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Popular saying and moral judgment: The influence of proverbs on moral intuitions

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ABSTRACT

Recent advances in the empirical study of moral psychology indicate that our everyday moral judgments tend to be guided by intuitions. These intuitions are related to heuristic processes and can be shaped by social factors. However, little is known about which social factors can shape our intuitions and how it occurs. Previous research on heuristic processes predicts that any stimulus that generates feelings of familiarity, truth, and fluency can lead to intuitive processing. Considering that proverbs have characteristics related to the generation of such feelings, the main goal of this dissertation is to investigate whether familiar proverbs can shape our intuitions, triggering heuristic processing and influencing people's moral judgments. Our secondary goal is to explore and discuss the implication of these results for normative ethics. We are specifically interested in test previous findings indicating that consequentialist theories involve more deliberation and thus are more reliable than deontological theories to conduct moral judgment. To achieve our goals, we analyzed the differences in the judgment of widely considered immoral behaviors when people are exposed to opinions that condemn or condone them through familiar proverbs versus semantically similar sentences. Based on a two-response paradigm, our results indicate that when opinions condemn immoral behavior, participants tend to agree with them. However, when proverb is used, such agreement is more extreme, generates a greater feeling of rightness and less response revision than when a semantically similar sentence is used. These indicators suggest that proverbs increase the intuitive strength of participants' initial moral convictions, which increases the insensitivity to counterarguments. However, when opinions condone immoral behavior, participants tend to disagree in general and proverbs fail to lead to more extreme responses, greater feeling of rightness and lower response revision than semantically similar sentences. This indicates that the intuitive appeal of proverbs condoning immoral behaviors generated a conflict of intuitions, leading to the observed changes in the aforementioned indicators. That is, the proverbs' effect of enhancing judgments depends on the context in which they are applied. Our results also suggest that the cognitive ease associated with proverbs helps explain their effect on the “condemning condition” but not on the “condoning condition”. Finally, considering our secondary goal, the results indicate that intuitive processes can conduct both consequentialist and deontological judgments. This contradicts previous findings, suggesting that neither deontological nor consequentialist theories are immune to social influence, persuasion and potentially biased judgments.

Keywords: Proverb; Popular saying; Moral judgment; Moral intuition; Ethics.

RESUMO

Avanços recentes no estudo empírico da psicologia moral indicam que nossos julgamentos morais cotidianos tendem a ser guiados por intuições. Essas intuições estão relacionadas a processos heurísticos e podem ser moldadas por fatores sociais. No entanto, pouco se sabe sobre quais fatores sociais podem moldar nossas intuições e como isso ocorre. Pesquisas anteriores sobre processos heurísticos indicam que qualquer estímulo que gere sentimentos de familiaridade, verdade e fluência pode levar a um processamento intuitivo. Considerando que os provérbios possuem características relacionadas à geração de tais sentimentos, o objetivo principal desta dissertação é investigar se os provérbios familiares podem moldar nossas intuições, desencadeando um processamento heurístico e influenciando os julgamentos morais das pessoas. Nosso objetivo secundário é explorar e discutir a implicação desses resultados para a ética normativa. Estamos especificamente interessados em testar descobertas anteriores, indicando que as teorias consequencialistas envolvem mais deliberação e, portanto, são mais confiáveis do que as teorias deontológicas para conduzir o julgamento moral. Para atingir nossos objetivos, analisamos as diferenças no julgamento de comportamentos amplamente considerados imorais quando as pessoas são expostas a opiniões que os condenam ou justificam por meio de provérbios familiares versus frases semanticamente semelhantes. Com base em um paradigma de duas respostas, nossos resultados indicam que, quando as opiniões condenam o comportamento imoral, os participantes tendem a concordar com elas. Porém, quando o provérbio é usado, tal concordância é mais extrema, gera um maior julgamento de certeza e menos revisão de resposta do que quando uma frase semanticamente semelhante é usada. Esses indicadores sugerem que os provérbios aumentam a força intuitiva das convicções morais iniciais dos participantes, o que aumenta a insensibilidade a contra-argumentos. No entanto, quando as opiniões toleram o comportamento imoral, os participantes tendem a discordar em geral e os provérbios deixam de levar a respostas mais extremas, com maior julgamento de certeza e menor revisão da resposta do que frases semanticamente semelhantes. Isso indica que o apelo intuitivo de provérbios que justificam comportamentos imorais gerou um conflito de intuições, levando às mudanças observadas nos indicadores mencionados. Ou seja, o efeito dos provérbios de intensificar os julgamentos depende do contexto em que são aplicados. Nossos resultados também sugerem que a facilidade cognitiva associada aos provérbios ajuda a explicar o seu efeito na "condição de condenação", mas não na "condição de justificação". Finalmente, considerando nosso objetivo secundário, os resultados indicam que processos intuitivos podem conduzir tanto a julgamentos consequencialistas como deontológicos. Isso contradiz descobertas anteriores, sugerindo que nenhuma dessas teorias são imunes à influência social, persuasão e julgamentos potencialmente tendenciosos.

Palavras-chave: Provérbio; Ditado popular; Julgamento moral; Intuição moral; Ética.

RESUMO ALARGADO

Avanços recentes no estudo empírico da psicologia moral indicam que nossas intuições têm uma influência substancial e muitas vezes até guiam nossos julgamentos morais diários. Essas intuições estão relacionadas com processos heurísticos e podem ser moldadas por fatores sociais. No entanto, pouco se sabe sobre que fatores sociais podem moldar nossas intuições e como isso ocorre. A partir de pesquisas anteriores sobre processos heurísticos, podemos prever que qualquer estímulo capaz de gerar sentimentos de familiaridade, verdade e fluência é processado com mais facilidade. Ou seja, de forma menos exigente e mais intuitiva.

Considerando que os provérbios possuem características antropológicas e linguísticas que facilitam o seu processamento, tornando-os amplamente utilizados na comunicação cotidiana, o objetivo principal desta dissertação é investigar se provérbios familiares funcionam como uma manifestação da moralidade transmitida culturalmente capaz de moldar as nossas intuições, desencadeando um processamento heurístico e influenciando os julgamentos morais das pessoas. Uma vez que tal objetivo pode ajudar-nos a identificar situações em que o nosso processamento pode levar a julgamentos tendenciosos, o nosso objetivo secundário é explorar e discutir a implicação desses resultados para a ética normativa. Estamos especificamente interessados em testar descobertas anteriores que indicam que as teorias morais consequencialistas tendem a ser mais confiáveis para conduzir o julgamento moral do que as teorias deontológicas devido, ao envolvimento de uma maior deliberação e inibição das intuições iniciais.

Para atingir os nossos objetivos, analisamos as diferenças no julgamento de comportamentos amplamente considerados imorais (escolhidos a partir de um pré-teste) quando as pessoas são expostas a opiniões que os condenam ou justificam por meio de provérbios familiares versus frases semanticamente semelhantes (também escolhidas a partir de pré-teste). Mais especificamente, 300 participantes foram divididos em dois grupos: enquanto o grupo 1 foi exposto a um comportamento imoral seguido de uma opinião (condenando ou justificando o comportamento) associada à um provérbio, o grupo 2 foi exposto ao mesmo problema seguido de uma opinião semelhante, mas desta vez associada à uma frase semanticamente semelhante ao provérbio.

Como procedimento, utilizamos um paradigma de duas respostas em que os participantes foram instruídos a dar a primeira resposta que lhes viesse à mente e depois a voltar a responder a mesma questão após deliberação. Esse paradigma é particularmente útil para fornecer indicadores relacionados com o tipo de processamento subjacente à tarefa de realizar um julgamento moral. Cada uma das dez vezes em que os participantes foram apresentados a um comportamento seguido de uma opinião, eles tinham que responder se concordavam com essa opinião, a extremidade com que concordavam (ou discordavam) numa escala de 1 a 6, o quanto se sentiam seguros da resposta que forneceram (julgamento de certeza) e ainda, como questão de controlo, eles ainda tiveram que confirmar se realmente forneceram a primeira resposta que lhes veio a mente. Em seguida, foram apresentados às mesmas questões, mas dessa vez foram instruídos a responder sem restrição de tempo e de forma deliberada. Desta forma é possível capturar dados não só sobre a concordância dos participantes em cada condição experimental, mas também sobre o tempo de resposta, a extremidade de resposta e o julgamento de certeza associado às respostas finais e iniciais. De acordo com pesquisas anteriores, podemos esperar que processos intuitivos sejam mais rápidos, mais extremados, com maior julgamento de certeza e apresentem uma menor revisão da resposta inicial.

Dos dez comportamentos apresentados aos dois grupos, cinco foram seguidos de uma opinião que os condenavam e cinco foram seguidos de uma opinião que os justificavam. Para expor as nossas hipóteses, é importante distinguir os processos que ocorrem na "condição de condenação" e na "condição de justificação". Na "condição de condenação" as opiniões estão a apoiar a ideia de que o comportamento apresentado é imoral. Como mencionado anteriormente, todos os comportamentos utilizados foram escolhidos a partir de um pré-teste justamente por serem amplamente considerados

imorais. Ou seja, são comportamentos que já carregam um valor moral prévio ao experimento. Por isso, nessa condição, o julgamento esperado (de condenar aqueles comportamentos) é reforçado pela opinião. Nesta condição experimental, esperamos que os provérbios conduzam a uma maior resposta de concordância, a um menor tempo de resposta, a uma maior extremidade de resposta, maior julgamento de certeza e menor revisão de resposta quando comparados com frases semanticamente semelhantes.

Na "condição de justificação", as opiniões estarão a contrariar crenças prévias de que aqueles comportamentos são imorais. Considerando que os provérbios irão aumentar o apelo intuitivo dessas opiniões, com base em pesquisas recentes, esperamos que a diferença de forças relativas das intuições de aceitar e rejeitar a opinião seja menor do que quando frases semanticamente semelhantes são usadas. Isso significa que os provérbios vão gerar um conflito de intuições e, por isso, poderá haver um aumento dos indicadores de processamento controlado devido a deteção de tal conflito. Ou seja, esperamos maior tempo de resposta, menor extremidade, menor julgamento de certeza e maior chance de revisão de resposta para as opiniões associadas aos provérbios.

Os nossos resultados confirmam a hipótese sobre a "condição de condenação" e indicam que, quando as opiniões condenam um comportamento imoral, em geral os participantes tendem a concordar com elas. Mas, quando provérbios são usados, tal concordância é mais extremada, gera maior julgamento de certeza e é seguida por menos revisão de resposta do que quando frases semanticamente semelhantes são usadas. Estes indicadores sugerem que os provérbios aumentam a força intuitiva das convicções morais iniciais dos participantes, o que aumenta também a falta de sensibilidade a contra-argumentos.

No entanto, quando as opiniões justificam comportamentos imorais, os participantes tendem a discordar em geral. Nesta condição, os provérbios deixam de levar a respostas mais extremadas, com maior julgamento de certeza e menor revisão das respostas quando comparados a frases semanticamente semelhantes. Estes indicadores sugerem que as respostas iniciais intuitivas de condenação desencadeadas pelos comportamentos imorais entraram em conflito com o apelo intuitivo dos provérbios que foram usados para justificá-los. Este conflito entre intuições concorrentes pode ter levado às mudanças observadas nos indicadores acima mencionados, sugerindo que o efeito dos provérbios de potencializar os julgamentos morais depende do contexto em que eles são aplicados. Ou seja, uma pessoa que possui uma crença prévia não muda de opinião apenas por estar na presença de provérbios. Mas, quando esses ditados populares são aplicados de modo a concordar com essa crença, eles são capazes de tornar os julgamentos morais mais extremados, mais confiantes, com menor probabilidade de revisão e mais resistentes a contra-argumentos.

Além da tarefa experimental principal mencionada acima, também foi solicitado aos participantes para responderem a dois questionários breves. Um para avaliar a facilidade cognitiva gerada pelos provérbios utilizados na tarefa anterior. Ou seja, quão fluente, quão familiar e quão verdadeiro eles parecem ser. O segundo questionário foi elaborado para que os participantes pudessem rever as suas respostas finais e escolher uma alternativa correspondente à teoria moral que deu base aos seus julgamentos. Eles podiam escolher entre uma alternativa consequencialista, uma deontológica ou "outra opção". O resultado do primeiro questionário sugere que a facilidade cognitiva associada aos provérbios é alta. Análises de correlações indicam que a facilidade cognitiva ajuda a explicar o efeito dos provérbios na "condição de condenação", mas não na "condição de justificação".

Finalmente, em relação ao nosso objetivo secundário, os principais resultados adquiridos a partir do segundo questionário indicam que tanto os julgamentos consequencialistas quanto os deontológicos podem ser conduzidos por processos intuitivos. Isto contradiz descobertas anteriores, estando contudo, alinhados com propostas teóricas e investigações mais recentes. Ou seja, o resultado que obtivemos sugere que nenhuma das perspetivas morais estudadas (deontológica e consequencialista) é, de um ponto de vista psicológico, imune a influência social, persuasão e julgamentos potencialmente tendenciosos.

A partir dos resultados desta pesquisa podemos discutir a importância de tomar algum tempo para refletir sobre os nossos valores morais e os julgamentos que realizamos. Sabemos que, na vida cotidiana, a automaticidade opera de acordo com a falta de tempo e abre espaço para que fatores como provérbios potencializem os nossos julgamentos em determinados contextos. Por isso, mais do que procurar uma teoria moral confiável, devemos procurar não ser tão confiantes. Isso porque análises de correlações indicam que quanto menor o julgamento de certeza, maior a chance de repensarmos as nossas intuições iniciais e de fornecermos julgamentos mais cuidadosos. Obviamente, ainda podemos ser enviesados, mas isso certamente aproxima-nos de uma relação mais ética com o mundo. Especialmente se considerarmos todas as formas atuais de manipulação de informações (por exemplo, *fake news*) às quais estamos frequentemente expostos e que procuram fertilizar estereótipos, impressões e tendências autoritárias.

Palavras-chave: Provérbio; Ditado popular; Julgamento moral; Intuição moral; Ética.

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1 INTRODUCTION

An important moment in the history of human evolution was marked by socialization at the end of the Pleistocene epoch (Richerson & Boyd, 2020). The cognitive demands to socialize in bigger groups drove the growth of the human brain, which is equipped to acquire, store, organize and retrieve valuable social information (Boyd & Richerson, 2009). Eventually, this process led to language and other activities that allowed us to organize ourselves more effectively for survival. Brain structures have developed and specialized in recognizing other people's mental states (Hare, 2017) and a cultural unity became necessary within groups to create shared rules and behaviors that organize the complex social life (Tomasello, 1999).

All of these elements reconstruct the foundations that gave rise to the human capacity to judge what is right or wrong. Moral judgment is part of our daily lives; we are constantly evaluating the conduct of others and making decisions based on that (Guglielmo, 2015). This ability refers to a variety of affective and cognitive processes that help us to represent the moral value of different situations and behaviors (Greene & Haidt, 2002). According to Chudek and Henrich (2011), it allows to identify and correct social irregularities to ensure effective and cooperative interactions among members of a social group.

After centuries of philosophical speculation on human morality, in the last decades, psychologists began to empirically investigate this topic (Tomasello & Vaish, 2013). Moral judgment does not only involve the representation of values, but also the way they are coded, acquired and modulated by the knowledge of mental states, explicit decision rules, the imagination of distal events and social cues (Greene, 2015). Theorists who seek to investigate morality historically disagree whether judgments are mainly products of intuitions and automatic processes or of reasoning and higher cognition (Greene & Haidt, 2002). Recent empirical discoveries converge on the idea that intuition and reasoning are both important, but intuitive processes tend to dominate. This leads to a dual-process dynamics, in which automatic processes compete with more controlled processes (Kahneman, 2003).

Most of our everyday moral judgments are based on moral intuitions, automatic processes that can be shaped by social factors, such as culture and persuasion (Haidt, 2001, 2007). According to Greene (2014), life in the Pleistocene epoch, marked by the interaction in small groups of hunter-gatherers in constant competition with each other, conceived morality as a biological adaptation. He affirms that moral intuition can be defined as a set of heuristics that are useful for coexistence within groups. Heuristics are efficient shortcuts that allow us to make a judgment or decision without spending a lot of time or cognitive resources (Tversky & Kahneman, 1974). They “exist because they motivate fitness-enhancing behaviors in a computationally efficient manner” (Sinnott-Armstrong, Young & Cushman, 2010, p.17). However, in some contexts, they can also trigger misleading and biased judgments (Sunstein, 2003).

