-Question 1)

Building on the work by Shaffer and colleagues (Hendrick & Shaffer, 1975; Shaffer & Sadowski, 1979), and the more recent work on police interrogations (Lawrence et al., 2024), I hypothesize that invoking the right to silence will increase jurors' perceptions of guilt and reduce their judgments of the defendant's trustworthiness.

H2: Main Effect of Defendant's Gender (Sub-Question 2)

Given prior research on more lenient sentencing of women in cases of sexual assault (Pozzulo et al., 2010), persisting stereotypes of women as more warm and communal, and overrepresentation of men in corporate fraud (Steffensmeier et al., 2013), I theorize gender bias will extend to financial crime. Thus, I hypothesize that female defendants will be judged as less guilty and more trustworthy than male defendants.

H3: Interaction Effect (Sub-Question 2)

Building on research by Clary and Shaffer (1985), which suggests that silence bias interacts with bias against individuals with a prior criminal record—leading to the highest judgments of guilt—as well as broader research on interacting jury biases (Curley et al., 2022), I hypothesize that the silence bias will disproportionately affect male defendants. Specifically, I hypothesize that male defendants who plead the Fifth will be perceived as the most guilty and least trustworthy, while women who respond with denial will receive the most lenient judgments.

Methodology

Sample

Ethics approval was obtained at the University of Amsterdam before participant sampling. The current study used a convenience sampling strategy (friends and acquaintances; n = 221) and recruited additional participants via SurveySwap (n = 136). The data were collected through Qualtrics. As with jury eligibility, inclusion criteria were age (at least 18 years old), and also English-level proficiency. An a priori power analysis was conducted using G*Power version 3.1.9.7 to estimate the necessary sample size (Faul et al., 2009). While older studies report large effects for silence—Cohen's f = .49, .58 (Shaffer et al., 1979), related newer studies examining suspects invoking their Miranda protection during police questioning report small-to-moderate effects (Lawrence et al., 2024). Additionally, research on defendant gender differences in jury guilt ratings reports small effect sizes (Pozzulo et al., 2010). Based on this, the power analysis was calculated using Cohen's f = 0.15, estimating a small interaction effect between silence and gender. The calculated sample size for $\alpha = .05$ and power = .80 was 351 participants.

After applying the exclusion criteria, the final sample size was N = 357, which met the required power threshold (post hoc power = .81). Participants were excluded due to failing the attention check (n = 18) or any of the four manipulation checks (n = 82), and not fully completing the survey (n = 145). 204 participants were female (57.1%), 150 were male (42.0%), one was non-binary (0.28%), and two preferred not to disclose their gender (0.56%). The age of participants ranged from 18 to 76 years old. The mean age was 27.65 years (*SD* = 10.76), the median was 23 and the most common age was 21. The participants came from 56 different cultures with the most common being Dutch (n = 80, 22.4%), US-American (n = 36, 10.1%), and German (n = 31, 8.7%). Most identified with European cultures (n = 246, 68.9%).

Design

This study employs a 2x2 factorial between-subjects design randomized controlled design. The primary goal was to assess both the main effects and the interaction. The first independent variable was the defendant's use of their right to remain silent, with two conditions: denial (not invoking the right) versus pleading the Fifth (invoking the right). The second independent variable was the defendant's gender with two conditions: female versus male. Participants were randomly assigned to the conditions via the online platform.

The dependent variable was the participants' guilt judgment of the defendant. Additionally, two exploratory dependent variables were examined: the perceived trustworthiness of the defendant and the type of information participants relied on when making their guilt judgments.

Materials

The experiment used Qualtrics as an online platform to present the experimental materials. Preliminary and closing jury instructions were adapted from the actual instructions provided to juries by the judge in the Ninth Circuit (NCJIC, 2022). Given their length, they were modified by omitting sections in brackets and any procedural details unrelated to the study, including jury questioning and deliberation procedures. Importantly, the instructions included directives not to base judgments on personal characteristics and an explanation of the Fifth Amendment right, as outlined in the legal analysis. The complete set of instructions used is provided in Appendices A and B.

Mock Jury Criminal Case

The mock case presented to the participants was based on Hendrick and Shaffer (1975). This was a brief testimony—approximately 400 words—detailing the defendant who was

charged with the unlawful embezzlement of funds from a bank where they were employed. The case was updated with more modern language, such as replacing "ledgers" with "financial documents" and "bookkeeping" with "falsifying these records". Also, the original phrasing of the defendant's invocation of the Fifth Amendment right, "I prefer to take the fifth amendment," was revised to "I invoke my Fifth Amendment right" to enhance clarity and reflect unambiguous legal language (Sommers & Weisburd, 2024), without changing the substantive meaning of the statement. A brief dialogue about a former colleague was added to incorporate a novel manipulation of the Fifth Amendment (see more in the subsection below). As a result, several lines from the original transcript were removed to streamline the case. Please see the full case transcript in Appendix C.

Defendant's Response

Participants were randomly assigned to one of two conditions of the case transcript: denial—as the control condition—or invoking the Fifth Amendment (silence). In both conditions, the prosecutor questioned the defendant about a former colleague who was convicted of falsifying transaction logs. The prosecutor then asked the defendant directly whether they had ever exchanged any private communications with the former colleague outside of work channels.

In the control condition, the defendant denied involvement, responding "No, absolutely not." In the experimental condition, the defendant invoked their lawful right to remain silent to the potentially incriminating but tangential question, stating, "I invoke my Fifth Amendment right. Therefore, I decline to answer this question." This revised manipulation addresses a legal concern present in the original design, where the defendant pleaded the Fifth to a final accusatory question after having already answered related questions—potentially problematic under *Brown v. United States* (1958), which limits selective invocation of the Fifth to directly relevant matters.

In this study, the final accusatory question remained in the transcript, but in all cases, the defendant responded with, “No, I certainly did not.”

Gender of the Defendant

Participants were randomly assigned to read a transcript with a female or male defendant. The defendant’s gender was manipulated by changing the defendant’s name in the transcript and the dependent variable questions (Jane/John and Ms./Mr. Baker) following Rogers and Davies (2007). Both names are common English names and the last name is a profession practiced by both genders. Based on pre-testing, which revealed that many participants were not aware of the defendant’s gender and defaulted to assuming a male defendant, an introductory sentence was added at the beginning of the trial to clarify: “[t]his is the trial of a man/woman named John/Jane Baker who is accused of embezzling funds from the bank where he/she is employed” following Ruva et al. (2023). The full name and the shortened “Ms./Mr. Baker” appeared three and five times, respectively, in the case transcript. To avoid introducing racial or other visual biases, no images of the defendant were included.

Guilt

The dependent variable of guilt was operationalized using a single-item Likert scale (Pozzulo et al., 2010). The participants were asked to rate the defendant’s guilt of the defendant, Jane/John Baker, on a scale from 0 (*Not at all guilty*) to 100 (*Absolutely guilty*). A continuous scale was chosen to allow for greater sensitivity in the data, as a dichotomous verdict may obscure nuanced variations in the participants’ judgment.

Trustworthiness

The perceived trustworthiness of the defendant was measured using the “Trustworthiness” subscale of the “Witness Credibility Scale” (WCS), developed by Brodsky et

al. (2010). The wording was adapted to refer to the defendant. This subscale consists of five paired adjective items (e.g. dishonest versus honest), rated on a bipolar 10-point Likert scale ranging from 1 (endorsement of the negative trait) to 10 (endorsement of the positive trait). To minimize order effects, the five trustworthiness items were presented in randomized order. The subscale shows strong internal consistency ($\alpha = .93$; Brodsky et al., 2010), making it suitable for the current study.

Reliance on Information

A novel exploratory dependent variable was developed for this study to measure the extent to which participants relied on different sections of the transcript when forming their judgment of guilt. Participants rated the extent to which they relied on seven pieces of information using a continuous scale from 0 (*Not at all*) to 100 (*Very much*). Sample items included "the defendant's job and access to financial records" and "the defendant's language use". Key items of interest included "the defendant's gender" and their response to the critical question about information exchanged with the convicted former colleague, in which the defendant pleaded the Fifth in the experimental condition. This variable aimed to explore whether participants explicitly recognized their use of extralegal information or whether this processing was implicit—an aspect not covered in prior research.

Procedure

Participants first provided informed consent to participate in the study. After completing basic demographic information, they read the preliminary jury instructions, followed by the case transcript to which they were randomly assigned. Participants then reviewed the closing instructions before filling out the dependent variable measures. An attention check ("Please select '100' to show you're paying attention") was included to ensure participants were attentive.

Additionally, four manipulation checks were administered: regarding the content of the preliminary instructions, the defendant's gender, the charge, and whether the defendant had answered all the questions.

Statistical Analysis and Assumption Checks

The data were analyzed using SPSS Version 29.0.2 with a MANOVA, followed by two-way ANOVAs as appropriate. A reliability analysis was conducted to assess the internal consistency of the trustworthiness subscale. The five-item subscale from WCS showed excellent internal consistency, with Cronbach's alpha of 0.91. No substantial improvements were observed if an item was deleted; therefore, a mean trustworthiness score was computed from the five items. Additional data preparation included combining the guilt ratings from the male and female defendant conditions into a single composite variable.

Assumption checks were conducted before the MANOVA analysis. An analysis of standard residuals identified no outliers (standardized residuals $< \pm 3$) and no cases were deemed overly influential based on Cook's distances. The assumption of no multicollinearity between the dependent variables was supported by a moderate Pearson correlation ($r = -.457$) between trustworthiness and guilt. Scatterplots of standardized residuals indicated a linear relationship between the two dependent variables within each subgroup (see Appendix D). Box's test of equality of covariance matrices was not significant ($p = .276$), and an inspection of the covariance matrix revealed similar correlations between the dependent variables across all groups. This indicates that the assumption of homogeneity of covariances was satisfied. Histograms and Q-Q plots of standardized residuals suggested that the residuals were approximately normally distributed in most cases, with some deviations noted for guilt judgments (see Figures E5–E8 in Appendix E). In addition, the assumption of normality was

supported by the generally large and equal sample sizes across groups (none differing by more than a factor of two). Before conducting the follow-up ANOVAs, the homogeneity of variance assumption was tested. Levene's F test indicated no concern for the trustworthiness measure (p = .587), but was significant for the guilt dependent variable (p = .022). Nevertheless, given the equal sample sizes across groups, the ANOVA is considered robust to violations of the homogeneity of variances assumption (Field, 2018, p. 408).

Results

Confirmatory Analyses

Generally, the defendant was found somewhat not guilty (M = 38.53 out of 100) and generally trustworthy (M = 5.52 out of 7). Descriptive statistics per condition are presented in Table 1.

Table 1

Descriptive Statistics Across Conditions

Gender of Defendant	Response Type	Guilt (*M*, *SD*)	Trustworthiness (*M*, *SD*)	Sample Size (n)	Female Respondents (n, %)
Female	Denial	35.89 (24.90)	5.89 (1.73)	104	54 (51.9)
Male	Denial	34.08 (23.98)	5.64 (1.54)	86	51 (59.3)
Female	Silence	40.76 (28.65)	5.21 (1.45)	82	50 (61.0)
Male	Silence	44.12 (28.35)	5.26 (1.58)	85	49 (57.6)
Total		38.53 (26.61)	5.52 (1.61)	357	204 (57.1)

A two-way multivariate analysis of variance (MANOVA) was conducted to examine the effects of defendant gender (female, male) and their response (denial, silence) on guilt and trustworthiness. The analysis revealed a significant main effect of response type, Wilks' Lambda = .97, $F(2, 352) = 5.85$, $p = .003$ (see Table 2). Partial $\eta 2 = .032$ indicated that response type explained 3.2% of the variance in the canonically derived dependent variable. The main effect of gender and the interaction between gender and response were not significant. Thus, the null hypothesis that response type has no effect on juror judgment was rejected.

Table 2

Multivariate Tests

Effect	Wilks' Λ	$F_{(2, 352)}$	p	Partial η^2
Response	.968	5.83	.003	.032
Gender	.999	.17	.843	.001
Gender × Response	.992	1.45	.235	.008

Note. n = 357

A post hoc discriminant analysis was conducted to investigate which dependent variable (guilt or trustworthiness) contributed most to the significant main effect of response type. The analysis revealed one discriminant function with a canonical correlation of .182, indicating that the function explained around 3.3% of the variance. The structure matrix showed that both trustworthiness (r = .921) and guilt (r = –.759) were strongly correlated with the discriminant function. Standardized discriminant function coefficients were .730 for trustworthiness and –.436 for guilt, which suggests that trustworthiness contributed relatively more to the discrimination between the denial and silence conditions.