Since recent advances in the empirical study of moral psychology indicate that our intuitions tend to guide our everyday moral judgments and that such intuitions are susceptible to errors and biases, it is important to understand when and how it occurs. However, little is known about the social factors that shape our intuitions and trigger a heuristic processing of moral situations (Lindström et al., 2018). According to Ellemers et al. (2019), the moral value attributed to specific situations can be dependent on language-oriented interpretations and attributions to capture symbolic meanings related to the cultural, religious, or social identity of some person or group.

In the present dissertation, we are interested in investigating the influence of language-oriented interpretations and attributions that can be seen through the groups' moral rules and social ideas incorporated into their lexicon through popular sayings, such as proverbs. Proverbs are idiomatic expressions that are used in the most diverse everyday situations, as in political speeches and advertisements. They remain in use through generations and, according to D’Angelo (1977), they are

so familiar that they are generally accepted without criticism in an argumentative context. This is likely to happen because proverbs have linguistic and anthropological characteristics that facilitate their processing and that can be related to heuristics (see Gibbs & Beitel, 1995; Bohrn et al., 2012). For this reason, we can predict that their presence in a moral context can shape our intuitions.

In an attempt to contribute to the study of this theme, the main goal of this dissertation is to investigate whether the presence of proverbs can influence people's moral judgment and how such influence comes about. Achieving this goal is relevant because it allows us not only to identify the social influence power of proverbs in moral judgments but also to determine its main characteristics and underlying mechanisms that could eventually be generalized. Furthermore, according to Greene (2017, p.2), "understanding the mechanics of moral intuition is not only a worthy scientific effort but also essential for progress in moral philosophy". In other words, it can also assist in the development of rule-based principles that allow us to identify the best way to conduct a moral judgment. Thus, in addition to seeking a descriptive psychological answer about how our moral judgments happen in the presence of proverbs, this dissertation also seeks to discuss the implications of these data from a normative perspective. That is, how the results impact the main philosophical moral theories that drive ethical thinking.

Philosophers and psychologists usually engage in their goals separately (Sinnott-Armstrong; Young & Cushman, 2010). In order to integrate the knowledge of both areas and promote a discussion on the subject at the cognitive science level, the present dissertation intends to explore both descriptive and normative questions stemming from the results of our experimental research. In other words, the goal is to answer and discuss the following questions: Are proverbs factors that tend to influence people's moral judgment? What are the psychological processes through which this influence occurs? How do these fit within current moral judgment theories? What about the main ethical's moral theories? What is the best way to deal with possible bias and still try to get closer to an ethical relationship with the world?

Studying this theme is highly relevant in a world where socialization has become a global phenomenon. In the last decades, the internet has brought new forms of interaction among people, imposing some cognitive challenges to the task of making a moral judgment. Nowadays we have easy access to different information and opinions about different situations through social media. According to Williams (2018), when information is abundant, attentional resources and the ability to process information in a deliberate way are often exhausted and replaced by more automatic and intuitive judgments – a fact that makes us particularly vulnerable to current forms of information manipulation, such as fake news and other deceptive contents.

In the next chapters the theoretical scope of this dissertation will be presented, followed by the research methodology designed to achieve the aforementioned goals. Thereafter, the results will be presented, discussed and the study is closed with the final considerations. The following chapter will address the main theories and evidence that describe how our moral judgments happen. In this way, it will be possible to understand the mechanisms underlying the processing of moral information and identifying their relation to proverbs, philosophical moral theories and other important elements for the present research.

2 LITERATURE REVIEW

2.1 Moral Judgment

The study of morality has a rich history. Understanding morality and its implications for social behavior have always been an important goal for philosophers and psychologists. According to Guglielmo (2015), the most fundamental way in which humans categorize and understand behavior is to differentiate them between good and bad. Moral judgment is an extension of this basic

classification, but it is clearly more varied and complex. In order to understand moral judgment, one of the first questions that must be asked is whether they are products of reasoning and higher cognition or the outcome of emotional and non-rational processes. (Greene & Haidt, 2002).

Theorists have historically been divided between both possibilities. The cognitive revolution of the 1950s and 1960s was the context that led Kohlberg (1984) to build a six-stage model of the development of moral reasoning. Focusing on the idea that moral reasoning drives moral judgment, he approached moral development as a specific case of cognitive development in parallel with developments in logical and social cognition. In the 1980s, other researchers began to claim for an affective revolution. This context has increased the number of studies that defend the importance of moral emotions (Greene & Haidt, 2002).

In the 1990s, researches about "automaticity" in social-cognitive psychology received a lot of attention and the findings began to put into question the accuracy with which we perceive the external world. Also, they reinforced the idea that we rely on a set of affective, unconscious and automatic processes when making inferences and solving problems (Greene & Haidt, 2002). Such influences led to the overcoming of the traditional idea of morality associated only with reason or emotion to the development of more complete and integrative theories about moral judgment.

Currently, one of the most influential approaches to moral judgment is Haidt's social-intuitionist model. This model recognizes the fact that people engage in reasoning when making a moral judgment. However, most everyday moral judgments would be processed automatically. Haidt (2001) states that moral judgments are caused by quick moral intuitions, which are conceptualized as the sudden awareness of an evaluative feeling about a person's character or action. In other words, without any awareness of having gone through the steps of searching and balancing evidence, or by the controlled inference of a conclusion (Haidt & Bjorklund, 2008).

Figure 2.1 represents the social-intuitionist model and how it predicts that the individual and social dimensions interact to produce moral judgments. The first two links represent the individual dimension, while the third and fourth represent the social one. The scheme begins with the occurrence of a provocative situation that triggers the link of intuitive judgment. This link connects the flashes of intuition with conscious moral judgments. The second link represents *post hoc* reasoning, in which the person seeks arguments that support the judgment already reached. That is, with the awareness of a moral judgment, people start the search for reasons that justify it according to their individual and cultural background. In this way, Haidt (2001) points out that we usually have already made a moral

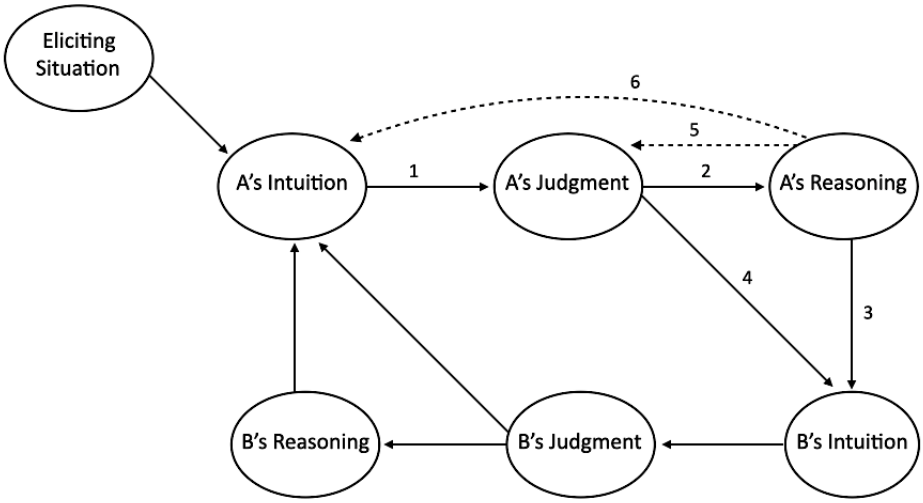

Figure 2.1 The social intuitionist model of moral judgment. The numbered links, drawn for Person A only, are (1) the intuitive judgment link, (2) the post hoc reasoning link, (3) the reasoned persuasion link, and (4) the social persuasion link. Two additional links are hypothesized to occur less frequently: (5) the reasoned judgment link and (6) the private reflection link (Haidt, 2001, p.815).

judgment before we have reasons to support it. However, it is important to remember that Haidt and Bjorklund (2008) admit that it is possible for a person to resist or block certain intuitions based on the values adopted by that person.

To explain the link of reasoned persuasion, Haidt and Bjorklund (2008) resort to discussions of evolutionary psychology around the use of language by humans. Here comes the practice of morality as a social experience, when a person provides some sort of reason to influence others to assume a specific moral judgment. Usually, the reasons that people provide are not a logical explanation, but could rather be seen as attempts to trigger new intuitions. Under this circumstance, people tend to take extreme positions when making moral judgments.

The fourth link in the model stems from the recognition that there are also "means of persuasion that do not involve providing reasons of any kind" (Haidt & Bjorklund, 2008, p.12). That is, automatic and unconscious processes that can influence people's beliefs, attitudes or behaviors through non-verbal processes. Therefore, the fourth link represents the power of social persuasion because people are highly attuned to the emergence of norms in a group (see Asch, 1956; Deutsch & Gerard, 1955). The model suggests that the mere fact that a friend, ally, or acquaintance has made a judgment has a direct influence on others, even when reasoned persuasion is not used (Haidt & Bjorklund, 2008).

These four links make up the core of the model, which gives a causal role to reasoning in moral judgment, but only when it occurs in a social context. Haidt speculates that people rarely privately go beyond their initial intuitions because reasoning is rarely used to question their own beliefs and attitudes. But, of course, there are cases where it can happen (Haidt & Bjorklund, 2008). According to Guglielmo (2015), even though it is the source of many debates, Haidt's model has been supported by evidence that is in agreement with the *post hoc* reasoning claim (that moral reasoning follows moral judgment) and with the intuitive judgment claim (that intuitive or emotional responses directly guide moral judgments).

Although far from being unquestionable, the social-intuitionist model represents an important work in the study of moral judgment and has similarities with other important accounts. For instance, Greene's dual-process model of moral judgment, inspired by the dual-processes theories of higher cognition. Such theories tend to classify our information processing as it is represented in Table 2.1. In

Table 2.1 Clusters of attributes frequently associated with Dual-Process and Dual-System Theories of higher cognition (Evans & Stanovich, 2013, p.225).

Type 1 process (intuitive)	Type 2 process (reflective)
Defining features	
Does not require working memory	*Requires working memory*
Autonomous	*Cognitive decoupling: mental simulation*
Typical correlates	
Fast	Slow
High capacity	Capacity limited
Parallel	Serial
Nonconscious	Conscious
Biased responses	Normative responses
Contextualized	Abstract
Automatic	Controlled
Associative	Rule-based
Experience-based decision making	Consequential decision making
Independent of cognitive ability	Correlated with cognitive ability
System 1 (old mind)	System 2 (new mind)
Evolved early	Evolved late
Similar to animal cognition	Distinctively human
Implicit knowledge	Explicit knowledge
Basic emotions	Complex emotions

the same way, Greene (2014) holds that both conscious reasoning processes and intuitive/emotional processes drive our moral judgments. He gives a more extensive role to moral reasoning than Haidt's model.

Greene's model integrates the possibility of influencing others' moral judgment not only with the modification of their intuitions, but also from reasoned moral principles that can be used to replace moral intuitions through reflection – implying that deliberation has a corrective role (Paxton & Greene, 2010). As displayed in Figure 2.2, Greene also incorporates moral philosophy into his theory and claim that two processes underlie different types of moral judgment: characteristically deontological judgments and characteristically consequentialist judgments. The first one refers to judgments "naturally regarded as reflecting concerns for rights and duties" driven primarily by intuitive emotional responses. The second one refers to judgments that "aimed at promoting the greater good and are supported by controlled cognitive processes that look more like moral reasoning" (Paxton & Greene, 2010, p.513). These two types are related to the deontological and consequentialist moral theories in ethics (Greene, 2008).

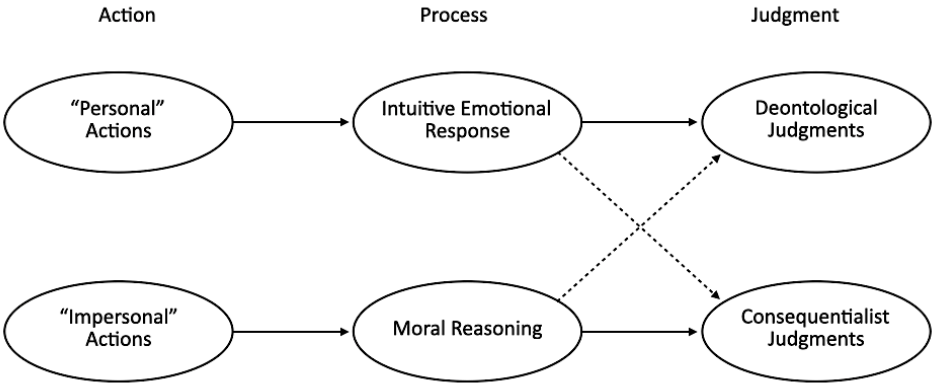

Figure 2.2 Greene's dual-process model of moral judgment (Guglielmo, 2015, p.10).

In sum, Greene's dual-process model and research work try to explain when we engage in more controlled or automatic moral judgments, relating empirical work with deontological and consequentialist moral theories. The main evidence that supports the model is related to a pair of moral dilemmas in which a runaway trolley is on course to kill five innocent workers. In the switch scenario (impersonal dilemma), the hypothetical intervention is flipping a switch to divert the trolley onto a side track, killing a single worker tied to the tracks. In the footbridge scenario (personal dilemma), the intervention is pushing a large man over a footbridge, stopping the trolley, and killing the man (Guglielmo, 2015). Both actions save five people and kill one, but the switch intervention is considered to be permissible by most people and thus consistent with consequentialism while the footbridge intervention is considered to be impermissible and thus inconsistent with consequentialism (Greene et al., 2001).

The explanation, according to Greene (2008, p.10), is that "people tend toward consequentialism in the case in which the emotional response[1] is low and tend toward deontology in the case in which the emotional response is high". A lot of experimental researches support Greene's model. For instance, regions of the brain associated with emotions show greater activation when dealing with personal dilemmas, while regions associated with working memory showed greater activation for impersonal dilemmas (Guglielmo, 2015).

[1] By emotional response, Greene refers to intuitive response. This is because emotional processes are part of our automatic settings in general and are widely considered as an indicator of intuitive moral judgments (Greene, 2014).

However, very recent research has found evidence that both consequentialist and deontological judgments can be driven by intuitive processes (Bago & De Neys, 2019a; Białek & De Neys, 2017). By instructing participants to provide two responses for sacrificial dilemmas – an initial intuitive response under cognitive load and a final deliberate one – Białek and De Neys' (2017) experiments revealed that more than 70% of the cases where people gave a deliberate consequentialist response (guided by System 2), they had already given the same response in the initial phase (guided by System 1). According to this experiment and others (see Bago & De Neys, 2019a), we do not need to engage in deliberation to correct an initial deontological response. This "intuitive response is already typically utilitarian[2] in nature" (Bago & De Neys, 2019a, p.1782). This evidence highlight that System 1 is more informed than what was previously thought, which favors a hybrid view[3] of dual-process models (see Białek & De Neys, 2017; Bago & De Neys, 2019a).

Indeed, this type of two-response experiment was designed to investigate how System 1 and System 2 interact, as the nature of this interaction is not clear (Bago et al., 2018). In addition to these studies, logical and probabilistic experiments revealed interesting evidence by creating a conflict between stimuli expected to be processed by System 1 and stimuli expected to be processed by System 2. For instance, situations where participants should answer which is the gender of a person who is a surgeon and who was taken from a sample of 500 people, where only 5 are males (Bago et al., 2018).

According to Bago et al. (2018), this type of problem creates a conflict between stereotypes (that is more usual to find a man that is a surgeon) and logical-mathematical principles (that in this sample contains a large number of women). Results show that people are sensitive to such conflict when compared with a control-group conflict-free (Bago & De Neys, 2017). The conflict-detection was related to System 2 indicators, such as high response time. However, such detection was also found in situations in which System 2 processing was experimentally minimized and participants had to give an heuristic response (Bago et al., 2018). That is, in addition to being triggered by associations that ran smoothly (e.g., stereotypes), intuitions can also be triggered by stimuli widely considered to be dependent on more controlled processing, such as logical information (Bago et al., 2018).

The underlying idea is that people can implicitly grasp logical principles and automatically activate this knowledge, which allows them to put the heuristic intuition in question without engaging in System 2 computations. According to Bago and De Neys (2020), the heuristic intuition tend to be stronger. The presence of another intuition (i.e., a logical one) allows people to detect the conflict, but it does not imply that they will select the logical response. However, it may also be the case where the logical intuition is so weak that participants fail to detect a conflict (e.g., people with a low educational level). For others (e.g., mathematics specialists), the logical intuition can be stronger than the heuristic, leading them to initially provide the correct answer without any further System 2 engagement (Bago & De Neys, 2020).

Considering the studies above mentioned, Bago and De Neys (2019a) argue that moral judgments may depend on the absolute and relative strength differences between competing intuitions. That is, different intuitions can compete to drive moral judgment according to their variability in strength or activation level. The absolute strength level (that defines the strongest intuition) determines the initial response and its subsequently deliberate change will depend on the relative strength

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[2] Utilitarian is a version of consequentialism that considers that "the morality of an act depends on how it affects human happiness" (Timmons, 2001, p.20).

[3] Traditionally, dual-process models were designed from a serial or parallel view. That is, that the interaction between System 1 and System 2 took place, respectively, 1) from the exclusive initial activation of System 1 by default, which may or may not be followed by the activation of System 2, or; 2) with the simultaneous activation of both Systems, and often System 2 was not completed due to the speed of System 1. However, the recent hybrid view assumes that the interaction between these Systems is more complex than they seem to be and that responses traditionally associated with System 2 can also be cued by System 1. In other words, the latter is more informed and efficient than what was previously thought (Bago & De Neys, 2019a).

difference between both intuitions. "The smaller the difference, the less confident one will be, and the more likely that the initial response will be changed after deliberation" (Bago & De Neys, 2019a, p.1796). In other words, when both intuitions are strong, their relative strength differences will be small and lead to more indicators of deliberate reasoning. In contrast, when the difference between two intuitions is more pronounced they tend to lead to more intuitive indicators (see Bago & De Neys, 2019a; 2019b; 2020).

These very recent studies indicate that there is still a lot to discover about moral judgment beyond the reach of the main theories (as well as about our cognitive processing in general). Some questions that remain open are essential for this dissertation. First, Haidt (2001; 2007) affirms that our moral judgments are based on intuitions that can be shaped by social factors, but he does not specify what those factors are (Lindström et al., 2018). Second, the main theories have been extensively tested mostly using moral dilemmas that are variations of the aforementioned trolley problem, which may raise issues of generalization of the reported findings. Indeed, recent discoveries "add to a growing concern that moral dilemma scenarios may fail to adequately capture everyday moral judgment" (Bauman et al., 2014). Third, recent evidence indicating that stimuli associated with System 2 can be processed by System 1 raises doubts about the circumstances in which this happens (Bago & De Neys, 2019a).

In order to overcome these conceptual shortcomings, this dissertation aims understanding not only what social factors shape our moral intuitions in everyday moral judgments, but also how it occurs. In our daily life, we are rarely faced with moral dilemmas like the trolley problem. Instead, we are constantly evaluating the conduct of others in everyday situations. For example: the gay couple that is going to marry, the father who neglects his children, the woman who aborted, among other common situations that can determine the difficulty degree in coexistence among people and the development of public policies.

Besides, nowadays, people usually do not have enough time to process everyday moral situations carefully. If recent evidence indicates that people provide an intuitive response when System 2 is experimentally minimized, this is likely to happen frequently in everyday moral situations. Especially when people evaluate a moral behavior mediated by other's opinion – which may or may not intentionally influence an intuitive response – as Haidt predicts when describing link 3 of his theory. Considering that popular sayings are often used in moral context, our specific goal is to investigate the influence of proverbs as social factors capable of activating intuitions.

We consider that such a goal can improve insights and discussion inside different approaches, helping to understand the social influences that shape moral judgment in everyday life and the mechanisms underlying this process. To deal with the aforesaid shortcomings, relating them to our goal, the next chapters will address the theories and evidence involved in: 1) the considerations of moral intuitions, the mechanisms and theories that contribute to the idea that proverbs can be an influencing social factor in moral judgment; and 2) the philosophical normative implications that can be involved into everyday moral issues.

2.2 Moral intuitions

"The key point of contact between moral philosophy and scientific moral psychology is moral intuition. Moral philosophers, from Plato on down, have relied on their intuitive sense of right and wrong to guide them in their attempts to make sense of morality" (Greene, 2007, p.41). However, recent work in psychology has achieved answers to descriptive questions about moral intuitions that can impact ancient answers to the normative moral questions in philosophy (Greene, 2014; Sinnott-Armstrong, Young & Cushman, 2010; Haidt & Bjorklund, 2008; Gigerenzer, 2008).

The concept of moral intuition is very broad. Philosophers have related it to beliefs, dispositions to believe, mental states marked by phenomenal characteristics, spontaneous judgment about the truth

or falsity of a proposition, among other aspects (Hannon, 2018). According to McMahan (2013; see also Haidt, 2001 and the above discussion of Haidt's model), moral intuition is better defined as a moral judgment that is not driven by inferential reasoning. That is, we do not need to consult other beliefs to arrive at this type of judgment. Sinnott-Armstrong, Young and Cushman (2010) affirm that moral intuitions are related to strong, stable, and immediate moral beliefs that are held with confidence and tend to resist counter-evidence. Even though, they can be affected by learning and can gradually be shaped by their commitment to a specific moral theory (McMahan, 2013).

The idea that natural selection has designed moral intuition as a psychological module characterized by a fast, automatic and unconscious system has consolidated itself among several researchers. Moral intuition, thus, corresponds to a set of heuristics that are useful for coexistence within groups (Greene, 2014). Heuristics are efficient short-cuts that allow us to make a judgment or a decision without spending too much time or cognitive resources (Tversky & Kahneman, 1974). Although helpful automatic schemes, in many circumstances, heuristics can also be the source of biased conclusions and systematic errors when their use ignores relevant information (Sunstein, 2003).

According to Kahneman and Frederick (2002, p.4), a "judgment is mediated by a heuristic when an individual assesses a specified target attribute of a judgment object by substituting another property of that object – the heuristic attribute – which comes more readily to mind". That is, heuristics occurs through an unconscious attribute substitution. When the target attribute is relatively inaccessible or hard to process, people tend to focus on the heuristic attribute, that is related to the target and tends to be more easily accessible and processed (Sinnott-Armstrong, Young & Cushman, 2010).

This influential idea was developed considering that many judgments are made by this process of attribute substitution (Kahneman & Frederick, 2002). An example is a study by Strack, Martin and Schwarz (1988), in which college students answered a survey that included the following questions: "How happy are you with your life in general?" and "How many dates did you have last month?". When presented in that order, the correlation between the two questions was low and not statistically significant. But it rose to a correlation of 0.66 when the dating question was asked first. The authors suggest that thinking about dating automatically evokes an affectively charged evaluation of someone's satisfaction in this domain of life, which becomes the heuristic attribute when the question of happiness is presented.

"The observed value of 0.66 certainly underestimates the true correlation between the target and heuristic attributes, because dating frequency is not a perfect proxy for romantic satisfaction and because of measurement error in all variables" (Kahneman & Frederick, 2002, p.4). What these results indicate is that when the participants answered the question about their general well-being, they predominantly based their answer on the affect triggered by the "dating" question. With regard to morality, the same heuristic process is likely to occur. Usually, the target attribute of a moral judgment is moral wrongness, which is frequently a property that is hard to reach in practice given the complexity of many moral questions and the constraints on time and information. As a result, the need for a heuristic attribute rises (Armstrong, Young & Cushman, 2010).

Skeptics may argue that moral intuitions do not function as heuristics because there is no objective moral truth and, therefore, moral wrongness can not be a real property or an attribute. However, Sinnott-Armstrong, Young and Cushman (2010, p.15) resort to natural selection and how it makes abundant use of heuristics that substitute attributes in order to produce the most appropriate course of action. "Bad tasting food directly motivates an avoidance response without any direct representation of the underlying probability of toxic or pathogenic qualities. Moral intuitions could be understood in much the same way". For instance, when parents tell their children to avoid men with tattoos, they are substituting specific visual properties for the target property of dangerousness and it will motivate specific actions when their children are in the presence of men with tattoos. Moral judgment motivates various adaptive behaviors that are driven by what we believe we have (or do not have) to do and when we should punish or reward someone. In this widely accepted view, moral

intuitions are subjective psychological states that "exist because they motivate fitness-enhancing behaviors in a computationally efficient manner" (Armstrong, Young & Cushman, 2010, p.17). Then, skepticism about a moral fact is not relevant.

Now that we have established the compatibility between the concept of heuristic and moral intuition, we will seek to provide more specific explanations about the mechanisms underlying heuristics in the moral domain. First, it is important to keep in mind that "understanding heuristics requires an analysis of the social environment in which people act, because heuristics take advantage of environments and environments select heuristics" (Gigerenzer, 2008). According to Kahneman (2011), heuristic processing is related to the cognitive ease with which a stimulus is processed.

All the time multiple computations are going on in our brain in order to maintain and update information about possible threats, news or some occurrence that need our attention (Kahneman, 2011). When everything is going well, we experience a cognitive ease; that is, System 1 (see Table 2.1) is operating because there is no need to redirect attention or mobilize efforts. Kahneman has empirically categorized important factors that lead us to experience cognitive ease (Figure 2.3) and, therefore, a heuristic processing of information.

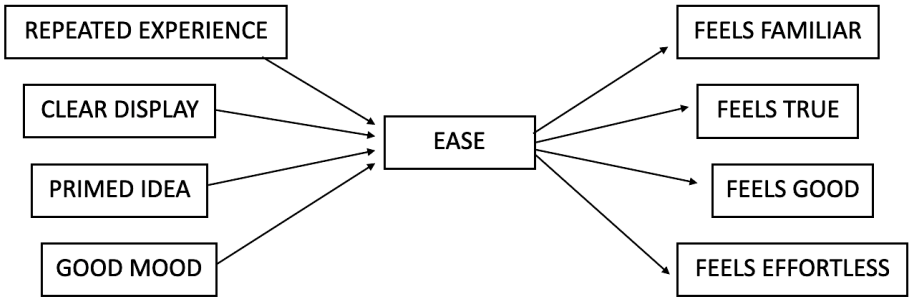

Figure 2.3 Causes and Consequences of Cognitive Ease (Kahneman, 2011, p.60).

Kahneman (2011) intends to show that predictable illusions inevitably occur if a judgment is based on an impression of cognitive ease. Anything that makes it easier for the associative machine to run smoothly will also bias beliefs. "We look smart when they work, but we look dumb when they fail" (Sinnott-Armstrong, Young & Cushman, 2010, p.16). For instance, according to Kahneman (2011), a reliable way to make people believe in falsehoods is frequent repetition because familiarity is not easily distinguished from truth. The familiarity of one phrase in a statement is sufficient to make the whole statement feel familiar and also true. Data on the mere-exposure effect (Zajonc, 1968) also corroborate this idea. Studies on this topic robustly indicate that when a stimulus is presented frequently, it is unconsciously evaluated more favorably than a stimulus with a low frequency of presentation.

Zajonc (1968) argued that the effect of repetition on liking is a profoundly important biological fact. The consequences of repeated exposures benefit the organism in its relation to the immediate animate and inanimate environment. They allow the organism to distinguish objects and habitats that are safe from those that are not, and they are the most primitive basis of social attachments. Therefore, they form the basis for social organization and cohesion – the basic sources of psychological and social stability. The link between positive emotion and cognitive ease in System 1 has a long evolutionary history (Kahneman, 2011).

The elements associated with cognitive ease in Figure 2.3 can help explaining why social factors, such as culture and persuasion, shape our moral intuitions. Therefore, identifying these elements is a good starting point for testing stimuli that can lead to heuristic processing due to their capacity to evoke a sense of cognitive ease. In the next chapter, we will discuss proverbs and present

studies that support the hypothesis that proverbs integrate into their structure key attributes that ease the processing of information and thus promote heuristic judgments in moral contexts.

2.3 Proverbs

The idea presented above indicates that some cultural habits, behaviors, tools and stimulus are so frequent, incorporated since childhood and easily processed that can interfere with how we represent moral values through largely automatic processing. Proverbs can be this type of stimulus since they are familiar and fixed statements that express well-known truths, social norms or moral concerns in a metaphorical and easy to memorize form, which has been perpetuated from generation to generation (Mieder, 2004). They always have an autonomous semantic value in communicative terms and, according to Lopes (1992), this is one of the main differences between proverbs and other idiomatic expressions. That is, proverbs are not just sentence constituents, they can occur as complete statements.

They are an important part of the lexicon of any language and are also part of any cultural heritage (Mieder, 2015). The presence of a proverb in the discourse generates a contextual rupture and is often accompanied by a formal identifier, for example: "as the proverb says", "as the ancients say" (Chacoto, 1994). According to Arewa and Dundes (1964), proverbs act like other forms of folklore, serving as impersonal vehicles for personal communication. A parent can use a proverb to direct a child's action or thought, but when using a proverb the parental imperative is externalized. The responsibility for directing the child is projected into the anonymous past and the child is able to understand it. The proverb used by a father was not invented by him. It is a proverb from the cultural past whose voice speaks the truth in traditional terms.

The proverb never expresses the message of an individual, but of the collectivity represented in the wisdom of social groups (Maingueneau, 2008). In this perspective, the proverb is a statement with a high degree of fluency that belongs to everyone and no one at the same time. For this reason, they seem to be especially useful in oral communication, political rhetoric, song lyrics, newspaper headlines, book titles, advertising slogans, and cartoon captions. Besides, according to McGlone and Tofighbakhsh (2000), their fixed structure marked by rhythmic morphology can increase the experience of hedonic fluency. Hedonic fluency refers to the preference for a stimulus with low demand for cognitive processing (Bohrn et al., 2012).

From an anthropological point of view, proverbs are a special sort of sentence because they play a role in belief systems and symbolic thinking. They are metaphoric and serve to define and stereotype a range of interpersonal situations (Mieder, 2015). In the past, some researchers thought that such characteristics could impose cognitive challenges to proverb understanding. However, various empirical evidence suggests that the ability to understand proverbs reveals the presence of metaphorical schemes that are ubiquitous in everyday thinking (Gibbs & Beitel, 1995).

The neuropsychological study of processing fluency demonstrated the hedonic value of familiarity, represented at a neural level by the activation of the left parahippocampal cortex (PHC) by familiar proverbs but not by basic sentences (Bohrn et al., 2012). Bohrn et al.'s study also demonstrated that familiar proverbs received the highest affective and aesthetic evaluation when compared to unknown proverbs, defamiliarized proverbs with altered content, defamiliarized proverbs with unexpected words and non-rhetorical phrases.

These results are in line with Zajonc's (1968) and Kahneman's (2011) above-mentioned notions of processing fluency and the ease with which sensory inputs are processed. In summary, Bohrn et al. (2012) affirm that familiar proverbs are usually stimuli with high familiarity, typicality, expectation or exposure. Hence, they are processed faster than new or unknown stimuli and are accompanied by positive affective evaluations.

The main goal of this dissertation is to investigate whether familiar proverbs trigger autonomous moral evaluations corresponding to their use. Although there are no similar previous studies to the best of our knowledge, this hypothesis is supported by the research presented in this chapter that points to a relation between proverbs and cognitive ease. In order to further explore the normative implications of the work presented in this dissertation, the next chapter will present the main philosophical moral theories and their relation with recent psychological discoveries.

2.4 Philosophical implications

The second goal of this dissertation is to discuss the implications of the descriptive data from a normative perspective, that is, how the results impact the main philosophical moral theories that drive ethical thinking. As we have seen before, Joshua Greene has engaged on this topic and reached interesting conclusions. His work also opened space for an interdisciplinary discussion on the topic at a higher level.

Many psychologists and philosophers argue that recent empirical work and an evolutionary view of moral intuition have important philosophical implications. Greene (2014) suggests that intuition produces an emotional aversion to harm inflicted by personal force, as seen in the footbridge case. This personal force concept was the only way to harm someone in the Pleistocene environment, giving rise to a "personal force heuristic" (Kumar, 2017). However, it is less important for ethics if you harm a person remotely or directly. Thus, even if an emotional aversion to personal force is often useful, it is also subject to errors and moral judgment biases (Greene, 2014).

Ethics (or moral philosophy) is a philosophical area that investigates morality. In this dissertation, we are particularly interested in normative ethics, that seeks to answer very general moral questions about what to do and how to be considering what is right and wrong (Timmons, 2012). One of the main purposes of moral theories is to guide applied ethics, that is concerned with applying the theoretical principles to real-world moral problems. In other words (Timmons, 2012, p.17):

> Confronted with moral disputes about a variety of moral issues, a reflective person will be led to ask questions about the nature of right and wrong, good and bad, and thus will be led to raise the sorts of questions dealt with in moral theory. The hope is that by answering these more general, theoretical questions, one will then be able to use the results in correctly answering more specific moral questions about the morality of suicide, capital punishment, abortion, and other such issues.

However, there is not just one moral theory. Competing theories sometimes provide competing answers about what is morally right or wrong. So, how can a person know which moral theory is correct? Greene uses his theory to argue against deontology, a class of moral theories that determines the morality of a behavior partially independent of its consequences (Kumar, 2017). Deontological theories are concerned with constraints or moral restrictions that prohibit agents from engaging in certain actions even if by doing so they can produce better outcomes than by conforming to such constraints (Timmons, 2012). In other words, the obligation to promote the good is limited by duties, moral principles and individual rights.