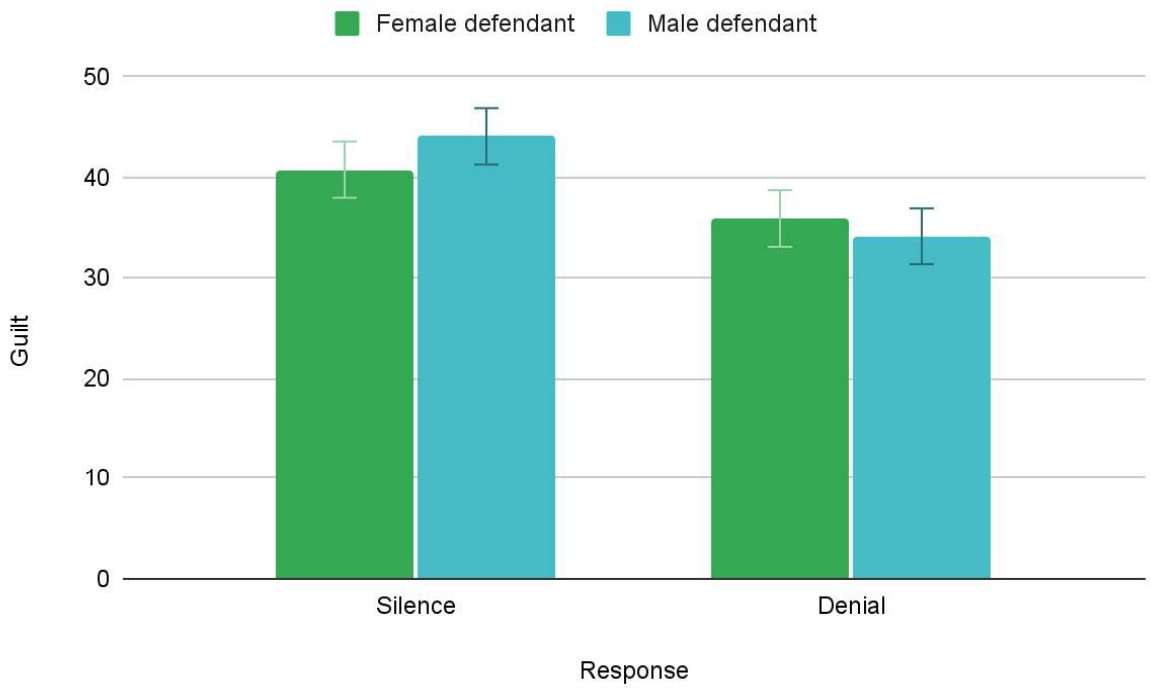
Following the significant MANOVA effect of response, univariate ANOVAs were conducted on the two dependent variables separately. The means reported are estimated marginal means (EMMs). For guilt ratings, defendants who denied were perceived as significantly less guilty (M = 34.99, SE = 1.93) than those who pleaded the Fifth to remain silent (M = 42.44, SE = 2.05), $F(1, 353) = 7.03$, p = .008, partial η^2 = .020. Similarly, defendants who denied were perceived as significantly more trustworthy (M = 5.77, SE = 0.12) than those who remained

silent ($M = 5.24$, $SE = 0.12$), $F(1, 353) = 9.78$, $p = .002$, partial $\eta^2 = .027$. These effect sizes were small to medium.

No follow-up ANOVAs were conducted for gender or the interaction, as these effects were not significant in the MANOVA. EMMs by response type are in Appendix F; a complete table of all EMMs across the 2×2 design is in Appendix G. Figures 1 and 2 present bar graphs depicting the EMM differences across the four conditions.

Figure 1

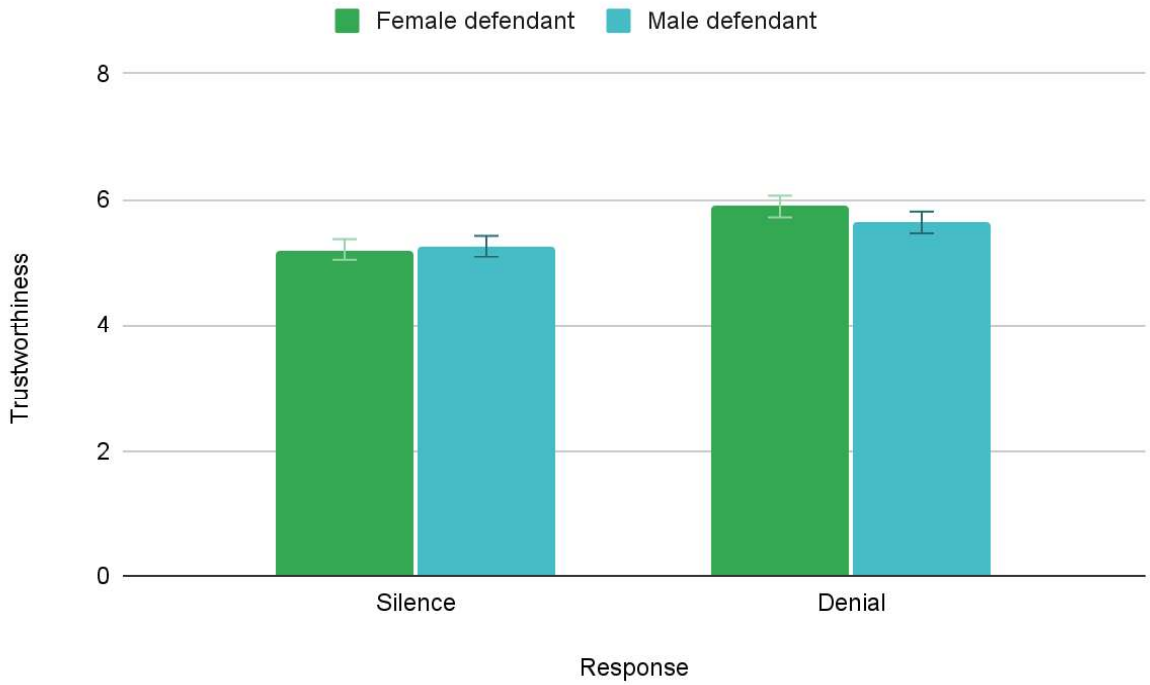
Mean Guilt by Response Type and Defendant Gender



Note. Bars represent EMMs. Error bars represent ±1 standard error ($SE = 2.81$), averaged across conditions.

Figure 2

Mean Trustworthiness by Response Type and Defendant Gender



Note. Bars represent EMMs. Error bars represent ±1 *SE* (*SE* = 0.17), averaged across conditions.

Exploratory Findings

Exploratory analyses revealed several interesting findings. First, potential differences in the types of information participants reported relying on for their judgment were examined. Despite explicit instructions not to infer guilt from silence, an independent-samples t-test showed that participants in the silence condition did not report relying differently on the incriminating question where the defendant pleaded the Fifth ($M = 56.57$, $SD = 31.67$) than those in the denial condition ($M = 54.92$, $SD = 26.7$), $t(320) = .525$, $p = .600$. However, participants silence condition reported relying significantly less on the defendant's use of language ($M = 25.52$, $SD =$

27.51) compared to participants in the denial condition (M = 40.8, SD = 31.14), $t(351) = 4.85$, p <.001. There were no significant differences in reported reliance on information based on the defendant's gender.

Female participants rated the defendant as significantly less trustworthy (M = 5.36, SD = 1.62) than male participants (M = 5.75, SD = 1.59), $t(352) = 2.27$, p = .024, and as more guilty (M = 42.52, SD = 26.79) than male participants (M = 32.43, SD = 25.14), $t(352) = 3.59$, p < .001. Controlling for the gender of the participant did not change the significant main effect of response on guilt and trustworthiness, Wilks' Lambda = .97, $F(2, 353) = 5.85$, p = .005.

Discussion

Hypotheses

This empirical study examined the psychological impact of a defendant's lawful invocation of the right to silence and the defendant's gender. The results supported the hypothesis that invoking the right to silence increases juror's perceptions of the defendant's guilt and lowers their perceived trustworthiness. No main effects of the defendant's gender or the interaction between gender and pleading the Fifth were found. A doctrinal review of jury instructions further illustrated how current legal safeguards aim to prevent silence-based bias but may not be sufficient.

Hypothesis 1: The Impact of Silence on Juror Perceptions

The first hypothesis examined whether a defendant's lawful invocation of the right to silence in response to a potentially incriminating question leads jurors to perceive the defendant as more guilty and less trustworthy, despite explicit legal instructions not to infer guilt from silence. The multivariate analysis revealed a significant main effect of response type on the combined dependent variables. Follow-up univariate ANOVAs indicated that defendants who

pleaded the Fifth were perceived as both significantly more guilty and significantly less trustworthy. These results provide strong evidence to reject the null hypothesis, demonstrating that a defendant's silence does impact jurors' judgments.

The findings can be interpreted through our inherent dislike of missing information and those who withhold it from us. In line with the Information Gap Theory (Loewenstein, 1994), silence in response to an incriminating question may provoke discomfort and heightened curiosity as well as violate jurors' schema of how innocent people are expected to behave (Lawrence et al., 2024). From the perspective of Balance Theory (Shaffer & Case, 1982), when withholding information about a crime, the defendant may be also perceived as aligning with the offense, as their silence obstructs the pursuit of truth and justice. Lastly, Social Penetration Theory (John et al., 2016) suggests that withholding information can impede the development of interpersonal trust resulting in a weaker personal connection.

The general findings are in line with the foundational body of research by Shaffer and colleagues (Hendrick & Shaffer, 1975; Shaffer et al., 1978), which consistently demonstrated that invoking the right to silence can negatively affect perceptions of a defendant's moral character and increase judgments of guilt. Similarly, the results support the recent literature on police interrogations, which reports increased perceptions of guilt and diminished character judgments for suspects who invoked their right to silence (Lawrence, 2024; Sukumar and Kassin 2017, as cited in Kassin et al., 2020). Importantly, while earlier studies established a connection between perceived guilt and character, they also suggested that they do not always operate identically (Shaffer et al., 1978; 1979). The current study extends this finding by using discriminant analysis, which revealed that although the two outcomes were related,

trustworthiness may have a greater influence in distinguishing between the silence and denial conditions.

One distinguishing feature of the present study is its use of a more legally realistic scenario. Hendrick and Shaffer's (1975) stronger manipulation relied on the defendant pleading the Fifth in response to a final, highly accusatory question which is questionable under *Brown v. United States* (1958). The current study employed a tangential yet potentially incriminating question—a context where silence may plausibly be invoked by innocent individuals. Furthermore, this study demonstrated that silence bias persisted despite both preliminary and closing jury instructions which had not been tested in previous work. In contrast to the large effect sizes reported by Hendrick and Shaffer (1975), the current study found small effects (partial $\eta^2 = .02$; .027) likely due to the weaker but more ecologically valid manipulation. Nonetheless, even a modest shift in a juror's perceptions can have serious consequences—such as leading to the wrongful incarceration of an innocent individual.

Hypothesis 2: The Role of Defendant Gender

The second hypothesis examined whether male defendants would be perceived as more guilty and less trustworthy than female defendants. The MANOVA showed no significant main effect of the defendant's gender on the combined dependent variables. Consequently, no follow-up ANOVAs were conducted. Thus, there was insufficient evidence to reject the null hypothesis, indicating that perceptions of guilt and trustworthiness did not significantly differ based on the defendant's gender.

These findings contrast the existing experimental literature and sentencing data, which suggest that women typically receive more lenient treatment in the criminal justice system (Daly & Bordt, 1995; Doerner and Demuth, 2014). However, most of this research has focused on

cases involving sexual offenses (Pica et al, 2023; Stevens et al., 2022), where gender stereotypes may be especially salient due to traditional associations between women and caregiving roles. In contrast, perceptions of competence rather than warmth or nurturance may play a larger role in cases of economic or "white collar" crime which are less violent.

Second, gender stereotypes themselves may be evolving. While women are still perceived as having lower agency—such as ambition and competitiveness—they are increasingly viewed as competent and intelligent (Eagly et al., 2020). According to Social Role Theory, stereotypes become internalized by observing a gendered division of labor in society (Eagly & Wood, 2012). With a rise in female participation in traditionally male-dominated careers such as finance and engineering, societal perceptions may shift accordingly (Croft et al., 2015). Supporting this view, a meta-analysis by Bontrages et al. (2013) found that while women continued to receive more lenient sentences, gender disparities have decreased over time. Twelve years later, such biases may have diminished further—especially among younger individuals, who comprised a substantial portion of the present study's sample (mode age = 21 years).