As we have seen in Greene's (2014) theory, characteristically deontological judgments are preferentially supported by automatic emotional responses, while characteristically consequentialist judgments are preferentially supported by conscious reasoning and allied processes of cognitive control. Consequently, he argues that we must abandon these dubious moral beliefs and adopt those that are protected from intuitive error. For him, consequentialism is an option relatively free from the influence of such error. That is because this kind of moral theory is concerned with achieving the best long-term consequences. For consequentialism, an action's moral status is ultimately explained on the basis of the consequences or outcomes associated with the action (Timmons, 2012).

For example, in normal conditions, a consequentialist would evaluate both footbridge and switch cases as morally right because they promote the best possible consequences. Whereas a deontologist would evaluate the footbridge case as morally wrong because this scenario violates deontological constraints when directly pushing a large man over a footbridge. Besides, Haidt and Bjorklund (2008) affirm that deontological theories involve an exercise of rationalization. That is, an attempt to offer *post hoc* justifications for intuitions based on simple heuristics. Greene (2014) argues that once it is empirically established the unreliability of deontological intuitions, the same can be said about the rationalizations of these intuitions within deontology, as well as about any moral beliefs or theories based on them.

In summary, Greene's contribution highlights that we should not rely on deontological moral theories because they tend to be rooted in intuitions guided by heuristic processes and he indicates consequentialism as a good option to guide ethical moral judgments. However, the discussion on this topic has not ended with Greene's work. There are many critics of his theory. One important concern is the indiscriminate use of sacrificial dilemmas to collect data. Bauman et al. (2014, p.2) argue that such dilemmas, especially trolley problems, have rapidly become the most recognizable scientific exemplars of moral situations, but they lack "experimental, mundane, and psychological realism and therefore suffer from low external validity".

The criticism above stems from the observation that trolley problems and other similar sacrificial dilemmas are amusing rather than sobering; they are unrealistic and unrepresentative of real-world moral situations. Besides, they do not elicit the same psychological processes as other moral situations. Hence, it would be prudent to use more externally valid stimuli when testing both descriptive and normative theories (Bauman et al., 2014). Added with very recent evidence that contradicts Greene's findings by verifying that both deontological and consequentialist theories can be processed in an intuitive way (see Bago & De Neys, 2019a; Białek & De Neys, 2017 and the aforementioned discussion on this topic), such argument is a relevant motivation for this dissertation to investigate the philosophical implications of Greene's theory associated with everyday moral situations.

Before proceeding, there is an important theoretical issue that must be overcome. Many critics deny that scientific research on moral judgments has any potential to inform moral philosophy. The "is-ought" gap is a famous argument that affirms the existence of a logical gap between empirical claims about what something "is" and the philosophical claims about what it "should" be (Kumar, 2017). The objection is that the work done by science is normatively insignificant because descriptions do not help with normative questions. Greene (2014) build his counter-argument to show that science can be employed to provide a direct challenge to moral values.

According to his *debunking* argument, we begin with a normative question, for instance: Do people make good moral judgments when confronted with moral dilemmas? Then, we look for descriptive insights: Since science tells us that people's judgments are, at least sometimes, sensitive to simple heuristics that may be morally irrelevant. Then, we should face another normative question: Ought people's moral judgments be sensitive to such things? If the answer is no, then we have earned an interesting normative conclusion: People, at least sometimes, do not make good moral judgments in response to moral dilemmas, for they are inappropriately sensitive to simple heuristics. In this way, he has shown that interesting scientific facts about moral psychology can, when combined with normative assumptions, lead us to interesting normative conclusions (Greene, 2014).

Once Greene's counter-argument bridges the "is-ought" gap, we are now ready to move on. In addition to investigating the relationship between proverbs and intuitive moral judgments, we will seek to categorize the deontological and consequentialist reasons associated with intuitive and controlled moral judgments in everyday moral situations. In this way, we will be able to compare Greene's conclusion (and conclusion of other important similar studies) with data acquired from real-world moral problems, contributing to the discussion of their normative implications. That is, under

what conditions should we accept or reject intuitive moral judgments? What is the relation between them and moral theories? What is the best alternative to conduct ethical thinking? In order to answer these (and previous) questions, the next chapter will present an overview of the main references that helped us to build the goals, hypotheses and methodological procedure presented below.

3 OVERVIEW

Summing up, recent advances in the empirical study of moral psychology indicate that our intuitions have a substantial influence and often even guide our everyday moral judgments (Greene, 2014; Sinnott-Armstrong, Young & Cushman, 2010; Sunstein, 2003; Haidt, 2001; 2007). Such intuitions are related to heuristic processes that can be shaped by social factors (Haidt, 2001; 2007). However, little is known about which social factors can shape our intuitions and how it occurs (Lindström et al., 2018).

Considering the causes and consequences of cognitive ease postulated by Kahneman (2001), we can predict that any stimulus that generates feelings of familiarity, truth, fluency (e.g., being primed or presented repeatedly) is processed more easily. That is, less demanding and more intuitive. Since proverbs are widely used within social groups and have characteristics associated with cognitive ease (see Bohrn et al., 2012; Mieder, 2004; Chacoto, 1994; Lopes, 1992; Arewa & Dundes, 1964), one of our goals is to discover whether proverbs could shape intuitions and influence moral judgments. In addition, we also seek to verify how this occurs. That is, which processes underlie the effect of proverbs on moral judgments, especially in everyday moral situations where we are often exposed to social influence.

A robust way to investigate the type of processing underlying a task is the two-response paradigm, in which people first respond to a problem under some sort of cognitive load and then respond again in a free condition (i.e., without cognitive load) (Bago & De Neys, 2019b). One specific two-response paradigm is the one developed by Thompson and colleagues (2011). In this paradigm, participants are instructed to provide an intuitive first response as quickly as possible. Then they can provide a final response without time constraints (Thompson et al., 2011). In this way, we "gain direct behavioral insight into the timing of intuitive and deliberative response generation" (Bago & De Neys, 2019b, p.4).

This paradigm was first proposed to answer the following question: When do people rely on their intuitions (i.e., first intuitive outputs) and when do they engage in more effortful thinking? Thompson et al. (2011) hypothesized and found that initial, intuitive answers are accompanied by a metacognitive experience, called feeling of rightness (FOR), which can signal when additional analysis is needed. Indeed, FOR predicts the engagement in deliberate reasoning to deliver a final response: the lower the FOR, the higher is the engagement in effortful deliberation and vice-versa.

More specifically, in this framework, the participants are instructed to give the “first answer that comes to mind” immediately after reading a problem and then rate the feeling of rightness associated with their response (as a control question, they are later asked if they really had given the first answer that came to their mind). They then have unlimited time to formulate a final judgment and deliver a final FOR about this second response. The initial judgments thus correspond to intuitive outputs that may (or may not) remain in final judgments after rethinking.

According to Vega et al. (2020), Thompson and colleagues have found a robust paradigm to discover when our intuitions prevail and when they are overcome with moral judgments stemming from more effortful thinking: it depends on the feeling of rightness that accompanied those intuitions. As aforementioned, the higher is the FOR triggered by the stimulus or judgment context, the more likely we are to feel confident in our intuitions and thus the less likely we are to engage in further deliberate processing. In the present study, in addition to a measure of FOR, we have included a

measure to assess the moral judgments extremity. More extreme and polarized judgments tend to be more often based on heuristic processing (Vega et al., 2020).

Thus, considering previous findings (Vega et al., 2020; Bago & De Neys, 2019; Thompson et al., 2011), we can expect that processing fluency or ease of processing stemming from the use of proverbs will lead to higher initial FOR, lower initial response time (RT), extremer responses, and less response revision. Furthermore, we expect lower rethinking times (final RT) and higher final judgment of confidence (final FOR) as an indication that moral judgments tend to remain guided by initial intuitions (stemming from the use of proverbs).

Based on these indicators, our general hypothesis is that proverbs generate faster, more confident and extremer moral judgments than simple sentences with the same semantic meaning. In order to explore the effect of these stimuli on moral judgment, we built experimental conditions in which proverbs and semantically similar sentences are associated with different moral values (right vs. wrong) to favor certain moral judgments about some problem. In this way, we can verify not only if the effect of proverbs is different from semantically similar sentences, but also the circumstances in which this occurs.

As will be explained in detail in the next chapter, to control external variables, we used in our experiment everyday behaviors that are widely considered immoral. Such behaviors were followed by opinions that used proverbs or semantically similar sentences to condemn or condone them. These materials were divided into two groups. Both were exposed to the same behaviors followed by opinions associated with the same moral value (condemning or condoning them) but with different stimuli (proverbs x semantically similar sentences).

Considering such material and experimental paradigm, we aim to achieve our main goal:

- Investigate whether familiar proverbs work as an embodiment of cultural transmitted (and socially shared) morality that can shape our intuitions, triggering heuristic processing and influencing people's moral judgments.

In general, we hypothesize that such influence occurs and that proverbs with high cognitive ease evaluation will lead to judgments more intuitive than its semantically similar sentences. More specific hypotheses are described below.

3.1 Condemning immoral behavior

In “condemning condition” – when proverbs and semantically similar sentences (SSS) are used to condemn immoral behaviors – we hypothesize that:

- Participants will tend to agree more with opinions that use proverbs;
- Proverbs will be processed more fluently than SSS and, therefore, the initial response time will be shorter for proverbs, as well as initial response extremity and FOR will be higher;
- Proverbs will lead to intuitive final judgments. That is, less response revision, lower final RT, higher final response extremity and final FOR.

This is expected since the initial intuitive tendency to condemn an immoral behavior is going to be aligned (and reinforced) by the proverb, which facilitates the ease with which the condemnation is going to occur.

3.2 Condoning immoral behavior

In the “condoning condition” – when proverbs and semantically similar sentences are used to condone immoral behaviors – the initial condemning intuitive responses triggered by the immoral behaviors are likely to conflict with alternative responses that actually justify the behaviors. We hypothesize that, in the case of proverbs, these alternative responses gain an intuitive appeal. Which,

according to Bago and De Neys (2017), can determine the effects on judgment depending on its relative and absolute strength (see Bago & De Neys, 2017).

Specifically, we expect that the initial condemning response intuitively triggered by an immoral behavior is not going to be overturned by opinions that condone the same immoral behavior. However, when these opinions involve the use of proverbs, they may more often trigger or reinforce weaker intuitions to actually condone the immoral behavior. Hence, the activation difference between these opposing intuitions (relative strength) is going to be less pronounced in the case of proverbs compared to SSS. As a result, it is expected that proverbs lead to increased response times, lower feelings of rightness, reduced response extremity, and increased response revision when compared to SSS.

Figure 3.1 illustrates the expected impact of proverbs (compared to SSS) when used to condemning and condoning immoral behaviors by depicting the strengths of participants' intuitive (condemning and condoning) responses.

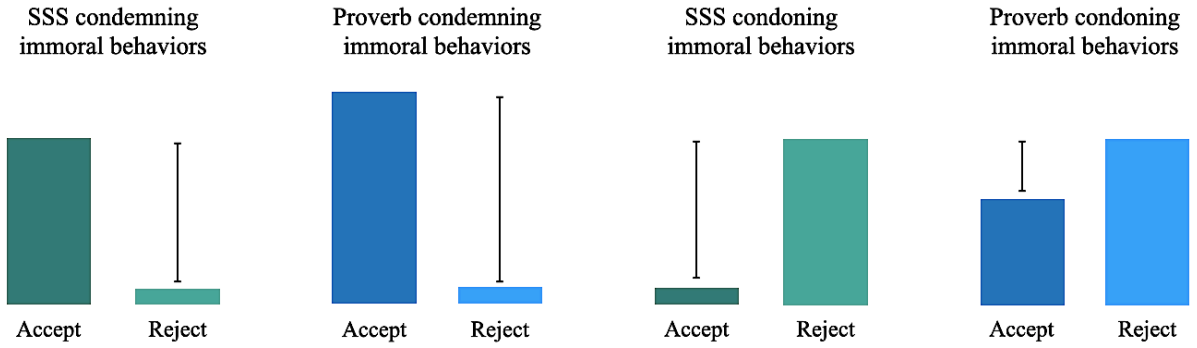

Figure 3.1 Illustration of possible absolute and relative strength differences between intuitions to accept and reject opinions in each experimental condition. In the condemning condition, the intuition to accept the opinion will always have higher absolute strength and the opposite occurs in the condoning condition. We predict that proverbs will increase relative strength difference in condemning condition and decrease it in condoning condition (compared with predictions to SSS).

3.3 Implications for moral philosophy

In addition to the goal and the hypotheses aforementioned, advances in empirical research on moral judgment also led us to set goals about the implications for moral philosophy. According to Greene's (2014) studies, deontological moral theories are disadvantaged in relation to consequentialists, as they are associated with intuitive judgments – more likely to be biased. However, besides having low external validity, the evidence that supports it was recently challenged by research that found that consequentialist judgments can also be processed intuitively depending on the circumstances (see Bago & De Neys, 2019a; Białek & De Neys, 2017). For this reason, we set another goal:

- Categorize deontological and consequentialist reasons attributed by people to everyday moral judgments and observe their relation with intuitive and controlled judgment indicators.

We do not have a specific hypothesis about this last goal. Since there is contrary evidence, we aim to explore how such moral theories are related to the task we proposed to discuss how the results fit the main theories and the implications for moral philosophy. Thus, this dissertation contributes with descriptive and normative questions, seeking to evaluate how we can achieve an ethical relationship with the current world using ancient heuristics.

4 METHOD

In this chapter, we present in detail the method used in our experiment. We got inspired by the framework developed by Thompson et al. (2011). As aforementioned, Thompson et al. (2011) experimental paradigm has been used to export the dynamics of judgment by categorizing and distinguishing between heuristic and more deliberate, controlled processes (see Bargh et al., 2012; Bago & De Neys, 2018; Vega et al., 2020). We apply this experimental paradigm to accommodate ten everyday moral situations composed of immoral behaviors followed by opinions that condemn or condone them through the use of proverbs or semantically similar sentences to such proverbs.

In this way, we are able to compare the conformity and influence in moral judgment generated by proverbs by contrasting them with propositions that have the same semantic meaning but lack the main structural features of the proverbs. We aim to determine if there are differences in judgments that can be specifically attributed to the proverbs' structure. In order to control for contextual influences, all the moral behaviors presented are widely valued as morally wrong. After performing this main experimental task, the participants were asked to answer two brief questionnaires. The first served to assess the cognitive ease associated with the proverbs used in the problems presented previously. The second served to evaluate participants' reliance on deontological versus consequentialist reasons associated with their moral judgments.

4.1 Participants

Three hundred and forty-two individuals over the age of 18 agreed to participate in the online survey conducted through Qualtrics. The recruitment of participants took place through digital platforms and they received no financial incentive to do so. Five participants were excluded for answering "no" to the control question in all the situations presented. Thirty-seven of the participants were excluded from an analysis based on a box-plot chart. These participants presented extremely high initial RT, indicating that they did not follow the instructions. The final sample of 300 participants had a mean age of 47 years (*SD*= 15.62 years), 198 (66.2%) were females and 251 (83.7%) lived most of their lives in an urban area. The majority of the sample had a high educational level, with graduates (47.7%), masters (20.3%) and doctors (6.3%) adding up to 223 of the participants. All of them were randomly assigned to one of the two experimental conditions, each condition being composed of 150 participants. The experiment was approved by the scientific research ethics committee of the Faculty of Psychology (University of Lisbon).

4.2 Materials

In the main experimental task, each one of the ten situations presented is composed of an immoral behavior followed by an opinion. The opinions either condone or condemn the immoral behavior through the use of proverbs or through the use of descriptive sentences that convey the same meaning of the proverbs. Both groups are exposed to the same immoral behaviors and followed by the same opinions about them. The difference between groups is that when a proverb is used to support some specific opinion in Group 1, the semantically similar sentence of such proverb is used in Group 2. In this way, we are able to verify if there is a difference in the effect of proverbs and semantically similar sentences that can be attributed to the proverbial structure instead of its semantic content (see Table 4.1).

To guarantee that we chose familiar proverbs and sentences semantically similar to them, a pre-test was conducted through Google form. Sixty participants of Portuguese origin evaluated twelve proverbs retrieved from Machado's (1998) book "*O grande livro dos provérbios*". The participants were instructed to indicate on a rating scale from 1 ("never heard") to 5 ("many times") how common

Table 4.1 Structure of material presented to participants in the main experimental task.