Hypothesis 3: Interaction Between Silence and Gender

The final hypothesis investigated whether the detrimental perceptions associated with invoking the right to silence would disproportionately affect male defendants compared to female defendants. The multivariate analysis found no significant interaction effect between gender and response type. Hence, there was insufficient evidence to reject the null hypothesis, indicating that gender did not significantly moderate the effect of silence on juror perceptions.

These findings contrast with courtroom bias research showing that juror judgments are often shaped by multiple intersecting factors (Curley et al., 2022). For instance, Johnson et al. (1995) found that racial bias influenced verdicts primarily when the evidence was ambiguous,

suggesting that situational cues may activate stereotypes. Similarly, Clary and Shaffer (1985) observed that the effect of a defendant's silence was amplified when defendants also had a similar prior record. However, no prior research has examined the interaction of silence and gender stereotypes. One explanation is that evolving gender norms may have decreased the impact of gender stereotypes, as discussed earlier. Furthermore, according to the Memory Systems Model, biases arise from distinct interacting memory systems, warranting further study of such interactions (Amodio, 2019).

Legal Context and the Regulation of Silence Bias

To contextualize these findings, a doctrinal review examined how current legal frameworks attempt to mitigate silence bias. The right to silence was solidified in the landmark case *Miranda v. Arizona* (1966) as a procedural safeguard to protect against coerced and false confessions, and the principle of no inference of guilt was established in *Griffin v. California* (1965). In *Ohio v. Reiner* (2001) the right was reaffirmed beyond the defendant's use to also include the witnesses and other innocent people that may fear having their words being used against them. Thus, the right remains firmly embedded in legal doctrine, upheld as a formal protection against self-incrimination.

A doctrinal analysis of the *Ninth Circuit Model Criminal Jury Instructions* (NCJIC, 2022) revealed explicit efforts to reduce silence bias. In both preliminary and closing instructions, jurors are warned against letting bias influence their decisions. The right to remain silent is introduced early, but the direct instruction not to infer guilt from silence appears only at the end of the trial. Thus, silence bias is acknowledged and attempted to be mitigated via explicit instructions. Nevertheless, various studies demonstrate that explicit instructions are relatively ineffective in controlling jurors' cognitive processes (Lynch et al., 2022, on racial biases; Steblay

et al., 2006, on inadmissible evidence). Jurors may still struggle to disregard inadmissible evidence and instructions may even backfire—making jurors more likely to focus on prohibited information after being told to disregard it, due to reactance (Lieberman & Arndt, 2000). Furthermore, the delayed timing of the instructions may limit their effectiveness, as the jurors may have already formed impressions of guilt (Ingriselli, 2015).

Implications and Policy Recommendations

This study underscores the troubling persistence of silence bias in the courtroom. Defendants who invoke their lawful right to silence are perceived as less trustworthy and more guilty than those who deny the charges. Although the right is firmly upheld in legal doctrine as a safeguard and explicitly addressed in jury instruction, its protective function appears limited in practice. This reveals a strong disconnection between legal theory and courtroom reality—where invoking the Fifth Amendment may itself be perceived as an indication of guilt. To uphold the promise of impartial justice and fair rights trial, legal protections must extend beyond doctrine and draw on psychological research to shape procedures that reflect how people actually think and judge. Otherwise, the law risks undermining the foundational principle of the rule of law—offering the right against self-incrimination in theory, but denying its protection in practice.

Policy reforms are needed to ensure that the right to silence functions as a true safeguard. First, greater attention by both researchers and policymakers to the phenomenon of silence bias is essential, as it remains an underexplored area in legal psychology. Second, revising the content and timing of jury instructions may prove effective. An inoculation strategy, such as providing pre-trial instructions that emphasize the right to remain silent before jurors form preliminary judgments could help mitigate bias (Ingriselli, 2015). Additionally, research suggests that adding a compelling rationale for why certain evidence, or silence, should not be considered appears key

to increasing jurors' compliance with instructions to disregard information (Steblay et al., 2006; Lieberman & Arndt, 2000).

Low juror comprehension of legal instructions remains a broader systemic issue. Simplifying the language of jury instructions, presenting a video about implicit bias, and providing mid-trial summaries could support the understanding and implementation of legal statutes (Bornstein and Greene, 2011; Lynch et al., 2022). Longer-term reforms might include enhanced juror education or training to resist cognitive biases. However, while Kahan et al. (2016) found that judges were less influenced than the general public by cultural values, such training programs would be resource-costly, and some scholars argue that judges remain vulnerable to similar biases, though they are better equipped to suppress them in some situations (Australian Law Reform Commission, 2021).

In the short term, defendants should be better informed about the potential costs of invoking their right to silence. Legal counsel should also offer guidance on how to phrase the invocation of this right in a way that minimizes perceived guilt (Shaffer et al., 1978).

Limitations

One limitation of the present study concerns the sample. The use of non-probability sampling introduces the potential for sampling bias, limiting the generalizability of the findings. Although the sample size was sufficient to ensure statistical power, it primarily comprised young adults and included only a subset of American participants—the population most relevant to the U.S. legal context. While biases may persist across cultures, their expression and underlying stereotypes could differ slightly.

Second, due to space and time constraints, the study design and analysis of jury instructions focused mainly on the U.S. Ninth Circuit jurisdiction. While this circuit's

instructions actively address implicit biases, future research could examine how silence bias is addressed in jury instructions from other districts, where wording and emphasis may differ.

Third, the strong emphasis on the presumption of innocence in the jury instructions may have led numerous participants to select a guilt rating of 0, interpreting the 0–100 scale categorically rather than continuously, likely reducing the normality of the guilt ratings (see Methodology).

Fourth, while the study incorporated more legal realism—such as preliminary and closing instructions—than previous research, it was still conducted as an online vignette. Participants only read a brief trial transcript, whereas actual court proceedings include multiple witnesses, lengthier jury instructions, and real pressure and consequences. Although individual pre-deliberation verdicts strongly influence the final jury decisions (Bornstein & Greene, 2011), the absence of jury deliberation and other contextual factors limits the external validity of the findings (Nuñez et al., 2011).

Lastly, given the novelty of the experiment, validated stimuli were limited. The trial case was adapted from Shaffer's work but modified, including updating the case to a modern context and introducing a different instance of the defendant invoking the right to silence within the transcript.

Future Research

Much remains unknown about the silence bias. Future research could explore the effect of invoking the right to silence on the jury's judgments in different crime types beyond financial fraud. Additionally, studies should examine how the effects of silence vary depending on defendant characteristics such as age and race, as well as intersections with other cognitive and social biases. Juror characteristics like dogmatism (Shaffer & Case, 1982), trust in the legal

system, and potentially gender—based on exploratory findings in this study—may also influence silence bias.

Moreover, research should expand beyond vignette methods by incorporating field experiments, real courtroom observations, and neuroscience techniques for a more dynamic exploration of silence bias. Furthermore, while this study focused on reported perceptions of trustworthiness and guilt, some evidence suggests that juror's implicit evaluations of the defendant can predict verdicts beyond explicit evaluations (Korkmaz et al., 2024). Thus, implicit measures such as the Implicit Association Test could be valuable tools for future research.

To better understand the nature of this bias, examining its underlying mechanisms is essential. Research could explore the connection between perceptions of guilt and trustworthiness. Furthermore, exploratory analyses of the present study found that participants in the silence condition reported relying significantly less on the defendant's use of language than those in the control condition. Yet, they still judged the defendant as significantly more guilty and less trustworthy—despite the only difference being the defendant's response. This suggests that the bias may operate at an implicit level. Participants may have experienced cognitive dissonance—agreeing to follow the instructions and therefore believing they did (Festinger, 1957), however, further research is needed to confirm this.

A deeper understanding of how silence bias operates can inform the development of effective implicit bias jury instructions. Testing different wordings, such as by comparing jury instructions across the U.S. circuit jurisdictions, may reveal strategies to reduce the impact of silence bias.

Conclusion

Understanding how legal safeguards operate in practice is essential for upholding the promise of a fair trial. The right to silence, guaranteed by the Fifth Amendment, is a critical legal protection, yet has received limited empirical scrutiny. This study demonstrated that despite formal efforts within the legal system to mitigate the bias—such as with explicit jury instructions—invoking the right to silence still significantly influences juror judgments. Defendants who exercise this constitutional right were perceived as more guilty and less trustworthy, despite no additional evidence being presented. Contrary to expectations, the defendant's gender did not significantly influence juror perceptions nor moderate the silence bias.

This thesis addresses a significant gap in the literature by extending foundational research from the 1970s. It examined a novel moderating variable—the gender of the defendant—and tested the persistence of silence bias in a more modern social context. Crucially, the study contributes interdisciplinary value in two directions. First, by incorporating elements of real legal procedure—specifically both the preliminary and closing instructions from the Ninth Circuit— it provides a more ecologically valid reflection of courtroom practices and a stronger test of silence bias under explicit judicial guidance. Second, its psychological findings reveal a troubling disconnect between legal ideals and the legal system's ability to uphold the right to silence in practice—raising serious concerns for the rule of law.

In all, the study highlights a critical failure in the protection of the right to remain silent and highlights an urgent need for legal reform. Future research must test the mechanisms behind the adverse consequences of silence to develop more effective legal safeguards against self-incrimination. Recommended reforms include revising the contents and timing of jury

instructions and, in the meantime, informing criminal defendants about the potential negative implications of remaining silent. Psycho-legal research will remain essential to bridge the gap between legal theory and courtroom reality, helping to uphold the presumption of innocence and the promised fair trial procedures. Without addressing this disconnect, innocent defendants—like Ms. Baker in this study—may continue to suffer unjust outcomes simply for exercising a right designed to protect them.

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Appendix A

Preliminary Jury Instructions

Duty of Jury

It is your duty to evaluate all the evidence received in the case and to decide the facts. You must then apply the law as I give it to you, whether you agree with the law or not. You must decide the case solely on the evidence and the law before you.

Perform these duties fairly and impartially. You should not be influenced by any person's race, color, religious beliefs, national ancestry, sexual orientation, gender identity, gender, or economic circumstances. Also, do not allow yourself to be influenced by personal likes or dislikes, sympathy, prejudice, fear, public opinion, or biases.

The Charge—Presumption of Innocence

This is a criminal case brought by the United States government, charging the defendant with embezzlement (a form of financial fraud which involves the unlawful use of money entrusted to someone).

The defendant has pleaded not guilty and is presumed innocent unless and until the government proves the defendant guilty beyond a reasonable doubt. The defendant has the right to remain silent and never has to prove innocence or present any evidence.

What is Evidence

The evidence you are to consider:

- First, sworn testimony of any witness;

- Second, exhibits admitted into evidence.

What is Not Evidence

The following things are not evidence, and you must not consider them:

- First, statements and arguments of the attorneys;

- Second, testimony that I instruct you to disregard.

Sometimes I may order that evidence be stricken from the record or instruct you to disregard it. That means that you must not consider it when deciding the case.

Credibility of Witnesses

You may decide what testimony to believe—some, all, or none of it.

You may consider:

- First, the witness's opportunity and ability to see or hear or know the things testified to;

- Second, the witness's memory;

- Third, the witness's manner while testifying;

- Fourth, the witness's interest in the outcome of the case;

- Fifth, the witness's bias or prejudice;

- Sixth, the reasonableness of their testimony in light of all evidence;

- Lastly, any other factors that affect believability.

Sometimes a witness may say something that is not consistent with something else he or she said. People often forget things or make mistakes in what they remember.
However, if you decide that a witness has deliberately testified untruthfully about something important, you may choose not to believe anything they said.

Avoid bias based on a witness's race, color, religious beliefs, national ancestry, sexual orientation, gender identity, gender, or economic circumstances in your determination of credibility.

Appendix B

Closing Jury Instructions

Duties of Jury to Find Facts and Follow Law

It is your duty to apply the law as I give it to you, whether you agree with the law or not. You must decide the case solely on the evidence and the law. You should also not be influenced by any person's race, color, religious beliefs, national ancestry, sexual orientation, gender identity, gender, or economic circumstances. Also, do not be influenced by personal likes or dislikes, sympathy, prejudice, fear, public opinion, or biases.

Presumption of Innocence—Burden of Proof

The defendant has pleaded not guilty. The defendant does not have to testify or present any evidence. The defendant does not have to prove innocence; the government has the burden of the charge beyond a reasonable doubt.

Defendant's Decision Not to Testify

A defendant in a criminal case has a constitutional right under the Fifth Amendment not to testify. In reaching your verdict, the law prohibits you from considering in any manner that the defendant declined to answer a particular question.

Theft, Embezzlement or Misapplication of Bank Funds

The defendant is charged with embezzling bank funds. Embezzlement is a form of financial fraud in which a person unlawfully steals or misappropriates the funds placed in one's trust or belonging to one's employer.

Appendix C

Vignettes

Now, please proceed to carefully read the case details below.

This is the trial of a man named Jane/John Baker who is accused of embezzling funds from the bank where she/he is employed.

The following testimony is an excerpt from the transcript of the defendant's criminal trial. While several other witnesses also gave evidence, this testimony is likely the most significant in the case. Names of individuals not on trial have been redacted to protect privacy.

Condition 1: Female–Denial

Case B3369 - Eighth Federal District Court

Charge: Embezzlement of Funds from Mercantile Trust Bank

Defendant: Jane Baker

Prosecutor: Ms. Baker, how long have you worked for the Mercantile Trust Bank?

Defendant: Six years.

Prosecutor: What were your duties at the bank?

Defendant: I've worked mainly at the front desk as a teller—handling customer transactions and payments.

Prosecutor: Did you have any additional responsibilities?

Defendant: Yes.

Prosecutor: What were those duties?

Defendant: I was responsible for protecting the physical accounting records and making sure only authorized staff could access them.

Prosecutor: So, you had physical control of the financial documents—uh, you were responsible for their protection?

Defendant: Yes, that's right.

Prosecutor: Did you receive extra compensation for those duties?

Defendant: Yes.

Prosecutor: Did your job also involve any bookkeeping such as entering any figures or modifying financial documents?

Defendant: No.

Prosecutor: So, the job in no way involved making entries into the financial documents, just physically protecting them.

Defendant: Yes, that is correct.

Prosecutor: Why are there two witnesses stating they saw you write in the financial documents last year?

Defendant: Oh... I think that might’ve been when I was asked to quickly note down the date and time.

Prosecutor: Ms. Baker, are you acquainted with T.A., a former contractor for the Mercantile Trust Bank?

Defendant: Yes, I’ve met T.A., who was hired to do some tech work.

Prosecutor: Is it true that T.A. was recently convicted of computer fraud related to falsifying transaction logs?

Defendant: That’s what I’ve heard.

Prosecutor: Ms. Baker, during the time that T.A. was doing contract work at the bank, did you ever exchange USB drives or private communications with T.A. outside of work channels?

Defendant: No, absolutely not.

Prosecutor: Well, now, Ms. Baker, let's review the situation for a moment. A large amount of money has been embezzled from the Mercantile Trust over the last two years. The embezzlement was skilfully concealed by double-entry manipulations until discovered by external auditors last month. Other people who had access to the financial records provided verified alibis that they were not guilty.

I ask you directly: Did you change the entries in the financial bank documents? In other words, did you falsify these records to cover illegal embezzlement of funds?

Defendant: No, I certainly did not.

Prosecutor: OK, Ms. Jane Baker, you are now excused; no further questions at this time.

Condition 2: Male–Denial

Case B3369 - Eighth Federal District Court

Charge: Embezzlement of Funds from Mercantile Trust Bank

Defendant: John Baker

Prosecutor: Mr. Baker, how long have you worked for the Mercantile Trust Bank?

Defendant: Six years.

Prosecutor: What were your duties at the bank?

Defendant: I’ve worked mainly at the front desk as a teller—handling customer transactions and payments.

Prosecutor: Did you have any additional responsibilities?

Defendant: Yes.

Prosecutor: What were those duties?

Defendant: I was responsible for protecting the physical accounting records and making sure only authorized staff could access them.

Prosecutor: So, you had physical control of the financial documents—uh, you were responsible for their protection?

Defendant: Yes, that's right.

Prosecutor: Did you receive extra compensation for those duties?

Defendant: Yes.

Prosecutor: Did your job also involve any bookkeeping such as entering any figures or modifying financial documents?

Defendant: No.

Prosecutor: So, the job in no way involved making entries into the financial documents, just physically protecting them.

Defendant: Yes, that is correct.

Prosecutor: Why are there two witnesses stating they saw you write in the financial documents last year?

Defendant: Oh... I think that might’ve been when I was asked to quickly note down the date and time.

Prosecutor: Mr. Baker, are you acquainted with T.A., a former contractor for the Mercantile Trust Bank?

Defendant: Yes, I’ve met T.A., who was hired to do some tech work.

Prosecutor: Is it true that T.A. was recently convicted of computer fraud related to falsifying transaction logs?

Defendant: That's what I've heard.

Prosecutor: Mr. Baker, during the time that T.A. was doing contract work at the bank, did you ever exchange USB drives or private communications with T.A. outside of work channels?

Defendant: No, absolutely not.

Prosecutor: Well, now, Mr. Baker, let's review the situation for a moment. A large amount of money has been embezzled from the Mercantile Trust over the last two years. The embezzlement was skilfully concealed by double-entry manipulations until discovered by external auditors last month. Other people who had access to the financial records provided verified alibis that they were not guilty.

I ask you directly: Did you change the entries in the financial bank documents? In other words, did you falsify these records to cover illegal embezzlement of funds?

Defendant: No, I certainly did not.

Prosecutor: OK, Mr. John Baker, you are now excused; no further questions at this time.

Condition 3: Female–Silence

Case B3369 - Eighth Federal District Court

Charge: Embezzlement of Funds from Mercantile Trust Bank

Defendant: Jane Baker

Prosecutor: Ms. Baker, how long have you worked for the Mercantile Trust Bank?

Defendant: Six years.

Prosecutor: What were your duties at the bank?

Defendant: I've worked mainly at the front desk as a teller—handling customer transactions and payments.

Prosecutor: Did you have any additional responsibilities?

Defendant: Yes.

Prosecutor: What were those duties?

Defendant: I was responsible for protecting the physical accounting records and making sure only authorized staff could access them.

Prosecutor: So, you had physical control of the financial documents—uh, you were responsible for their protection?

Defendant: Yes, that's right.

Prosecutor: Did you receive extra compensation for those duties?

Defendant: Yes.

Prosecutor: Did your job also involve any bookkeeping such as entering any figures or modifying financial documents?

Defendant: No.

Prosecutor: So, the job in no way involved making entries into the financial documents, just physically protecting them.

Defendant: Yes, that is correct.

Prosecutor: Why are there two witnesses stating they saw you write in the financial documents last year?

Defendant: Oh... I think that might've been when I was asked to quickly note down the date and time.

Prosecutor: Ms. Baker, are you acquainted with T.A., a former contractor for the Mercantile Trust Bank?

Defendant: Yes, I've met T.A., who was hired to do some tech work.

Prosecutor: Is it true that T.A. was recently convicted of computer fraud related to falsifying transaction logs?

Defendant: That's what I've heard.

Prosecutor: Ms. Baker, during the time that T.A. was doing contract work at the bank, did you ever exchange USB drives or private communications with T.A. outside of work channels?

Defendant: I invoke my Fifth Amendment right. Therefore, I decline to answer this question.

Prosecutor: Well, now, Ms. Baker, let's review the situation for a moment. A large amount of money has been embezzled from the Mercantile Trust over the last two years. The embezzlement was skilfully concealed by double-entry manipulations until discovered by external auditors last month. Other people who had access to the financial records provided verified alibis that they were not guilty.

I ask you directly: Did you change the entries in the financial bank documents? In other words, did you falsify these records to cover illegal embezzlement of funds?

Defendant: No, I certainly did not.

Prosecutor: OK, Ms. Jane Baker, you are now excused; no further questions at this time.

Condition 4: Male–Silence

Case B3369 - Eighth Federal District Court

Charge: Embezzlement of Funds from Mercantile Trust Bank

Defendant: John Baker

Prosecutor: Mr. Baker, how long have you worked for the Mercantile Trust Bank?

Defendant: Six years.

Prosecutor: What were your duties at the bank?

Defendant: I've worked mainly at the front desk as a teller—handling customer transactions and payments.

Prosecutor: Did you have any additional responsibilities?

Defendant: Yes.

Prosecutor: What were those duties?

Defendant: I was responsible for protecting the physical accounting records and making sure only authorized staff could access them.

Prosecutor: So, you had physical control of the financial documents—uh, you were responsible for their protection?

Defendant: Yes, that's right.

Prosecutor: Did you receive extra compensation for those duties?

Defendant: Yes.

Prosecutor: Did your job also involve any bookkeeping such as entering any figures or modifying financial documents?

Defendant: No.

Prosecutor: So, the job in no way involved making entries into the financial documents, just physically protecting them.

Defendant: Yes, that is correct.

Prosecutor: Why are there two witnesses stating they saw you write in the financial documents last year?

Defendant: Oh... I think that might've been when I was asked to quickly note down the date and time.

Prosecutor: Mr. Baker, are you acquainted with T.A., a former contractor for the Mercantile Trust Bank?

Defendant: Yes, I've met T.A., who was hired to do some tech work.

Prosecutor: Is it true that T.A. was recently convicted of computer fraud related to falsifying transaction logs?

Defendant: That's what I've heard.

Prosecutor: Mr. Baker, during the time that T.A. was doing contract work at the bank, did you ever exchange USB drives or private communications with T.A. outside of work channels?

Defendant: I invoke my Fifth Amendment right. Therefore, I decline to answer this question.

Prosecutor: Well, now, Mr. Baker, let's review the situation for a moment. A large amount of money has been embezzled from the Mercantile Trust over the last two years. The embezzlement was skilfully concealed by double-entry manipulations until discovered by external auditors last month. Other people who had access to the financial records provided verified alibis that they were not guilty.

I ask you directly: Did you change the entries in the financial bank documents? In other words, did you falsify these records to cover illegal embezzlement of funds?

Defendant: No, I certainly did not.

Prosecutor: OK, Mr. John Baker, you are now excused; no further questions at this time.