Behavior	Opinion (Group 1)	Opinion (Group 2)
A	I think it is morally wrong because "semantically similar sentence to the proverb X"	I think it is morally wrong because "proverb X"
B	I think it is morally right because "proverb X"	I think it is morally right because "semantically similar sentence to the proverb X"

it was to hear certain proverbs. After that, they were asked to choose one of the three options presented that would correspond semantically to each proverb. They were also able to write a fourth alternative if they wanted. From this survey, we chose five proverbs that were considered very familiar and five semantically similar sentences that were widely associated with these proverbs. A second pre-test was conducted to select behaviors widely considered to be immoral (evaluated as wrong instead of right). 66 Portuguese participants evaluated 27 usual moral behaviors from 1 ("totally wrong") to 9 ("totally right"). We selected the ten behaviors that were evaluated as more morally wrong (between 1 and 3).

The experimental task was composed of 10 immoral behaviors followed by ten opinions that involved five proverbs and five sentences with semantic meanings similar to those of the proverbs. After evaluating each opinion about the behaviors, the participants further evaluated how familiar the proverb was, how true it seemed to be and how fluent was the reading of the proverb on a rating scale from 1 to 5. Then, they were asked to answer one last questionnaire about the moral theories underlying their final judgments. They were reminded of their final response about their (dis)agreement with the (im)morality of some behavior and asked to indicate the most relevant reason underlying it: A) Because this behavior (do not) respects the moral duties and principles that we must follow or the individual moral rights; B) Because this behavior (do not) generates the best possible consequences or promotes social well-being; C) Other option. Note that the alternatives were designed considering the main general characteristics attributed to each moral theory (see Timmons, 2012).

4.3 Procedure

Participants were randomly divided into two groups and tested online. Testing took approximately 20 to 30 minutes. After agreeing to the consent terms and reading the instructions, participants were exposed to the immoral behaviors (behaviors sequence of presentation was randomized for each participant). Each behavior was followed by an opinion condoning or condemning the behavior. In each trial – behavior and opinion – participants were asked to give the first answer that came to mind, whether they agreed with the opinion or not. After choosing "yes" or "no", participants rated the intensity with which they agreed or disagreed on a rating scale from 1 ("very little") to 6 ("completely"). After indicating the response extremity, they provided their feeling of rightness on a rating scale from 1 ("no confidence that I made a good judgment") to 6 ("very confident that I made a good judgment"). Then, they were asked whether their initial response was the first that came to mind (a control question to make sure participants complied with instructions). Finally, these same steps were repeated, but participants had no time restriction this second time and were encouraged to think carefully before responding (see Figure 4.1).

Initially, participants underwent two training trials to get used to the task. Before presenting a new behavior for the first time, participants were always reminded that they must give the first answer that comes to mind, as fast as possible. Before presenting the behavior for the second time, they were reminded they could now think carefully (with no time pressure) prior to give their answer. After the experimental trials, participants responded to two short questionnaires. In the first one they were presented to the five proverbs used in the previous tasks and asked to rate the familiarity, feeling of truth and reading fluency of each one of them on a rating scale from 1 ("not even a little") to 5

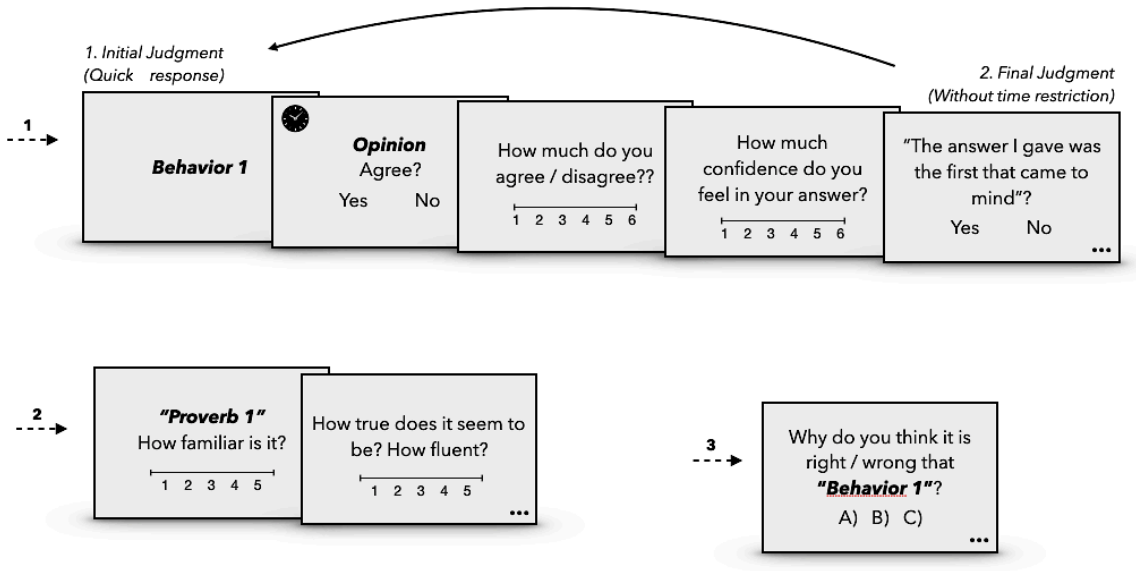

Figure 4.1 Experimental paradigm. First dotted arrow represents the main experimental task. The last two represent the questionnaires, where: 2) assess cognitive ease and 3) assess moral theories.

("totally"). In the second one, they were reminded about their final judgments in each trial and were invited to identify the main reason underlying their responses. For this, they could select one of three options corresponding to deontological reason, consequentialist reason or another reason.

5 RESULTS

The control question on whether participants gave the first answer that came to mind showed that this was almost always the case. The 6.58% of trials in which this did not occur were excluded. RT data were transformed to $\log_{10}$ prior to analysis in order to normalize it. The agreement data were analyzed through Chi-square and McNemar test. In addition, we create a continuous variable to test the agreement through other statistical tests. Such agreement data, as well as, extremity and FOR data were resistant to possible transformations and present normality violations. For this reason, we run three types of analysis: non-parametric, parametric and parametric with Bootstrap (BCa). The objective is to present robust data that has the largest number of convergent results, as this is pioneering research. Whenever the results of statistical tests converge, we will only present the results of the parametric test. If there are differences among the tests, significant data will be presented and a footnote will be used to inform the divergences. For more details, see the list of appendices.

The data are reported below in sections. We have first reported results that test condemning condition followed by the condoning condition. Within these sections, we presented results to test the hypothesis about the differences between judgmental operations in the presence of proverbs and semantically similar sentences (SSS). These results focus on between- and within-participants analysis, which allows us to test the hypothesis and understand how the experimental paradigm fits our goals. We performed Chi-square or multivariate ANOVA for between-participants analysis and McNemar or ANOVA with repeated measures for within-participants analysis (also associated with bootstrap and its respective non-parametric test). Finally, we also performed correlations to analyze the relationship between variables (including questionnaires' data).

5.1 Condemning condition

In this section, we present the results of the dependent variables for cases where participants responded to opinions that condemned the presented immoral behaviors.

5.1.1 Agreement

Chi-square results indicate that there is no significant difference in agreement between both stimuli when they are used to condemn behaviors (Figure 5.1). The results reveal that people tend to initially agree when an opinion condemns immoral behavior in the presence of a proverb (68.3%), as well as in the presence of its SSS (70.1%). The same happens with the final answers for both proverbs (70.1%) and SSS (72.8%). In order to perform a within-participants analysis, we used the McNemar test and the results show that initial and final agreement was significantly different only for cases in which SSS are used, $\chi^2(1)= 4.696$, $p= .03$. That is, although there are no differences between stimuli, participants revised more their responses when exposed to SSS.

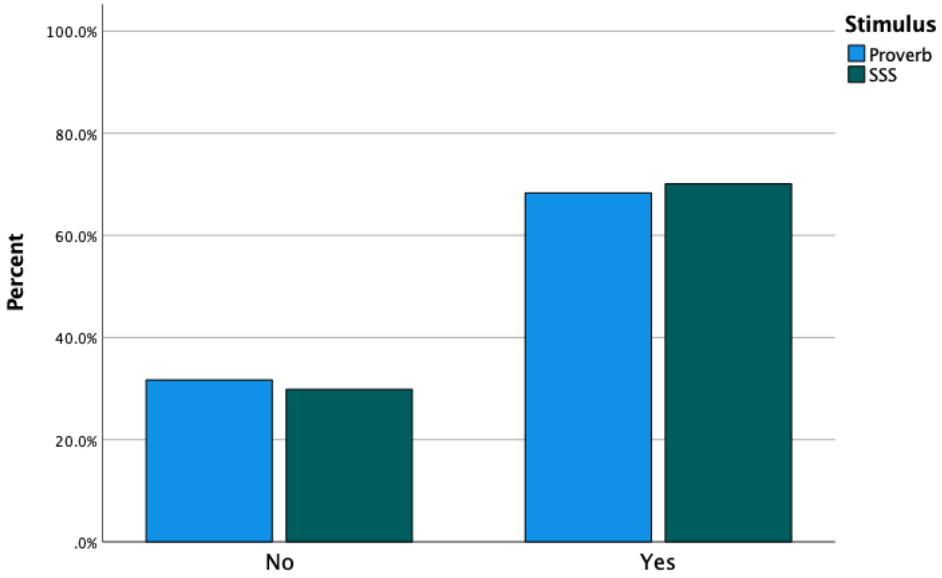

Figure 5.1 Bar-chart of agreement results to opinions that condemn behaviors.

5.1.2 Response time

The results show significant difference between proverb and SSS when they are condemning behaviors (see Figure 5.2). Initial RT was higher for SSS ($M= .84$, $SD= .15$) than for proverb ($M= .77$, $SD= .15$), $F(1)= 16.67$, $p< .001$, $\eta p^2= .053$. The same happens for final RT. Participants spend more time to deliver a final response when in the presence of SSS ($M= .73$, $SD= .23$) than proverb ($M= .66$, $SD= .26$), $F(1)= 5.53$, $p= .019$, $\eta p^2= .018$. The within-participants analysis revealed that the initial and final RT are significantly different when opinion condemns behaviors through SSS, $F(1)= 6.73$, $p= .01$, $\eta p^2= .043$ and proverb, $F(1)= 19.12$, $p< .001$, $\eta p^2= .114$. That is, for both stimuli, the time to provide a final response decrease.

5.1.3 Extremity

Results on initial extremity indicate that there is a significant difference between the cases that use a proverb ($M= 4.96$, $SD= .80$) and its SSS ($M= 4.64$, $SD= .90$), $F(1)= 10.11$, $p= .002$, $\eta p^2= .033$. It

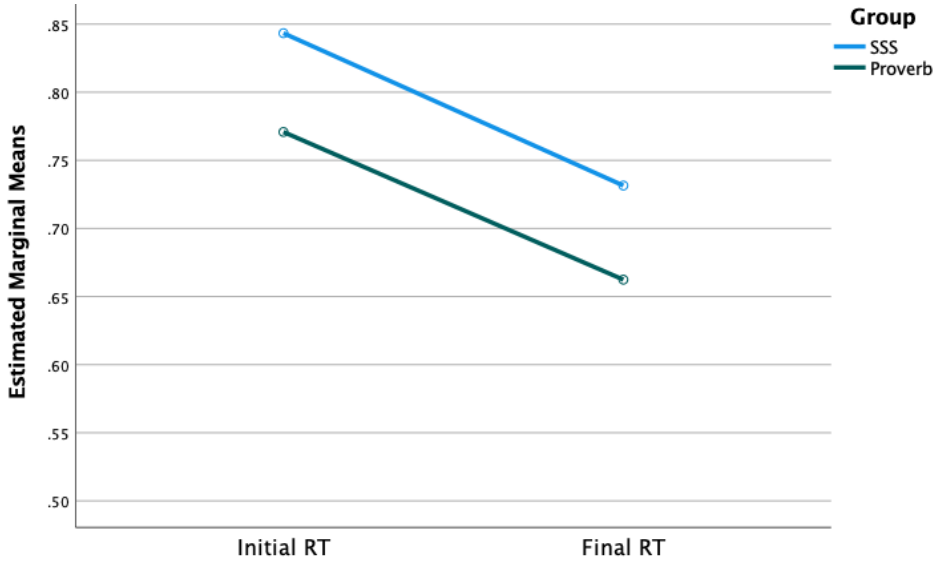

Figure 5.2 Results of RT (log10) to opinions that condemned immoral behaviors.

shows that proverbs make judgments more extreme when they are used to condemn immoral behaviors. The same happens in the final judgment: there is significant difference between stimuli, $F(1)= 6.54$, $p= .011$, $\eta p^2= .021$. Proverbs ($M= 5$, $SD= .79$) have more extreme final agreements than their SSS ($M= 4.76$, $SD= .82$). The within-participants analysis revealed that there is a significant difference between initial and final responses for cases in which the opinion condemns behaviors through SSS, $F(1)=12.2$, $p< .001$, $\eta p^2= .076$. This indicates that there is a greater revision on the extremity of agreement for SSS cases, suggesting a more controlled process. Which does not happen in the case of proverbs (see Figure 5.3).

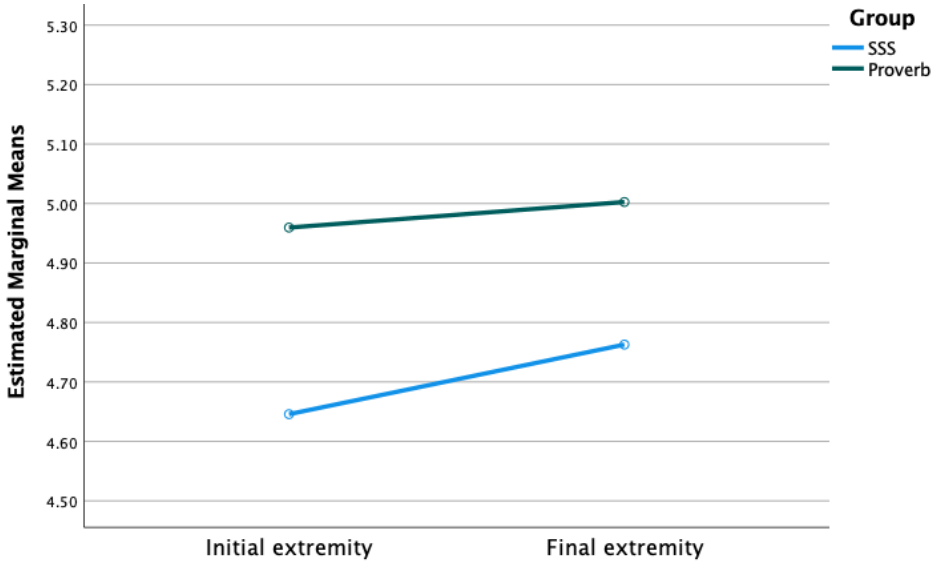

Figure 5.3 Results of response extremity to opinions that condemned immoral behaviors.

5.1.4 Feeling of rightness

Initial results on FOR reveal a significant difference between stimuli, $F(1)= 14.74$, $p< .001$, $\eta p^2= .047$. Proverbs ($M= 5.14$, $SD= .71$) generate greater confidence in judgment than SSS ($M= 4.79$,

SD= .85). The same happen in final FOR: proverbs (*M*= 5.16, *SD*= .73) condemning immoral behavior leads to significantly higher FOR than those that use SSS (*M*= 4.93, *SD*= .80), *F*(1)= 6.77, *p*= .01, ηp^2= .022. From a within-participants perspective, we can see that FOR increases slightly when proverbs condemn behaviors. But, it is only significant for SSS, *F*(1)= 17.36, *p*< .001, ηp^2= .104 (see Figure 5.4). This indicates that, as well as the results on extremity, the revision of these responses is greater for SSS cases. That is, this stimulus leads to greater control in processing.

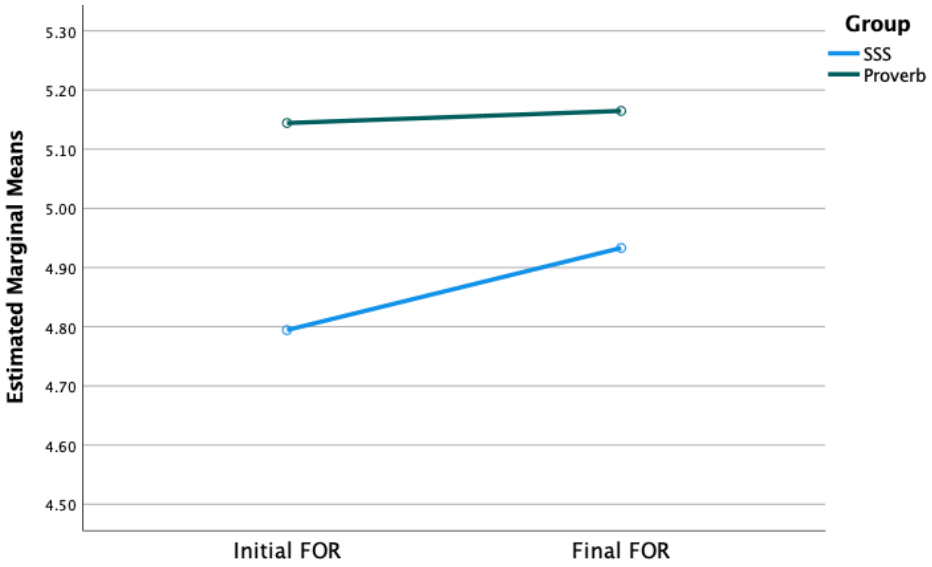

Figure 5.4 Results of FOR to opinions that condemned immoral behaviors.