Appendix D

Assumption Checks – Scatterplots

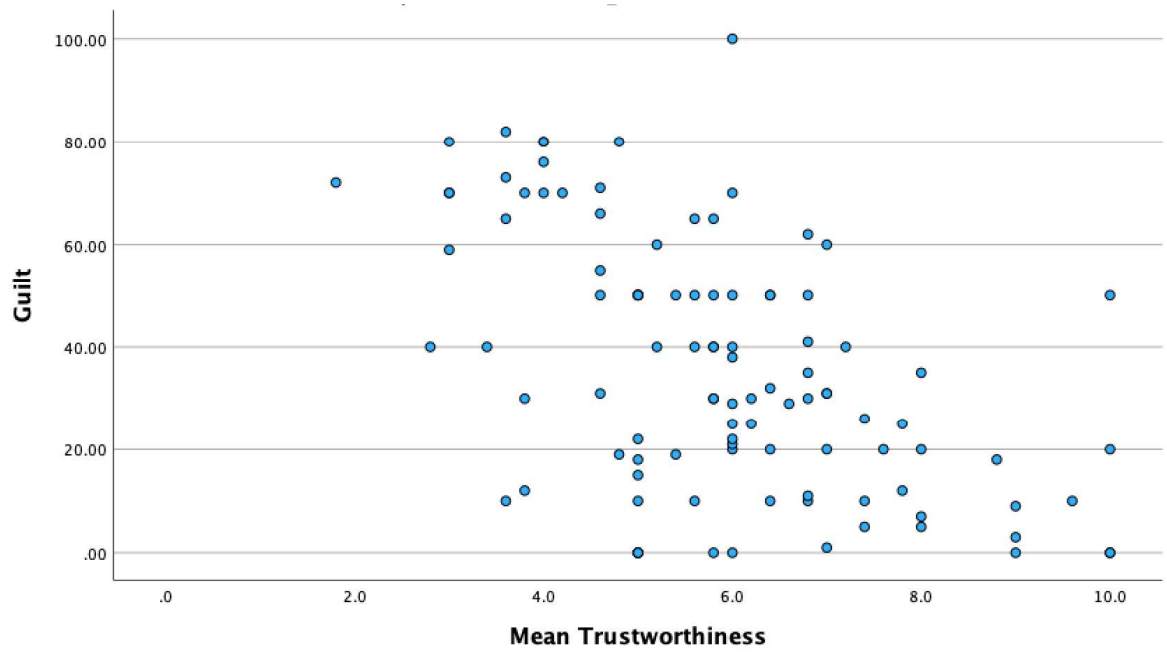

Figure D1. Scatterplot of Guilt and Trustworthiness for Female–Denial Condition

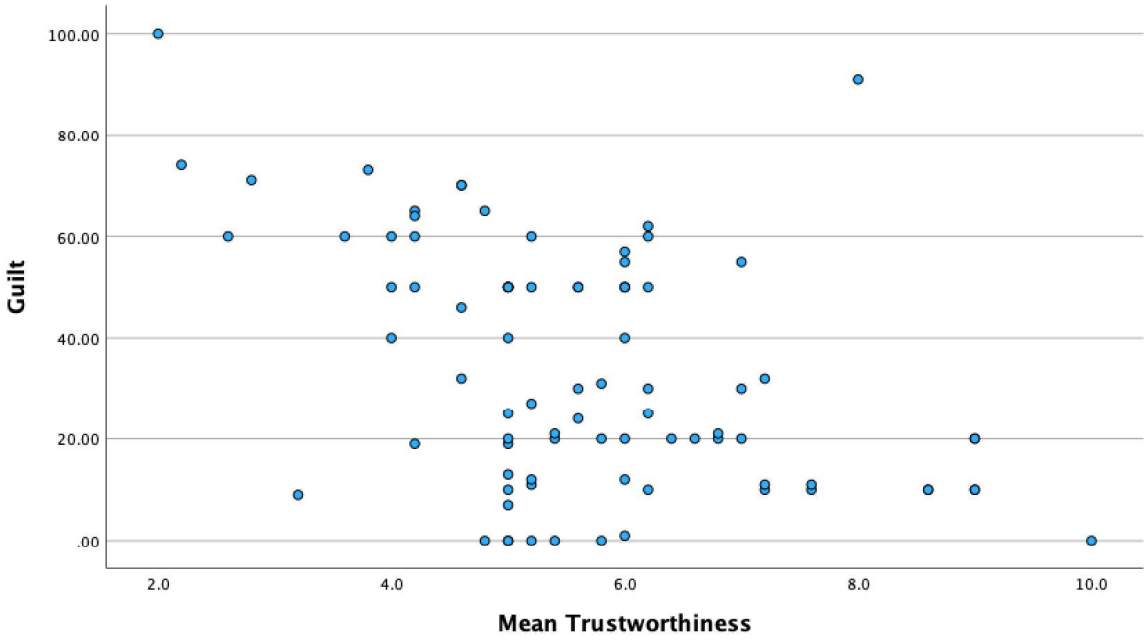

Figure D2. Scatterplot of Guilt and Trustworthiness for Male-Denial Condition

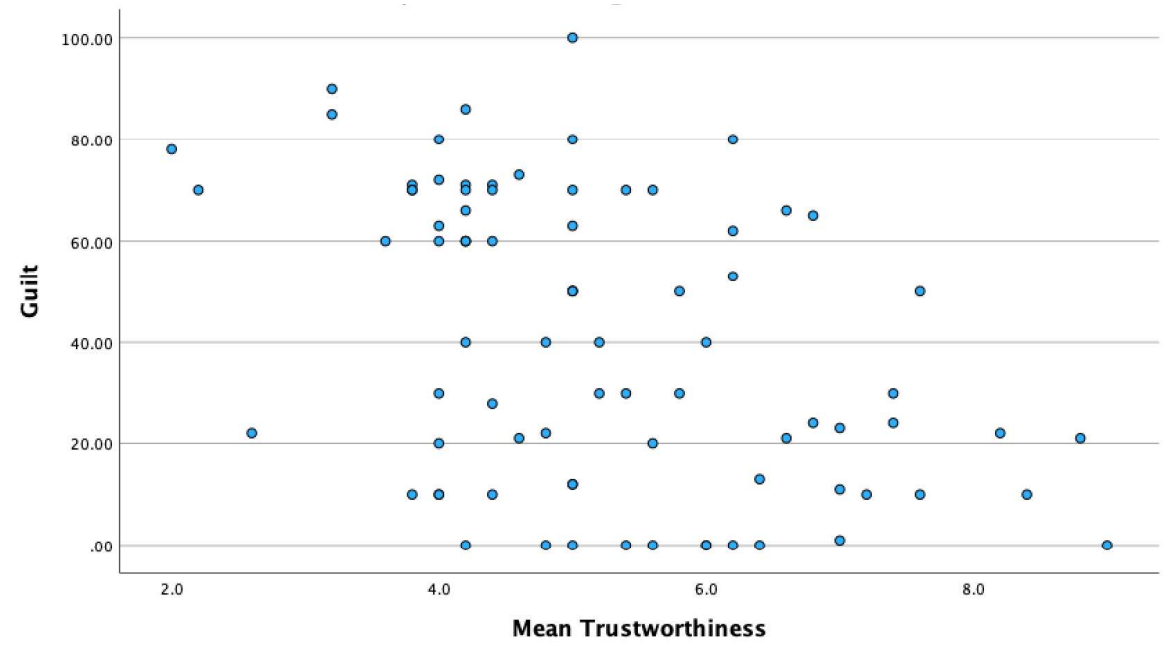

Figure D3. Scatterplot of Guilt and Trustworthiness for Female–Silence Condition

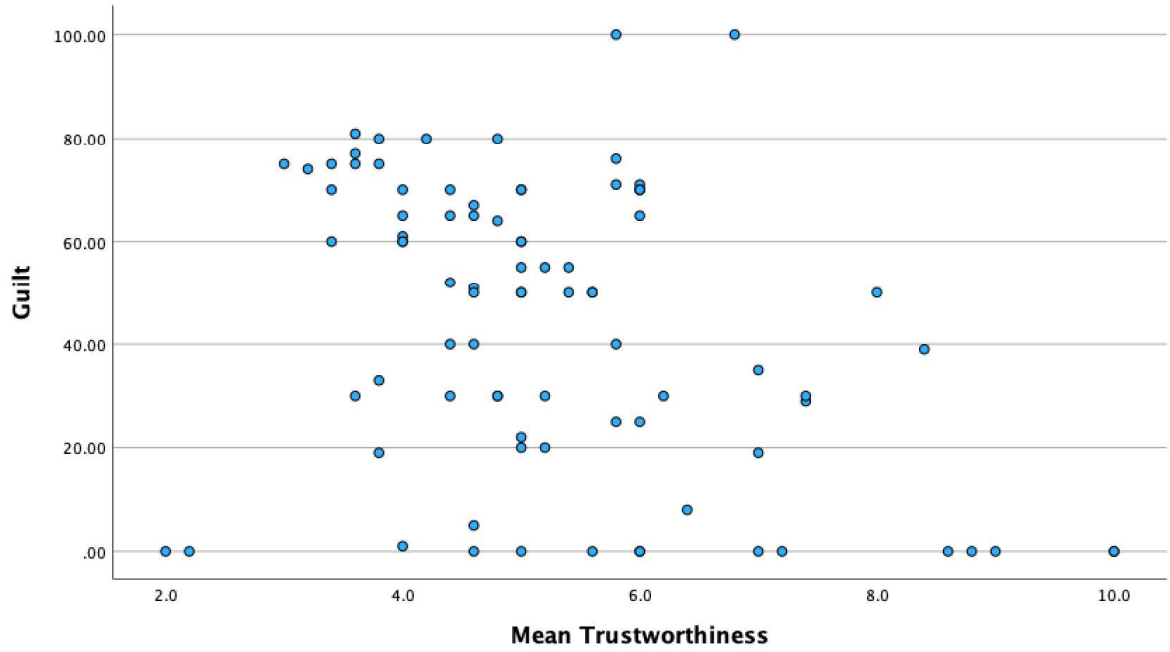

Figure D4. Scatterplot of Guilt and Trustworthiness for Male–Denial Condition

Appendix E

Assumption Checks – Histograms and Q-Q Plots

Distribution of Guilt Scores by Condition

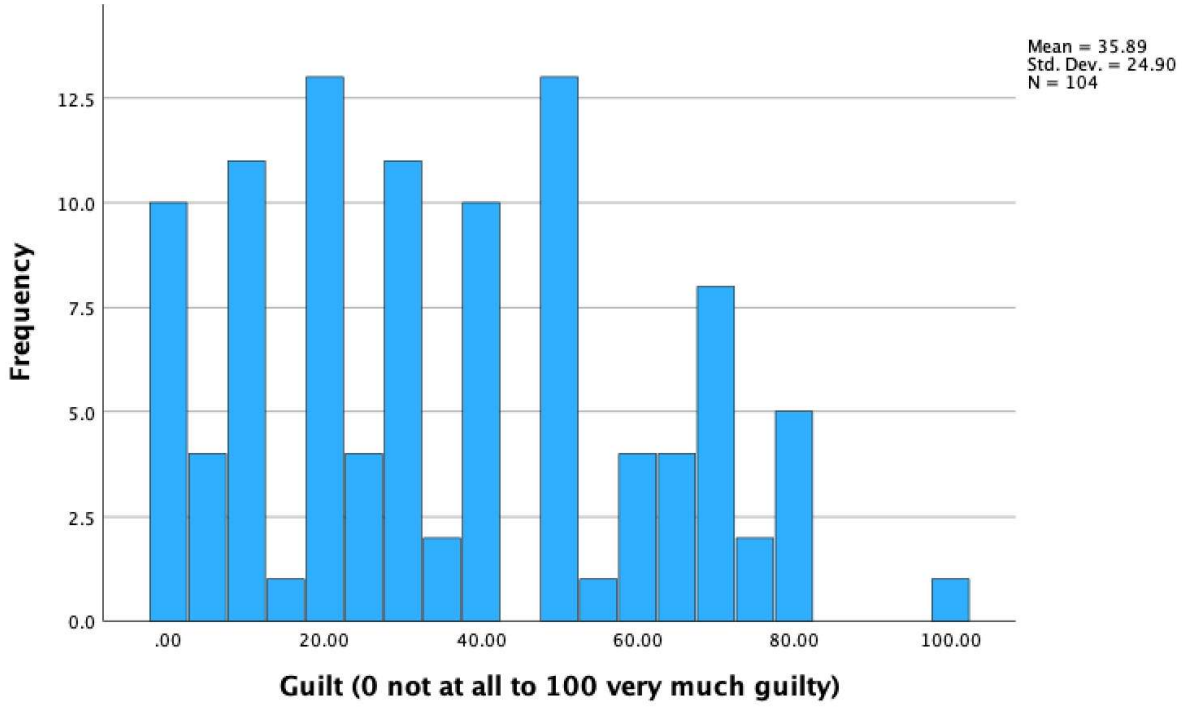

Figure E1. Histogram of guilt scores for female – denial condition

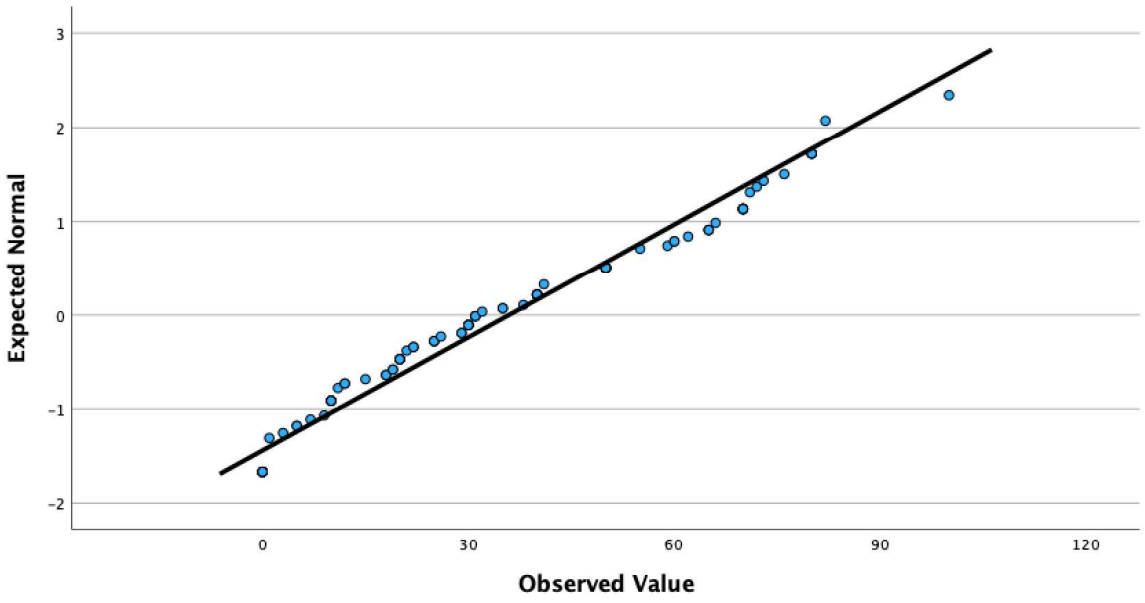

Figure E2. Q-Q plot of guilt scores for female – denial condition

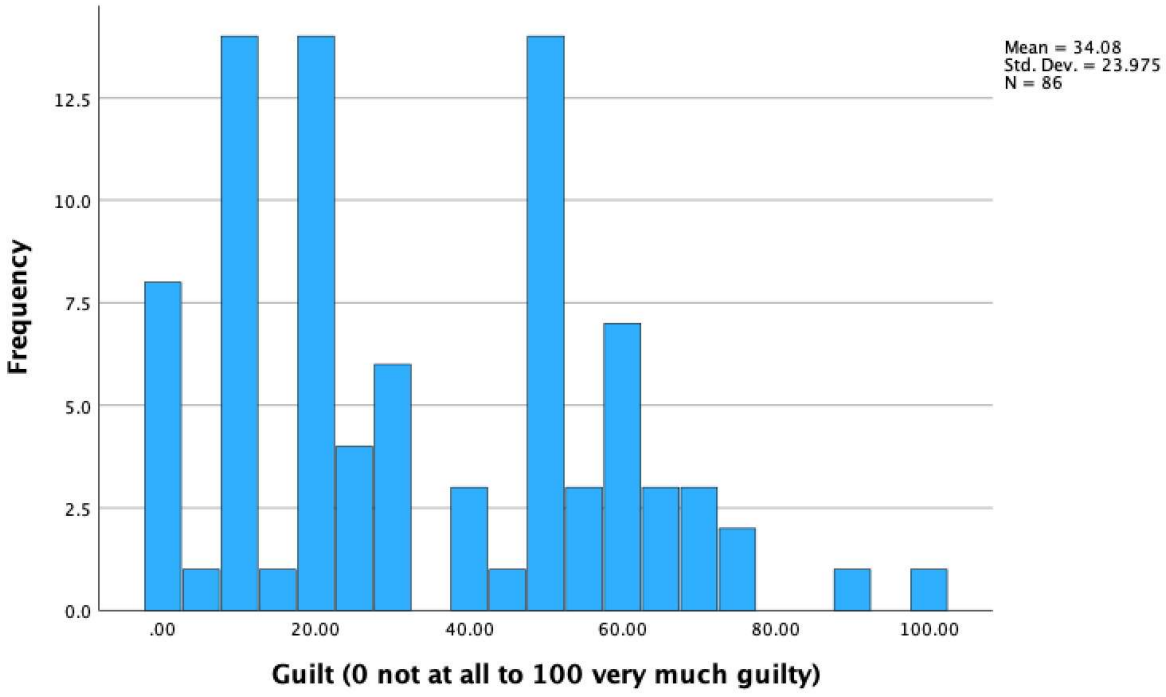

Figure E3. Histogram of guilt scores for male – denial condition

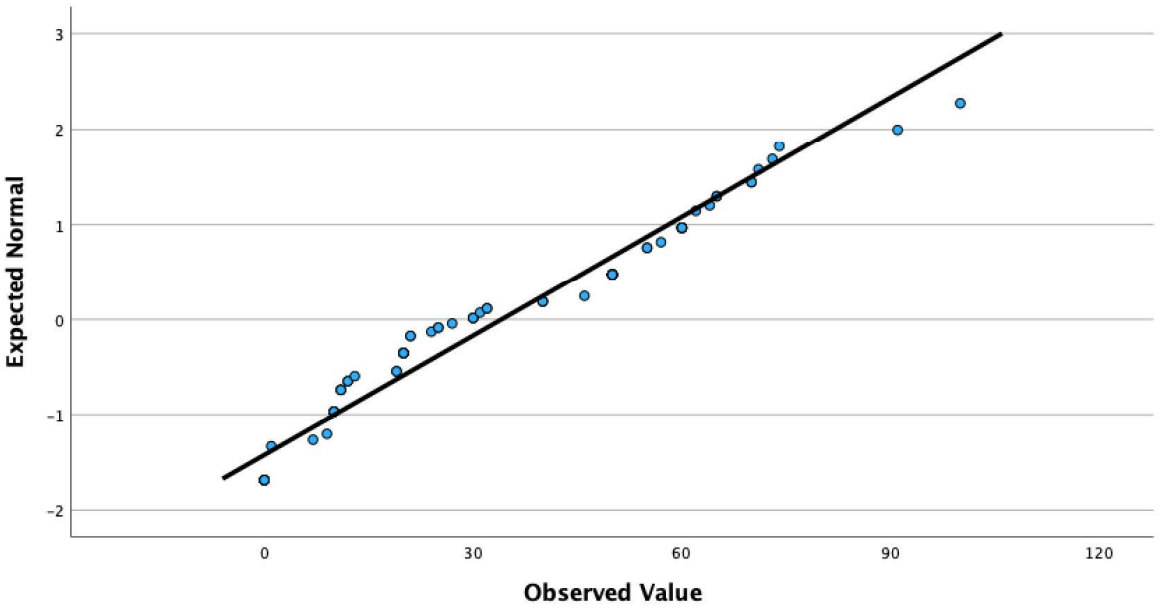

Figure E4. Q-Q plot of guilt scores for male – denial condition

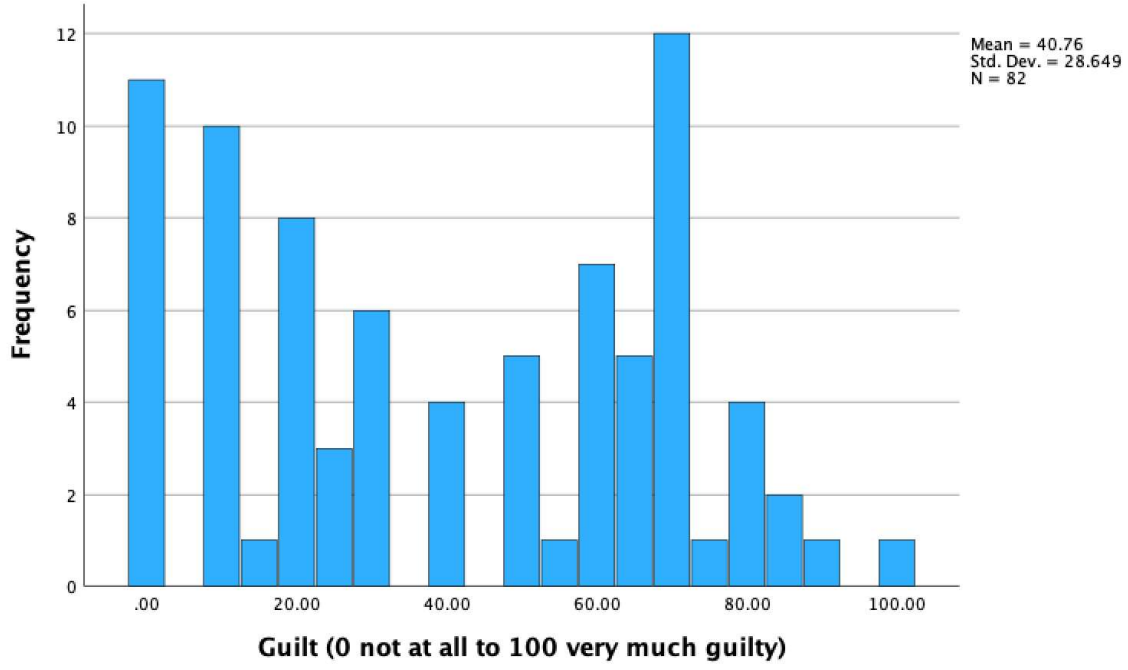

Figure E5. Histogram of guilt scores for female – silence condition

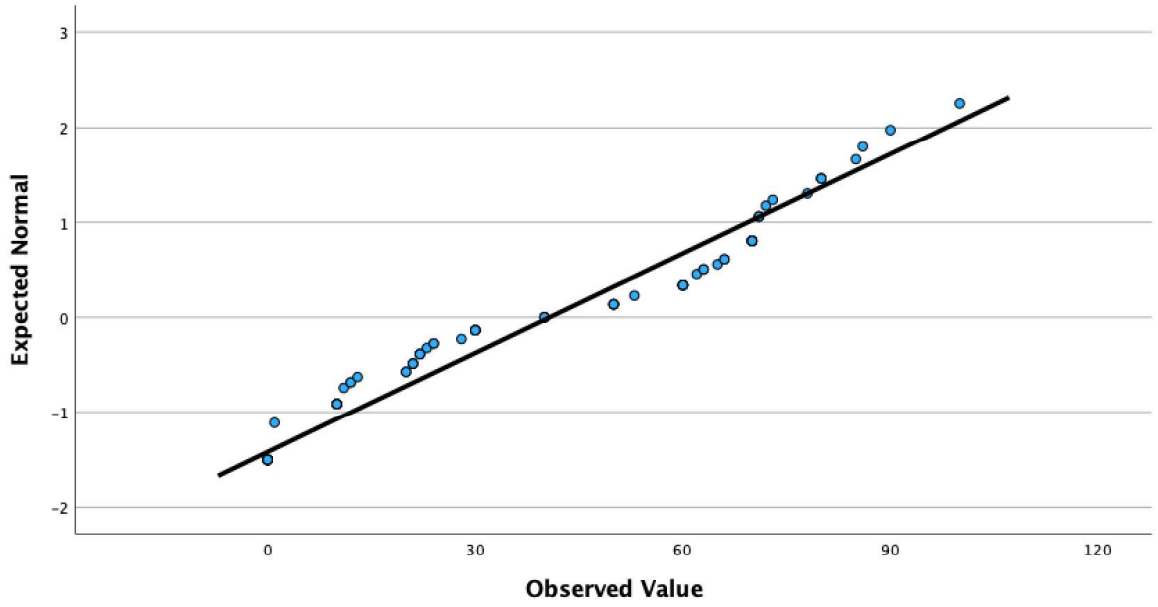

Figure E6. Q-Q plot of guilt scores for female – silence condition

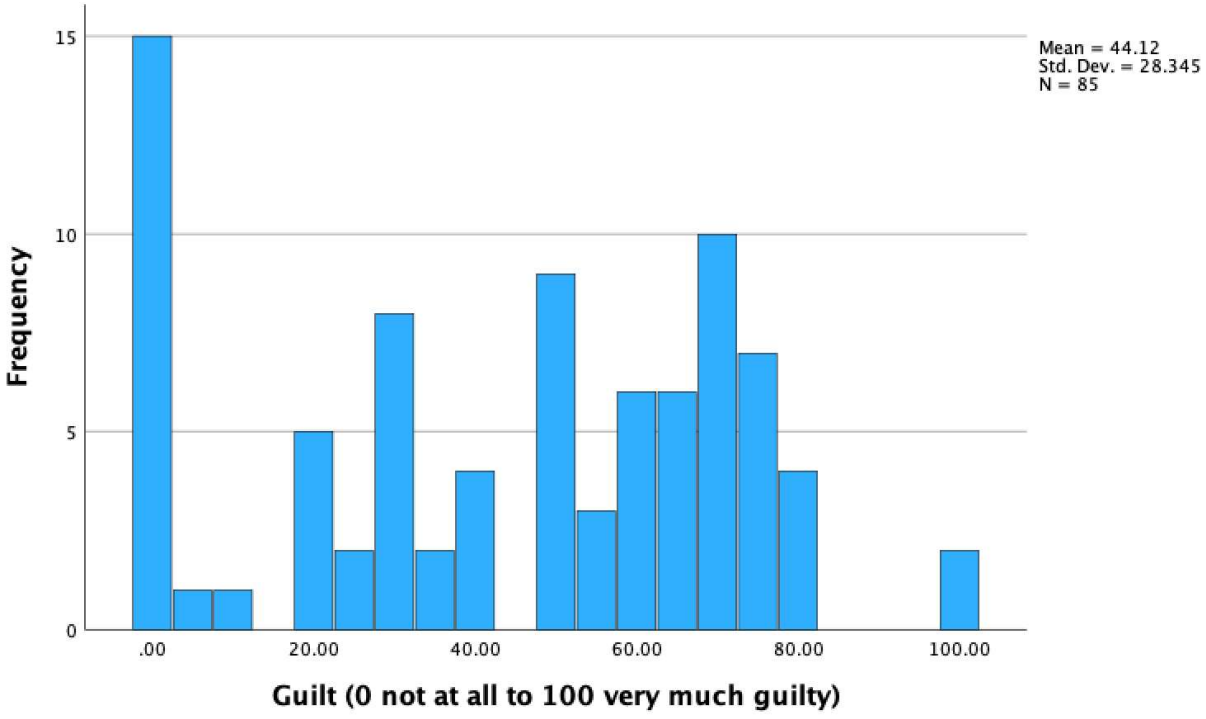

Figure E7. Histogram of guilt scores for male – silence condition

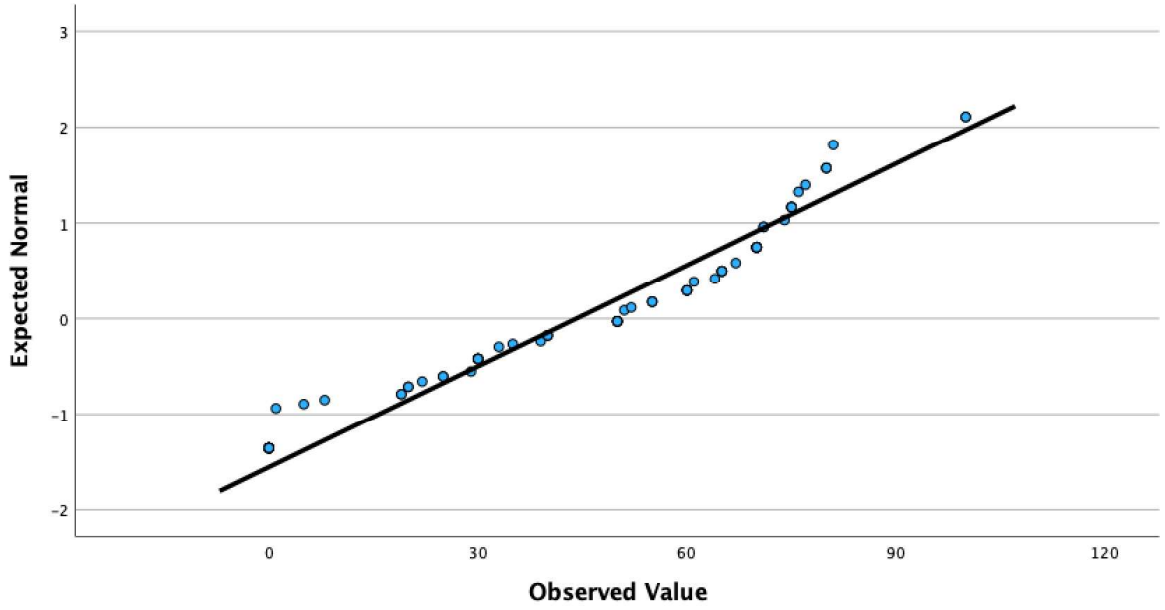

Figure E8. Q-Q plot of guilt scores for male – silence condition

Distribution of Trustworthiness Scores by Condition

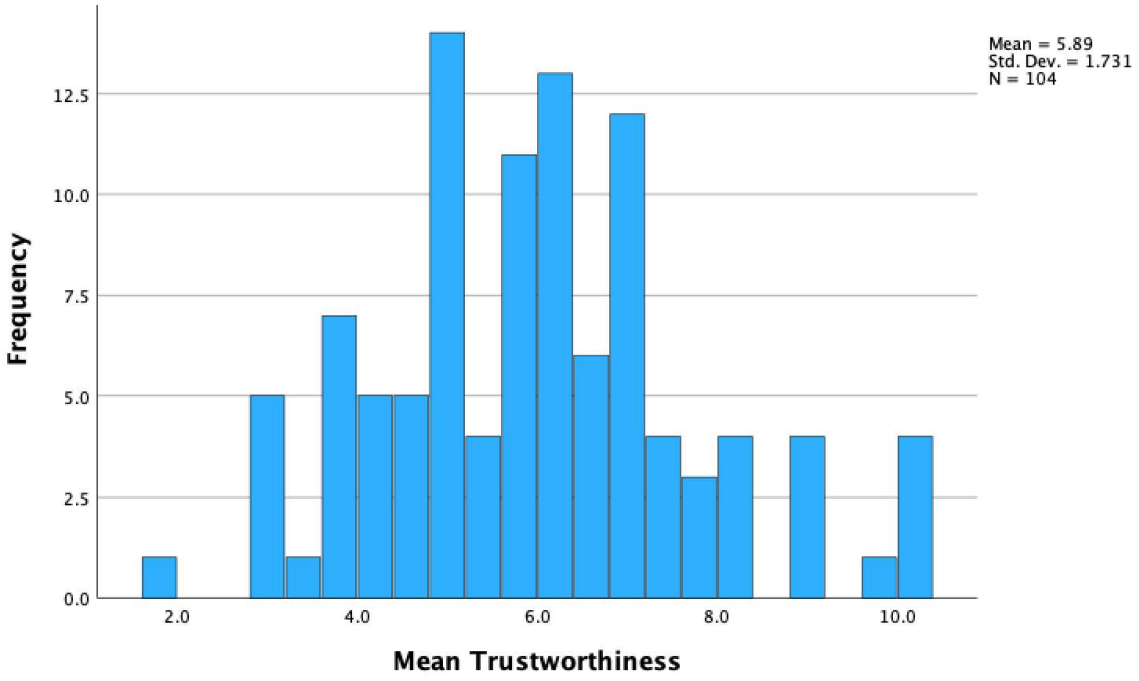

Figure E9: Histogram of trustworthiness scores for female – denial condition

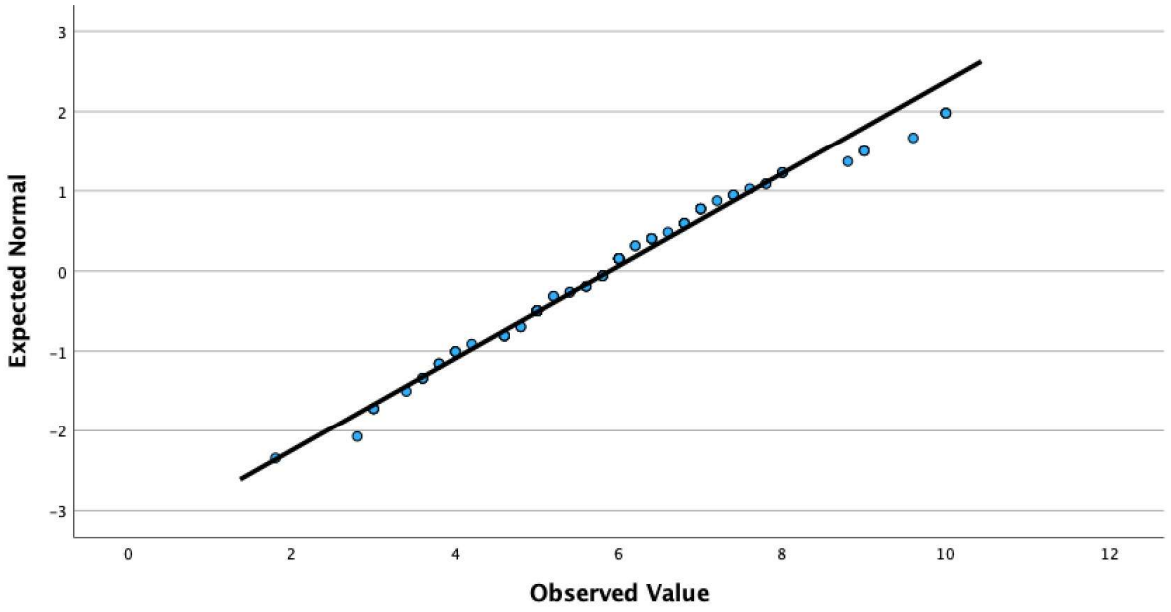