5.1.5 Partial discussion and paradigm adherence

Taken together, these results suggest that, although both stimuli do not present differences in the high pattern of agreement, proverbs (compered with SSS) lead to more processing fluency (faster responses), greater feelings of rightness and more extreme responses, when they are used to condemn immoral behaviors. Furthermore, the difference between initial and final responses for SSS, but not for proverbs, suggest that upon more careful reasoning SSS participants change their initial responses. Whereas, reasoning does not affect responses in the case of proverbs. It is thus likely that the higher FOR of initial responses in the case of proverbs decreased the tendency to revise the initial responses.

Our results are supported by robust indicators since correlation results show that they fit previous evidence (see Table 5.1 and Appendix E). Item-based correlations are in line with what was predicted by Thompson et al. (2011) and Vega et al. (2020). That is, the longer the RT, the lower the response extremity and FOR. The longer the rethinking time, the less maintenance of initial intuitions. Besides, we also found correlations indicating that the higher the extremity and FOR, the higher the agreement and maintenance of initial intuitions. In addition, only proverbs show significant correlations between agreement and final RT: the more people agree with them, the less time it takes to rethink. Indicating that agreeing with a proverbial opinion that condemns immoral behavior is a response that has a certain degree of automaticity. It means that they provide an intuitive final judgment when in the presence of proverbs, as the results above indicate.

5.2 Condoning condition

In this section, we present the results of the dependent variables for cases where participants responded to opinions that condoned the presented immoral behaviors.

Table 5.1 Item-based correlations to test the paradigm adherence in condemning condition.

Condemn			Initial agreement	Initial RT	Initial extremity	Initial FOR	Final agreement	Final RT	Final extremity	Final FOR	Maintenance of intuition
Proverb	Initial RT	Correl.	-.005	1	-.156	-.135	-.027	.183	-.115	-.088	.033
		Sig.	.887		<.001	<.001	.478	<.001	.002	.018	.386
	Initial extremity	Correl.	.217	-.156	1	.691	.208	-.079	.744	.532	.075
		Sig.	<.001	<.001		<.001	<.001	.035	<.001	<.001	.046
	Initial FOR	Correl.	.166	-.135	.691	1	.153	-.112	.621	.733	.112
		Sig.	<.001	<.001	<.001		<.001	.003	<.001	<.001	.003
	Final RT	Correl.	-.102	.183	-.079	-.112	-.074	1	-.123	-.168	-.267
		Sig.	.006	<.001	.035	.003	.048		.001	<.001	<.001
	Final extremity	Correl.	.186	-.115	.744	.621	.212	-.123	1	.742	.140
		Sig.	<.001	.002	<.001	<.001	<.001	.001		<.001	<.001
	Final FOR	Correl.	.111	-.088	.532	.733	.129	-.168	.742	1	.196
		Sig.	.003	.018	<.001	<.001	<.001	<.001	<.001		<.001
SSS	Initial RT	Correl.	.007	1	-.261	-.253	-.034	.258	-.256	-.234	-.017
		Sig.	.853		<.001	<.001	.368	<.001	<.001	<.001	.649
	Initial extremity	Correl.	.212	-.261	1	.669	.163	-.207	.756	.597	.217
		Sig.	<.001	<.001		<.001	<.001	<.001	<.001	<.001	<.001
	Initial FOR	Correl.	.143	-.253	.669	1	.080	-.226	.545	.779	.191
		Sig.	<.001	<.001	<.001		.034	<.001	<.001	<.001	<.001
	Final RT	Correl.	-.048	.258	-.207	-.226	.000	1	-.217	-.296	-.180
		Sig.	.205	<.001	<.001	<.001	.994		<.001	<.001	<.001
	Final extremity	Correl.	.196	-.256	.756	.545	.207	-.217	1	.692	.144
		Sig.	<.001	<.001	<.001	<.001	<.001	<.001		<.001	<.001
	Final FOR	Correl.	.151	-.234	.597	.779	.138	-.296	.692	1	.183
		Sig.	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001

5.2.1 Agreement

In condoning cases, people tend to initially disagree both in the presence of proverb (87.8%) and its SSS (83.1%). Chi-square results indicate that such difference is significant between stimuli, $\chi^2(1)= 6.39$, $p= .011$ (see Figure 5.5). The same happens for final responses, $\chi^2(1)= 6.95$, $p= .008$. Proverbs (88.3%) are the targets of greater disagreement than SSS (83.4%). From the within-participants analysis, we found that there is no significant difference between initial and final responses for any stimuli. That is, participants tend to maintain their initial intuitions to deliver a final judgment.

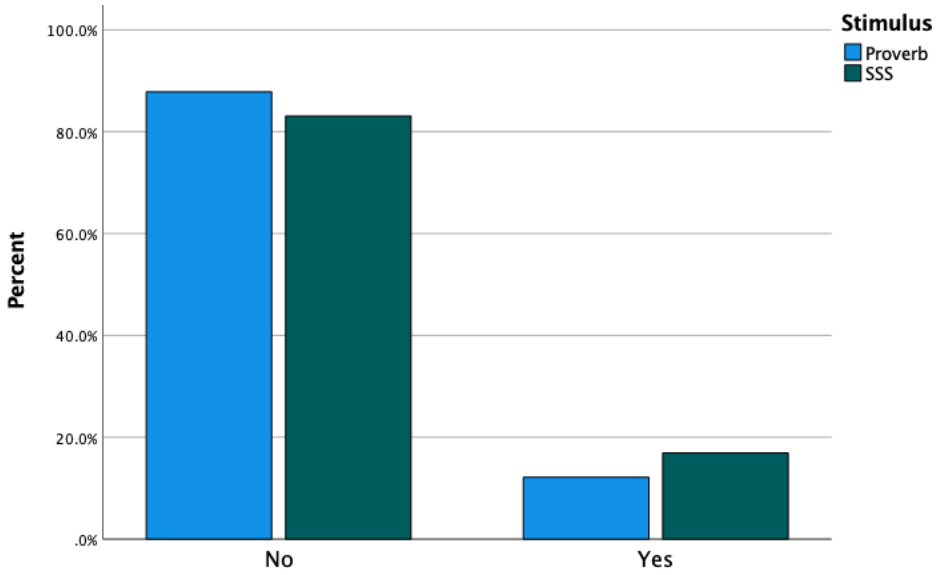

Figure 5.5 Bar-chart of agreement results to opinions that condone behaviors.

5.2.2 Response time

The results show significant difference between proverb and SSS when they are condoning behaviors (see Figure 5.6). Initial RT was higher for SSS (M= .72, SD= .14) than for proverb (M= .62, SD= .14), $F(1)$= 31.3, p< .001, ηp^2= .095. The same happens for final RT. Participants spend more time to deliver a final response when in the presence of SSS (M= .56, SD= .22) than proverb (M= .50, SD= .21), $F(1)$= 6.28, p= .013, ηp^2= .021. The within-participants analysis revealed that the initial and final RT are significantly different when opinion condones behaviors through SSS, $F(1)$= 79.09, p< .001, ηp^2= .347 and proverb, $F(1)$= 54.35, p< .001, ηp^2= .267.

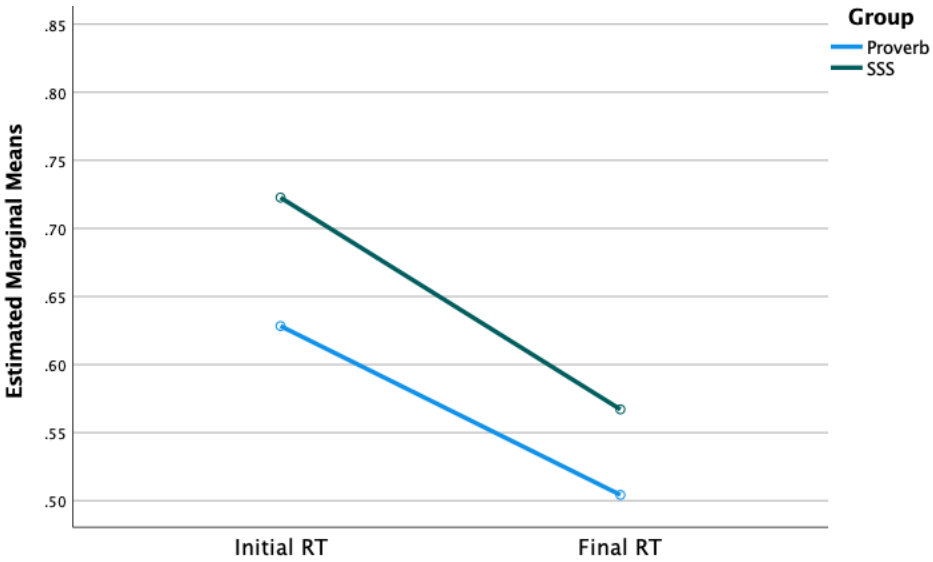

Figure 5.6 Results of RT (log10) to opinions that condoned immoral behaviors.

5.2.3 Extremity

There is no significant difference in initial extremity of agreement between both proverb and SSS. The same happens for final extremity. The Within-participants analysis indicate a significant difference in initial (*Median* = 5) and final (*Median* = 5.2) responses when opinions condones behaviors through SSS[4], Z= -2.03, p< .042, ηp^2= .024 (Figure 5.7).

5.2.4 Feeling of rightness

There is no significant difference in FOR between stimuli in both initial and final responses when opinions condone immoral behaviors. The same happens for within-participants results (Figure 5.8).

5.2.5 Partial discussion and paradigm adherence

In sum, when condoning immoral behaviors, proverbs lead to more disagreement and shorter RT than SSS. Although extremity and FOR do not present significant differences between stimuli, additional reasoning tends to lead to response changes between initial and final extremity judgment

[4] Significant result only for non-parametric test. See Appendix D.

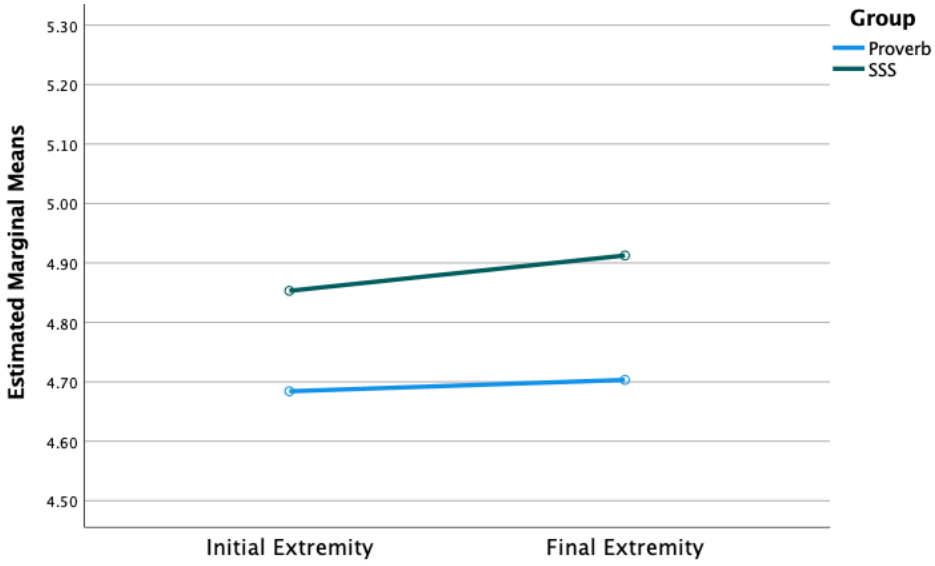

Figure 5.7 Results of response extremity to opinions that condoned immoral behaviors.

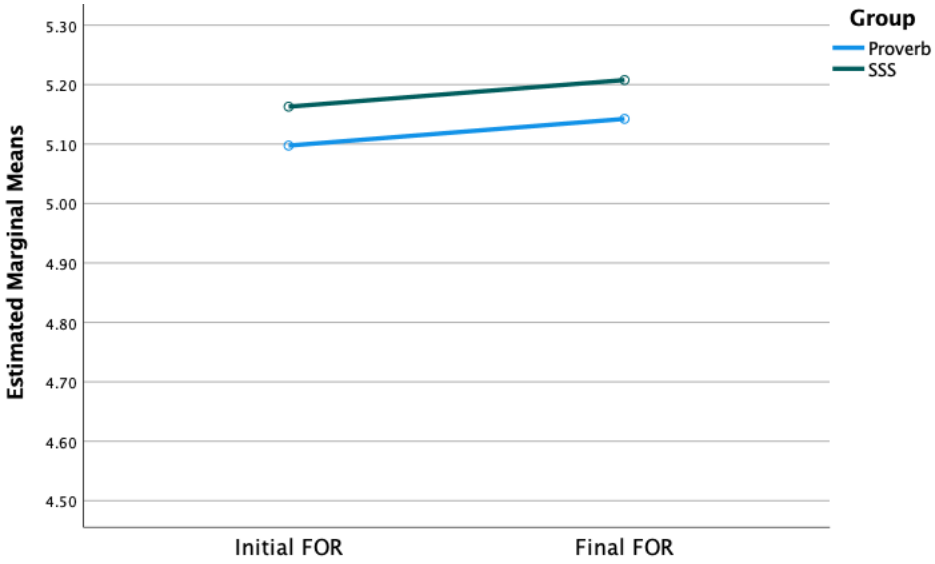

Figure 5.8 Results of FOR to opinions that condoned immoral behaviors.

only in SSS cases. This mixed pattern of results is somewhat different from what we expected. The relative strength of the proverbs generates lower extremity, lower FOR than SSS, but these differences did not reach statistical significance. However, proverbs led to greater disagreement than SSS and only the latter showed a significant tendency for response revision.

Regardless, the responses generated by the proverbs reveal that the effect of these popular sayings is contextual. While they can generate more extreme and confident judgments in contexts such as the condemning condition, this result pattern is clearly changed in the condoning condition. Our results adhere to the experimental paradigm since intuitive responses can be predicted from high FOR, high extremity, low RT and low response revision (Table 5.2 and Appendix E).

Item-based correlations also presented results indicating that the greater the initial agreement, the greater the initial RT. That is, those who agree with these opinions tend to spend more time doing so. The agreement is also negatively correlated with FOR. In other words, the most intuitive, fluent and confident response for these cases is disagreement. Just for proverbs, the more participants agree,

the less extremity is associated with this response. This is in line with what we expected considering

Table 5.2 Item-based correlations to test the paradigm adherence in condoning condition.

Condone			Initial agreement	Initial RT	Initial extremity	Initial FOR	Final agreement	Final RT	Final extremity	Final FOR	Maintenance of intuition
Proverb	Initial RT	Correl.	.082	1	-.129	-.292	.059	.279	-.137	-.259	-.085
		Sig.	.032		<.001	<.001	.120	<.001	<.001	<.001	.025
	Initial extremity	Correl.	-.099	-.129	1	.458	-.074	-.046	.874	.414	.129
		Sig.	.009	<.001		<.001	.051	.225	<.001	<.001	<.001
	Initial FOR	Correl.	-.278	-.292	.458	1	-.195	-.130	.423	.814	.233
		Sig.	<.001	<.001	<.001		<.001	<.001	<.001	<.001	<.001
	Final RT	Correl.	.035	.279	-.046	-.130	.041	1	-.088	-.124	-.133
		Sig.	.365	<.001	.225	<.001	.286		.020	.001	<.001
	Final extremity	Correl.	-.124	-.137	.874	.423	-.097	-.088	1	.491	.153
		Sig.	.001	<.001	<.001	<.001	.011	.020		<.001	<.001
	Final FOR	Correl.	-.326	-.259	.414	.814	-.288	-.124	.491	1	.291
		Sig.	<.001	<.001	<.001	<.001	<.001	.001	<.001		<.001
SSS	Initial RT	Correl.	.152	1	-.112	-.180	.138	.272	-.093	-.157	-.072
		Sig.	<.001		.003	<.001	<.001	<.001	.013	<.001	.057
	Initial extremity	Correl.	-.006	-.112	1	.556	-.032	-.040	.864	.490	.120
		Sig.	.863	.003		<.001	.401	.288	<.001	<.001	.001
	Initial FOR	Correl.	-.127	-.180	.556	1	-.159	-.115	.509	.810	.201
		Sig.	<.001	<.001	<.001		<.001	.002	<.001	<.001	<.001
	Final RT	Correl.	-.033	.272	-.040	-.115	.008	1	-.038	-.150	-.173
		Sig.	.382	<.001	.288	.002	.828		.315	<.001	<.001
	Final extremity	Correl.	-.021	-.093	.864	.509	-.043	-.038	1	.559	.102
		Sig.	.584	.013	<.001	<.001	.256	.315		<.001	.006
	Final FOR	Correl.	-.142	-.157	.490	.810	-.173	-.150	.559	1	.248
		Sig.	<.001	<.001	<.001	<.001	<.001	<.001	<.001		<.001

Bago and De Neys' (2017) studies (see Figure 3.1).