Figure E10. Q-Q plot of trustworthiness scores for female – denial condition

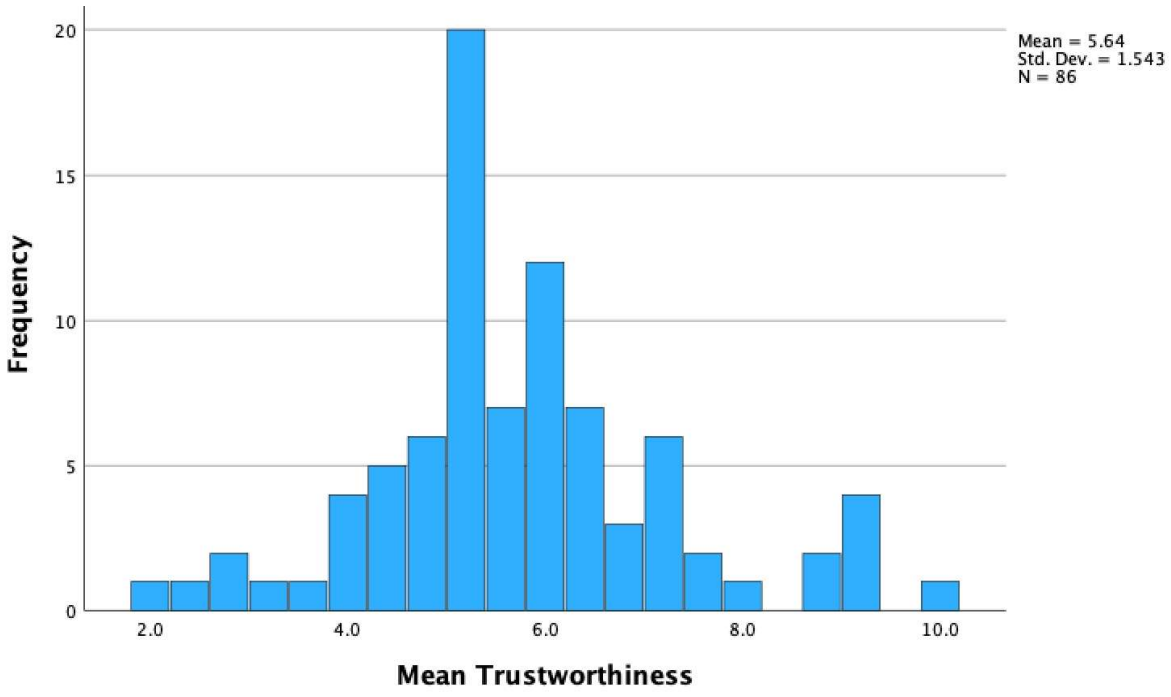

Figure E11. Histogram of trustworthiness scores for male – denial condition

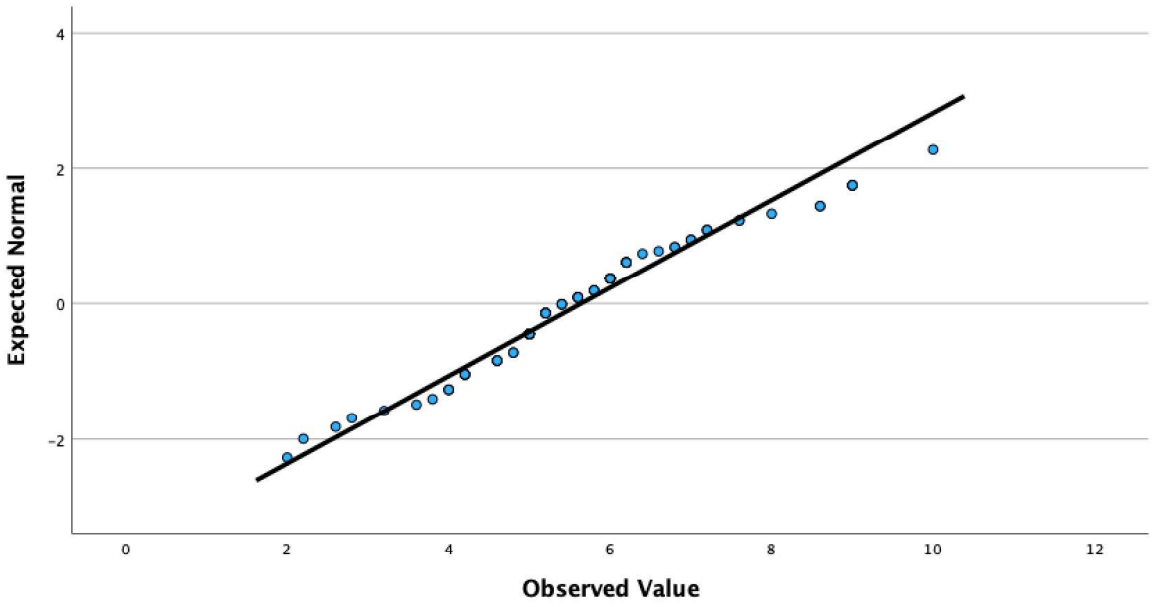

Figure E12. Q-Q plot of trustworthiness scores for male – denial condition

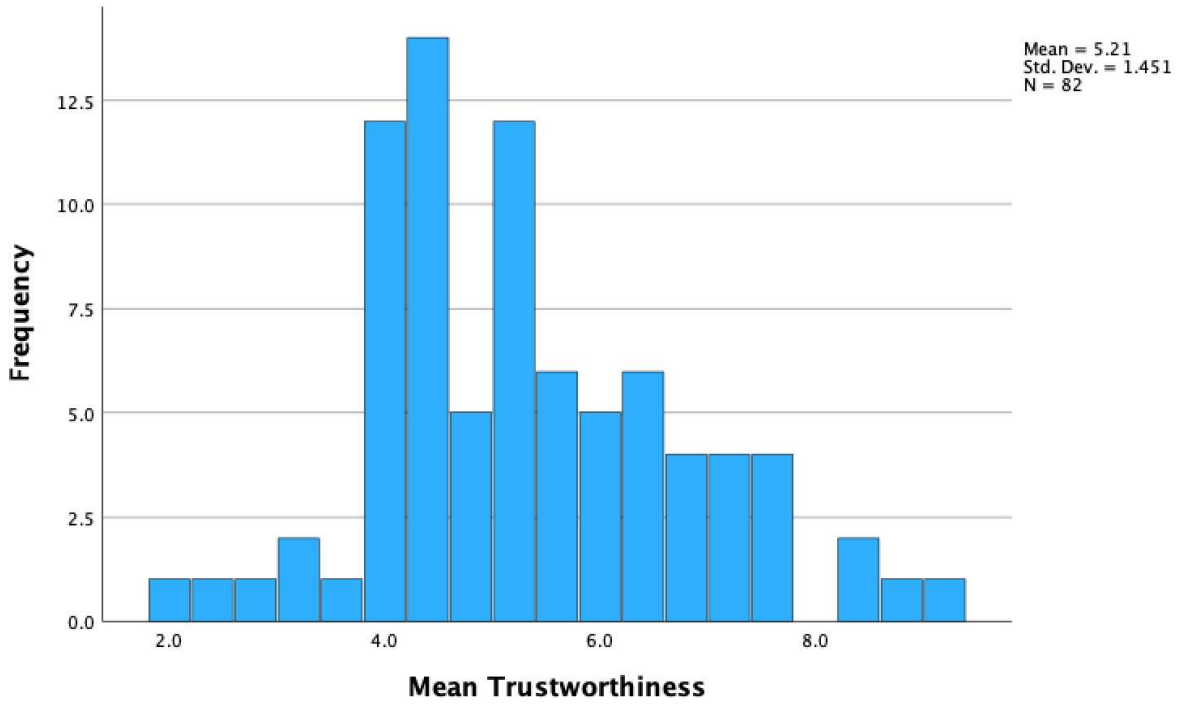

Figure E13. Histogram of trustworthiness scores for female – silence condition

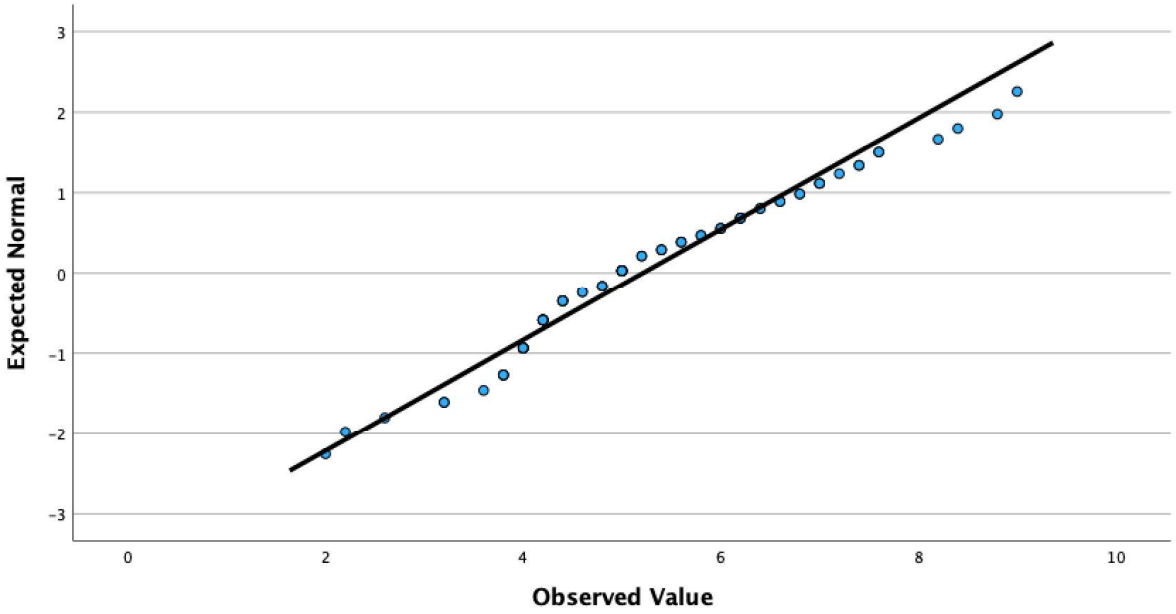

Figure E14. Q-Q plot of trustworthiness scores for female – silence condition

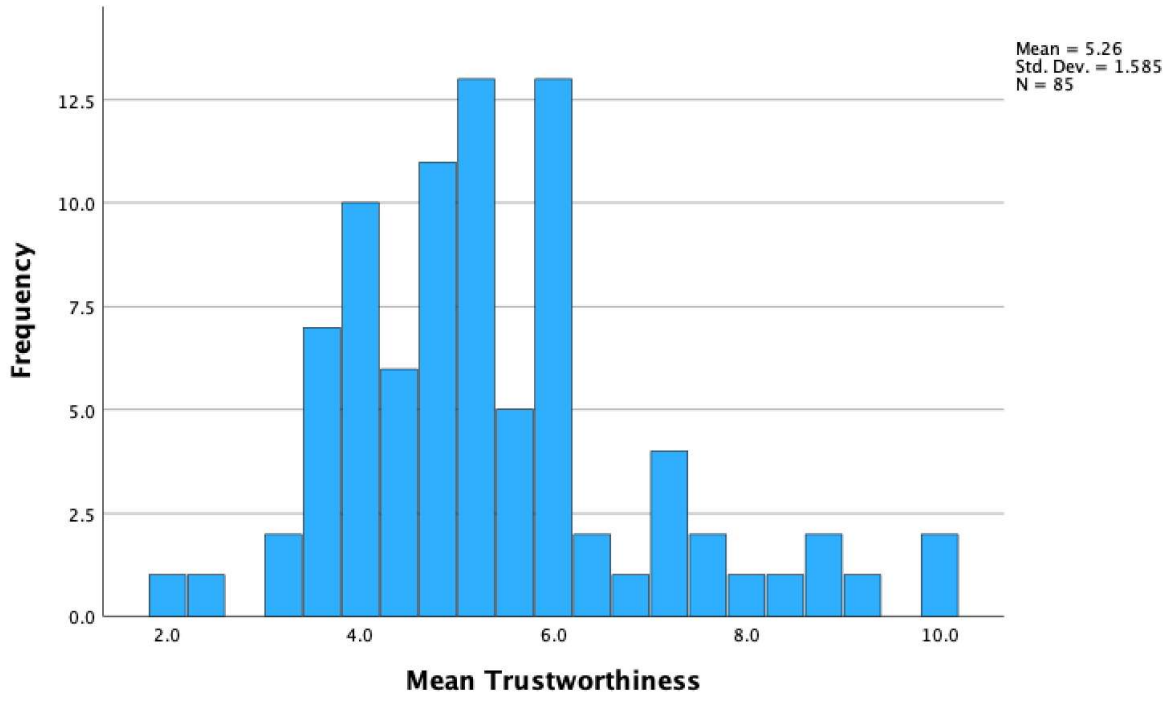

Figure E15. Histogram of trustworthiness scores for male – silence condition

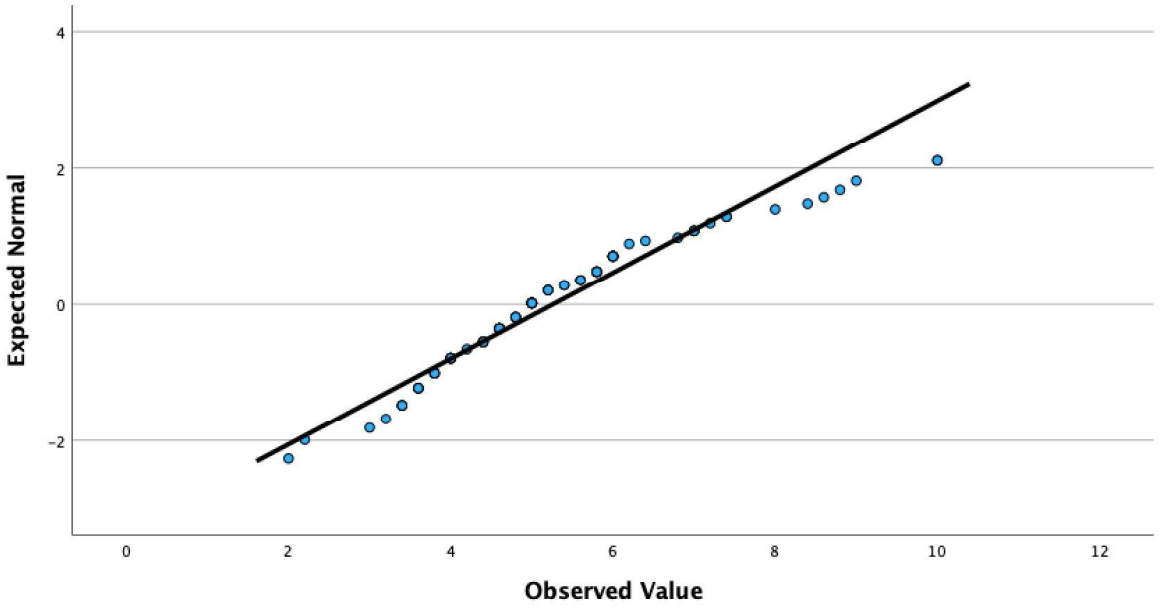

Figure E16: Q-Q plot of trustworthiness scores for male – silence condition

Appendix F

Estimated Marginal Means by Response Type

Table F1

Estimated Marginal Means for Guilt and Trustworthiness by Response Type

Response	Guilt (*M*)	*SE*	95% CI	Trustworthiness (*M*)	*SE*	95% CI
Denial	34.99	1.93	[31.20, 38.41]	5.77	0.12	[5.54, 5.99]
Silence	42.44	2.05	[38.41, 46.46]	5.24	0.12	[5.00, 5.48]

Note. M = estimated marginal means adjusted for gender and interaction effects in the model, CI = confidence interval, N = 357.

Appendix G

Estimated Marginal Means for All Conditions

Table G1

Estimated Marginal Means for Guilt and Trustworthiness by Response Type and Gender

Response	Gender	Guilt (M)	SE	95% CI	Trustworthiness (M)	SE	95% CI
Denial	Female	35.89	2.59	[30.80, 40.99]	5.89	0.16	[5.58, 6.20]
Denial	Male	34.08	2.85	[28.48, 39.69]	5.64	0.17	[5.31, 5.98]
Silence	Female	40.76	2.92	[35.02, 46.50]	5.21	0.18	[4.87, 5.56]
Silence	Male	44.12	2.87	[38.48, 49.76]	5.26	0.17	[4.92, 5.60]

Note. M = estimated marginal means. N = 357.