5.3 Considerations on RT data

Before moving on, it is important to point out that during data analysis we were concerned about having noise in the RT data due to reading time. That is because the proverbs used in this experiment are shorter sentences than the semantically similar sentences to them. As an effort to verify this hypothesis and control possible noise, we performed a pre-test to assess the reading time of each proverb and its respective semantically similar sentence. The pre-test on reading time (63 participants) demonstrated that semantically similar sentences (M= 2.8 seconds, SD= .66) were significantly different from proverbs (M= 2.1 seconds, SD= .46), $t(62)$= 10.56, p< .05.

Since the result demonstrates a significant difference, we subtract the mean reading time for proverbs and SSS from the means of the RT data. However, the average reading time was not adequately applicable to all participants. Subtraction yielded results less than or equal to zero, especially in cases of final RT in which some participants had a high initial FOR and did not need to read the opinion again to provide a final judgment. This simple operation compromised the data, violating notions of time and therefore it was not enough to deal with the reading time problem. As a last-ditch effort, we added 2 seconds to all RT averages and perform the subtraction. This operation was also important because all RT data were transformed to $\log_{10}$ in order to normalize it, requiring data greater than zero for this transformation. However, this last effort also does not present a faithful alternative to response time because the addition of 2 seconds generated changes in the pattern of the data in relation to those before the final transformation.

Divergence on RT results after and before transformation may indicate that, in some cases, some participants did not read the opinion again to provide a final response. So, the reading time subtraction should not be applied in these situations. However, as we can not handle such cases, it is important to highlight that the experimental paradigm used here failed recording (and dealing with) response time

without reading time noise. Even though, these results are important to help us to discuss possible ways to deal with response time in future research (see discussion chapter).

For the sake of simplicity and clarity, we presented the above results on the original RT. Our efforts to deal with reading time noise are presented in Appendix F. Summarising it, after final transformation, the results are contrary to original RT since they did not show a significant difference between proverb and SSS, when they are condemning and condoning immoral behaviors. Both stimuli led to very fast responses, less than 0.66 seconds – intuitive RT mean found in the experiment carried out by Vega et al. (2020). That is, considering this data, proverbs do not generate faster responses than SSS, as original RT data indicate. However, the within-participants analysis is in line with original RT data for both experimental conditions. Initial RT is significantly greater than final RT in all cases, indicating that participants do not spend more time rethinking their initial responses when they had the opportunity for it.

5.4 Cognitive ease

As we can see in Table 5.3, all proverbs used in this research have a high cognitive ease rating. Remember that the scale used to assess cognitive ease indicators ranges from 1 to 5. We performed correlation analyses (parametric, with bootstrap and non-parametric tests) and found significant data in both experimental conditions that have used such proverbs. That is, when proverbs are used to condemn and condone immoral behaviors.

Table 5.3 Cognitive ease associated to the proverbs used in the study.

		Familiarity	Feeling of truth	Fluency	Cognitive ease
N	Valid	300	300	300	300
	Missing	0	0	0	0
Mean		4.7740	3.7433	4.5420	4.3531
Median		5.0000	3.8000	4.8000	4.4000
Std. Deviation		.42307	.67906	.55828	.40094

5.4.1 When proverbs were used to condemn immoral behavior

Cognitive ease average is positively correlated with initial agreement (r= .189, p= .021), initial (r= .211, p= .01) and final extremity (r= .226, p= .006), initial (r= .265, p< .001) and final FOR (r= 220, p= .007) and maintenance of intuitions (r= .294, p< .001). Furthermore, it is also negatively correlated with the initial RT (r= -.174, p= .033). In other words, proverbs with high cognitive ease degree generates more and and faster initial agreement, more extreme and confident responses and less response revision when condemning immoral behaviors.

The cognitive ease average was calculated considering the average of familiarity, feeling of truth and fluency generated by the proverbs. The same correlations above were found for the feeling of truth average, including a positive correlation with the final agreement (r= .208, p= .011). The fluency average is positively correlated with initial (r= .228, p= .005) and final FOR (r= .186, p= .023) and the maintenance of intuitions (r= .213, p= .009). The familiarity average does not present significant correlations, with the exception of maintenance of intuitions (r= .228, p= .005), which can happen due to its low variability. Furthermore, the proverbs were all selected on the basis of their familiarity and as expected they rank highly in this regard (see Table 5.3).

Such correlations indicate that the feeling of truth follows a pattern similar to the average cognitive ease and the more fluent the proverb, the greater the feeling of rightness associated with the given answer. Furthermore, the maintenance of the initial intuition is predicted by all the variables

used here. This indicates that familiarity, sense of truth and fluency are elements that help initial intuitions to prevail in final judgments, as predicted by Kahneman (2001).

5.4.2 When proverbs were used to condone immoral behavior

In these cases, we only found positive correlations between the feeling of truth and initial (r= .238, p= .003) and final agreement (r= .238, p= .003) and negative correlations between the feeling of truth and initial (r= -.176, p= .031) and final FOR[5] (r= -.183, p= .025). That is, the truer the proverb seems to be, the greater the agreement and, at the same time, the greater uncertainty it generates when used to condone behavior that is widely considered immoral. This negative correlation with FOR may indicate that the sense of truth associated with the proverb creates a conflict when used to confront previous beliefs.

The difference between the correlations in the condemning condition and the condoning condition may indicate that cognitive ease generates an intuitive response depending on the context. That is, people will not always offer an intuitive conformity response to a stimulus that is fluent, familiar, or even seems true. Such response is subject not only to the context but also to previous beliefs that may be in conflict with the way the stimulus was applied in that context.

5.5 Moral theories

From an item-based descriptive analysis, we can observe that 22.1% of the behaviors were evaluated as morally right, while 77.9% were evaluated as morally wrong through agreement or disagreement to the presented opinions. When people judge behavior as morally right, they tend to attribute reasons other than those associated with consequentialist and deontological theories (Figure 5.9). "Another option" sums 54.1% of the choices in all experimental conditions. Among those who rated the behaviors as morally wrong (Figure 5.10), consequentialist reasons (47%) are slightly preferred over deontological reasons (40.4%) in general.

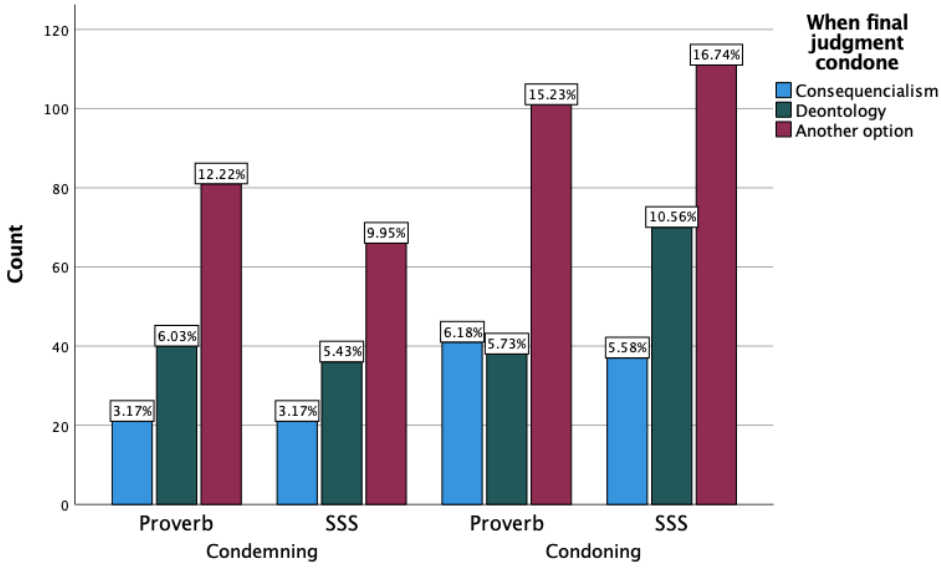

Figure 5.9 Moral theories chosen among participants who condoned immoral behaviors.

[5] Correlation between the average feeling of truth and final FOR was not significant in the nonparametric test (Spearman's Rho). See Appendix G.

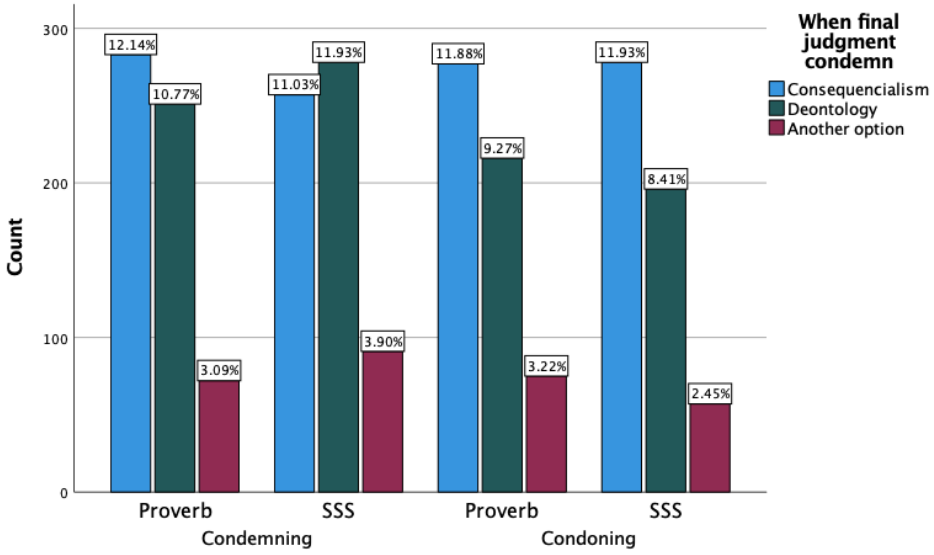

Figure 5.10 Moral theories chosen among participants who condemned immoral behaviors.

We also performed correlations involving moral theories and found interesting results. In condemning condition, as much people agree to opinions associated with both stimuli, they tend to provide more deontological (r=.163, p=.005) and consequentialist reasons (r=.132, p=.022)[6]. Whereas, they choose less "another option" (r=-.257, p<.001). But, when they choose this last one, their initial (r=.138, p=.017) and final RT (r=.158, p=.006) increase. Furthermore, people maintain their initial intuitions when they are more consequentialist (r=.143, p=.013)[7], and the opposite occurs when they choose "other option" (r=-.129, p=.026). These correlations show that the minority who choose "another option" under such condition tend to have more controlled processing. That is, higher RT and lower maintenance of initial intuitions.

In condoning condition, as much people agree with the opinions associated with both stimuli, they tend to be more deontological initially (r=.114, p=.048) and less consequentialist to provide initial (r=-.201, p<.001) and final responses (r=-.187, p=.001). Again, "another option" predicts more initial RT (r=.136, p=.018) and less maintenance of initial intuitions (r=-.119, p=.04)[8]. Together, these correlations indicate that deontological reasons are more associated with the conformity with opinions presented. However, deontological and consequentialist reasons together may be opposed to other moral theories since this last one is more associated with opinions that generate longer response time and more response revision.

Finally, we counted how many times the same participant opted for the same alternative and classified it as "deontological profile", "consequentialist profile" or "other" when a moral theory was chosen a number of times greater than the sum of the other two. 72% showed a preference for a specific moral theory (see Figure 5.11), indicating that participants may be influenced by their moral profile to choose the reasons underlying their judgment.

In sum, our results indicate that other moral theories are associated with more controlled processes and are preferred when people condone immoral behavior. Both consequentialist and deontological theories tend to be chosen when their final judgment condemns immoral behaviors, but the second one is preferred when people do so by conforming with someone's opinion and

[6] This correlation was not found in parametric test (Pearson Correlation). See Appendix H.

[7] This correlation was not found in non-parametric test (Spearman's Rho). See Appendix H.

[8] This correlation was not found in non-parametric test (Spearman's Rho). See Appendix H.

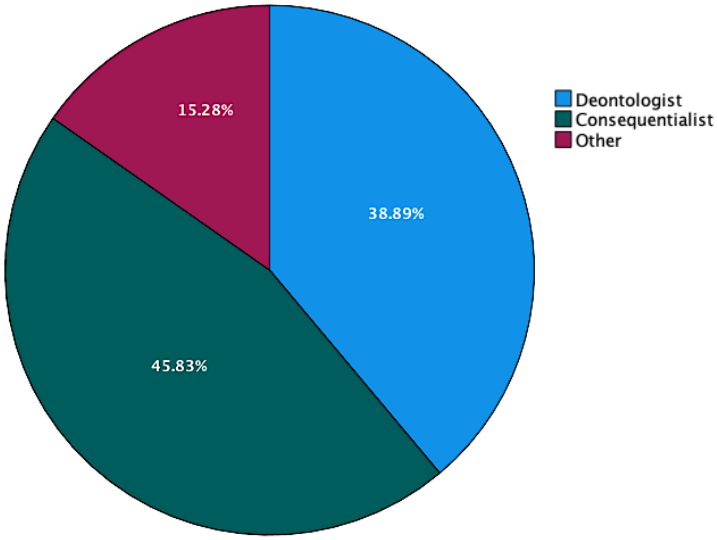

Figure 5.11 Percentage of participants who demonstrated preference for a specific moral theory.

consequentialist theories tend to increase maintenance of intuitions. Despite the differences found inside moral theories, the majority of the participants demonstrated a preference for some specific moral theory, indicating the possible existence of a moral profile. Even though we cannot advocate the existence of such a moral profile, which requires further research, we can argue that deontological and consequentialist reasons are both associated with intuitive indicators in the context of the present experiment.

6 DISCUSSION

To discuss the reported results, we will first analyze those referring to the "condemning condition", then those referring to the "condoning condition" and finally, we will integrate both and expand the discussion to consider the results of the questionnaires. It is important to remember that our general hypothesis was that moral judgments are sensitive to the presence of proverbs, increasing the chance of 1) a heuristic processing in condemning condition and 2) a conflict-detection in condoning condition.

The results on the "condemning condition" indicate that there is no significant difference in people's agreement with opinions that condemn immoral behaviors through proverbs and sentences semantically similar to them. In both cases, the majority tend to agree with the opinions. But when in the presence of proverbs, people are more extreme and confident in their judgment than when in the presence of simple sentences with the same meaning. This indicates that proverbs are social factors capable of influencing people's judgment, making them more polarized and confident. According to previous studies carried out by Thompson et al. (2011) and Vega et al. (2020), such results imply in judgments more resistant to counter-evidence and related to the formation of "moral conviction".

We also found that RT is always lower for proverbial cases and that for both stimuli final response time decrease in relation to the initial one. As stated before, RT has some noise due to the previous non-consideration of the reading time or the way we find to transform the data and deal with this issue, which compromised the between-participants results. We thus refrain from interpreting these results and postpone for future research a more accurate measurement of RT with better control of the differences in length between proverbs and SSS.

In any case, the quick responses indicate that agreeing or disagreeing with these opinions about immoral behavior is an easy task that involves few cognitive resources. This can happen because they are everyday problems that, according to Greene (2014) and Haidt (2001), tend to be processed in an

intuitive way. That is, they are problems that naturally involve heuristic principles. Despite this, as aforesaid, participants provided more extreme and confident responses when in the presence of proverbs – indicating that our moral judgments are sensitive to the presence of proverbs, in particular, they were enhanced by the use of these expressions.

Therefore, our hypothesis that there is an effect of proverbs on moral judgments is confirmed in these cases. In addition to the differences between stimuli, it is worth noting the differences between initial and final responses within-participants, since greater response revision is associated with more controlled processing. The significant difference between initial and final responses of agreement, extremity and FOR in cases where opinions use SSS indicates greater engagement in controlled processing. Therefore, we can assume that proverbs, used in this context, increase the strength of intuitive judgment leading to lower response revision, higher response extremity and a higher feeling of rightness.

In the case of "condoning condition", participants tended to disagree more with opinions, especially when they used proverbs. This result was not predicted. Moreover, the use of proverbs no longer led to differences in FOR or response extremity. We predicted not only a relative decrease of the FOR and response extremity in the case of proverbs compared to SSS but a reversal. In other words, proverbs were expected to lead in this condition to lower FOR and response extremity. This may indicate the relative strength triggered by proverbs was not enough to generate the predicted conflict of intuitions (see Bago & De Neys, 2017).

It is important to remember that all behaviors used in this research were selected through a pre-test as they are widely considered to be morally wrong. Furthermore, these are everyday behaviors that may have such high negative ratings among most people precisely because they carry intuitive moral values associated with cultural conventions. This fact added to our results indicates that a well-established prior belief will not change drastically due to the presence of proverbs even if they have an intuitive appeal.

More specifically, Bago and De Neys (2017) propose that System 1 may generate different types of intuitions, and such intuitions can vary in their strength or activation level. They propose that we need "to consider both absolute (which one of the two intuitions is strongest?) and relative (how pronounced is the activation difference between both intuitions?) strength differences between competing intuitions" (Bago & De Neys, 2017, p.107). Where:

> The initial response will be determined by the absolute strength level. Whichever intuition is strongest will be selected as initial response. Whether or not the initial response gets subsequently deliberately changed will be determined by the relative strength difference between both intuitions. The smaller the difference, the less confident one will be, and the more likely that the initial response will be changed after deliberation (Bago & De Neys, 2019a, p.19).

Since the initial intuition was selected considering the immorality of those behaviors and that such intuition remained in final judgment with high confidence, the absolute and relative strength differences between social convention (determining that the behavior is wrong) and other's opinion (determining that the behavior is right) was great. Even when opinions were associated with proverbs to condone immoral behaviors, leading to more disagreement.

Considering the general hypothesis of this dissertation, we can say that the "condoning condition" results confirmed the existence of an influence of proverbs on moral judgment. But this influence can not be explained regarding absolute and relative strength since the greater disagreement is not accompanied by the indicators we expected. Actually, it suggests that relative strength is contextual.

In summary, robust results reveal that: 1) When proverbs are used to condemn behavior that is widely considered immoral, they increase people's reliance on System 1 processing, increasing the feeling of rightness and the extremity of the intuitive response and reducing the likelihood of response

revision; 2) When proverbs are used to condone behavior that is widely considered immoral, the above-mentioned indicators tend to vanish. That is, the mere presence of a proverb will not change one's mind when they compete with stronger intuitions, the effect they evoke is contextual.

In addition to assuming that proverbs are capable of influencing our moral judgments, we also assume that such influence would be in accordance with the cognitive ease associated with the proverbs used. To assess cognitive ease, we added participants' assessments of familiarity, fluency and feeling of truth that those proverbs generated. It is important to remember that all proverbs used in the research were selected after a pre-test due to their high familiarity. Therefore, as expected, the average familiarity is high for all cases and has low variability among participants. In general, the fluency and feeling of truth were also highly evaluated, with greater variability in the latter.

For "condemning condition", fluency is positively correlated with initial and final FOR. That is, there is a relationship between fluency and confidence judgment in cases where proverbs are used. The feeling of truth follows the overall results of the mean cognitive ease, both being related to all initial responses (agreement, extremity and FOR) and also the final extremity and final FOR.

It demonstrates that the effect of familiar proverbs in "condemning condition" is guided by their characteristics that present a significant correlation. However, in the "condoning condition", there are only positive correlations between the feeling of truth and agreement, and negative correlations between the feeling of truth and FOR. This indicates that the effects we found – high disagreement degree – may be guided by the low feeling of truth. Besides, the feeling of truth associated with the proverb creates a conflict when used to confront previous beliefs, represented by the decrease of FOR.

Therefore, considering Kahneman's (2011) work, cognitive ease helps to explain why these structures are processed intuitively. But, the effect they have on moral judgments may depend on the context. More specifically, a stimulus with high cognitive ease will be processed fast but will lead to different effects depending on their use. If they conflict with stronger intuitions, we may verify effects like "condoning condition" instead of "condemning condition". It does not seem to be the case that there is an attribute substitution because people easily assess moral wrongness in this experiment, even in cases where there is a conflict of intuitions – as the difference in relative and absolute strength between these intuitions seems to be large.

So far, these results help to understand how our moral judgments happen in everyday situations when we are often exposed to behaviors that carry a moral value and are subject to different opinions about them. When in a social context, we are exposed to such opinions, the link of reasoned persuasion takes place and usually, not only one intuition is activated. Stimuli like proverbs can act as an attempt to trigger intuitions, but how they will interact with other intuitions and guide moral judgment is dependent on how they are applied in some specific context. If these stimuli follow previous intuition and have high cognitive ease evaluation, they tend to lead to strong moral judgments resistant to counter-evidence. But, if they are used against a strong previous intuition, they no longer lead to such effect.

Furthermore, the type of conflict created in the "condoning condition" did not activate System 2 and the role of more controlled processing in moral judgment seems to be closer to what was proposed by Haidt than what was proposed by Greene. Haidt's social-intuitionist model emphasizes the role of intuitive processes for moral reasoning while Greene's dual-process model affirmed the existence of a more extensive role for deliberate processes through the possibility of correct intuitions. However, since we did not observe such an effect in within-participant results on agreement, we tend to follow Bago and De Neys (2019a) when they say that the importance of deliberation for moral reasoning does not rely on such a corrective role (at least in the case of the behaviors clearly perceived as immoral, used in the present study).

Our results also contradict Greene's conclusion about consequentialist and deontological judgments. People tended not to position themselves in a consequentialist or deontological way when they judge an immoral behavior that is condoned. Meanwhile, the opposite occurs when they judge the

same behavior after it has been condemned. When they choose another moral theory to explain their judgments, robust results indicate greater control over processing in these cases. Whereas, both deontological and consequentialist reasons seem to be more related to automaticity indicators.

These results imply that the conclusion drawn from Greene's findings does not apply to all moral judgments, especially those involving everyday situations. In addition, we also suggest that there may be a moral profile that indicates a tendency in people's choice of a specific moral theory since most people presented a preference in their choices. Such results are in line with Bago and De Neys' (2017; 2019a; 2019b) findings indicating the existence of deontological and consequentialist intuitions since in all experimental conditions we observed low RT and response revision.

At this moment, we are able to answer and discuss the main questions raised in this dissertation. First, are proverbs factors that tend to influence people's moral judgment? We have robust results that allow us to respond positively to this question. More specifically, we have seen that when proverbs are used to condemn behavior that is widely considered immoral, people agree with them more strongly and more confidently, which suggests greater reliance on their System 1 intuitions. However, when proverbs are used to condone behavior that is widely considered immoral, they generate greater disagreement.

Second, what are the psychological processes through which this influence occurs? We saw that the cognitive ease associated with proverbs is high and, as proposed by Kahneman (2011) through his research and earlier in the research by Zajonc (1968), familiarity and other elements represented in Figure 2.3 lead to heuristic processing. This is confirmed by the fact that proverbs are always associated with low RT and low response revision. Therefore, we can say that proverbs generate intuitive moral judgments. Furthermore, the immoral behaviors presented in our experiment reveal everyday situations that tend to be evaluated based on heuristic principles, according to Greene (2014) and Haidt (2001; 2007). This means that such situations are easily associated with a certain moral value. For example, we do not have to think too hard to appreciate that hitting someone is morally wrong. Therefore, we predict that when proverbs are used to accompany intuitive moral beliefs, they reinforce the reliance and confidence on intuitive (System 1) moral judgments as suggested by the increase in people's FOR and extremity of moral judgment that condemns immoral behavior.

However, when the proverbs are applied contrary to the participant's previous intuitive moral belief, we raise the possibility of the existence of a conflict of intuitions. Since the strength of the initial intuition remained in final judgment, we predict that the absolute and relative strength of the intuitions to reject opinions condoning imoral behaviors were not sufficient to reverse the results pattern. As a result, participants did not need more time to review their initial responses.

Importantly, this evidence-based possibility that favors a hybrid view of dual-process models should be tested in future research so that we can discuss these data again with greater confidence. This is because the material used here is very different from what is normally used in moral reasoning research (sacrificial dilemmas), which can generate interesting new evidence.

Third, how do these fit within current moral judgment theories? Certainly, the main theories of moral judgment have provided important insights into how our moral judgments occur and some of them can be seen in this research. Our experimental paradigm was based on the link of reasoned persuasion, according to the social-intuitionist model (Haidt & Bjorklund, 2008). This link depicts situations in which people deal with moral reasons provided by others to assume a judgment. Our results corroborate that under these circumstances, people tend to take extreme positions when making a moral judgment (Haidt & Bjorklund, 2008). In addition, Greene (2014) also provided important insights into the heuristic nature of our moral principles.

Furthermore, he took philosophical discussions to another level when he integrated them into empirical research. However, Greene's corrective view – that consequentialist and deliberate judgments precede and correct deontological and intuitive judgments – has been challenged by the hybrid view of dual-process models. New evidence attributes both deontological and consequentialist

judgments to System 1 (see Białek & De Neys, 2017; Bago & De Neys, 2019a) and our results are in line with that. Moreover, factors other than the type of processing may be associated with moral justification, such as the existence of moral profiles. But, further research is needed to reach more reliable conclusions. Our results favor this hybrid view, as we found both deontological and consequentialist reasons associated with the agreement with opinions that condemn immoral behavior. Our results also allow us to assume that judgments contrary to what is normally expected (associated with widespread social beliefs) have a different moral justification than deontological and consequentialist ones. Which also makes room for future research.

Fourth, what about the main ethical moral theories? As stated above, both moral theories used in this research are associated with intuitive judgments. So, an important implication of these results is that we need to think about deontological and consequentialist reasons out of Greene's box. If we consider that, as widely accepted, deliberate processes are better for conducting a moral judgment, then we must pay more attention to the kind of processing information underlying certain moral judgments instead of relying on Greene's (2014) categorization – deontological judgments are intuitive and biased, whereas consequentialist judgments are controlled and should be preferred.

Greene's debunking argument built an important bridge between philosophical and empirical studies. The more open to interdisciplinary discussion and evidence, the more ethics (and other areas, such as psychology) has to gain for its development. However, it does not seem to be the case where we can say that one of the moral theories used in this experiment overlaps the other in dealing with everyday moral situations. Our results suggest that categorizing these moral theories, as done by Greene, may not be easily applicable in everyday situations.

In addition, associating good moral judgment with the type of underlying processing must be re-evaluated. This is because recent research, such as Białek & De Neys (2017), uses material similar to Greene's studies and finds different results based on the circumstances in which moral problems are presented. This implies that it is more advantageous to investigate under which conditions our deontological and consequentialist judgments (or based on other moral theories) are reliable. This does not necessarily imply being processed by System 2. As we have seen, responses considered by System 2 (reliable and controlled), can be processed by System 1. The most important thing seems to be to discover the situations in which our intuitions fit the problem presented to provide an adequate response when we do not have time, cognitive resources or do not need to think about the problem in a deliberate way.

Finally, what is the best way to deal with possible bias and still try to get closer to an ethical relationship with the world? Obviously, like the previous questions, this one remains open. Nevertheless, from the results of this research, we believe it is important to take some time to reflect on our moral values and judgments made. We know that in everyday life automaticity operates according to lack of time, factors such as proverbs that enhance intuitive prior beliefs, among others. But, it seems that the only way to deal with possible bias is not to be so confident. The lower the FOR, the greater our chance of rethinking our initial intuitions and providing more thoughtful judgments. Obviously, we can still be biased, but this certainly brings us closer to a more ethical relationship with the world. Especially if we consider all current forms of information manipulation that we are often exposed to.

A popular saying, a photo, news or any idea that can make us convinced and resistant to counter-arguments is the main motivation by which various fake news, bots on social media, manipulation of surveys and various other tools are created within the politics, marketing and revisionist debate of scientific achievements. Therefore, it is essential that this theme continues to be explored in order to avoid fertilize stereotypes, impressions and authoritarian tendencies.

Considering the strengths and limitations of this dissertation, we offer some recommendations for future research. When using a similar experimental paradigm (see Figure 4.1), it is important to think of more reliable ways to capture the response time without having reading time interference and

without running the risk that the judgment process happened before capturing the time (in the case, for example, of presenting the opinion on a screen prior to timing). One possibility is to use techniques such as eye-tracking to control reading time individually. Although it can be difficult, it is also possible to try to balance reading time between stimuli through a pretest.

Some interesting questions were discussed in this dissertation and others were found along the way. There are a lot of interesting questions that could be the motivation for future work: How exactly does System 1 operate in the presence of a conflict of strong intuitions with and without time-pressure? What other moral theories can be associated with judgments that contradict social intuitive beliefs (for example, those selected through a pre-test determining the immorality of behaviors presented to the participants)? There is a moral profile? How do judgments with high FOR and extremity change when facing counterarguments? What about those with lower FOR and extremity?

7 FINAL CONSIDERATIONS

This dissertation provides initial results on the effects of proverbs on everyday moral judgments that, as far as we know, are unprecedented. In addition to contributing as a starting point for future research on this topic, our findings highlight the relevance of using experiments with greater external validity. This is because our results suggest that the context is important to determine the effect of some stimuli with high cognitive ease (e.g., proverbs). They can make a judgment more fluent, more extreme, increase the feeling of rightness and reduce the chance of revision. But, they can also put a contrary intuition in evidence. Considering everyday contexts and situations, we can discuss with greater confidence the social phenomena – persuasion, activation of stereotypes and impressions – that take place in interpersonal communication and interfere with moral judgments. This is important because communication among people is increasingly facilitated by applications and technologies that are generally accessible and widely used as advertising tools, political debate space and news broadcasting. A fact that made room for different types of information manipulation that take advantage of our ancient heuristic system. In other words, experiments with greater external validity can help us deal with these current problems. Especially if we do it in an integrated way, considering the contribution of different cognitive science areas to overcome such problems.

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Appendix A. Between-participants effects in condemning condition from different statistical tests

1. Multivariate ANOVA[9]

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Initial agreement	.067[a]	1	.067	1.075	.301	.004
	Inicial RT	101.817[b]	1	101.817	14.575	<.001	.047
	Initial RT (Log)	.395[c]	1	.395	16.671	<.001	.053
	Initial intensity	7.384[d]	1	7.384	10.110	.002	.033
	Initial FOR	9.182[e]	1	9.182	14.746	<.001	.047
	Final agreement	.097[f]	1	.097	1.582	.209	.005
	Final RT	1.288[g]	1	1.288	.009	.924	.000
	Final RT (Log)	.358[h]	1	.358	5.539	.019	.018
	Final intensity	4.312[i]	1	4.312	6.546	.011	.021
	Final FOR	4.021[j]	1	4.021	6.770	.010	.022
	Maintenance of intuitions	2.083[k]	1	2.083	2.543	.112	.008
Intercept	Initial agreement	859.198	1	859.198	13683.18	<.001	.979
	Inicial RT	14145.938	1	14145.938	2024.982	<.001	.872
	Initial RT (Log)	195.443	1	195.443	8257.065	<.001	.965
	Initial intensity	6920.002	1	6920.002	9474.272	<.001	.970
	Initial FOR	7408.448	1	7408.448	11897.90	<.001	.976
	Final agreement	883.854	1	883.854	14389.32	<.001	.980
	Final RT	12483.514	1	12483.514	88.793	<.001	.230
	Final RT (Log)	145.743	1	145.743	2255.014	<.001	.883
	Final intensity	7152.456	1	7152.456	10857.23	<.001	.973
	Final FOR	7647.720	1	7647.720	12874.12	<.001	.977
	Maintenance of intuitions	5452.803	1	5452.803	6656.479	<.001	.957
Group	Initial agreement	.067	1	.067	1.075	.301	.004
	Inicial RT	101.817	1	101.817	14.575	<.001	.047
	Initial RT (Log)	.395	1	.395	16.671	<.001	.053
	Initial intensity	7.384	1	7.384	10.110	.002	.033
	Initial FOR	9.182	1	9.182	14.746	<.001	.047
	Final agreement	.097	1	.097	1.582	.209	.005
	Final RT	1.288	1	1.288	.009	.924	.000
	Final RT (Log)	.358	1	.358	5.539	.019	.018
	Final intensity	4.312	1	4.312	6.546	.011	.021
	Final FOR	4.021	1	4.021	6.770	.010	.022
	Maintenance of intuitions	2.083	1	2.083	2.543	.112	.008
Error	Initial agreement	18.712	298	.063			
	Inicial RT	2081.741	298	6.986			
	Initial RT (Log)	7.054	298	.024			
	Initial intensity	217.659	298	.730			
	Initial FOR	185.555	298	.623			
	Final agreement	18.304	298	.061			
	Final RT	41896.014	298	140.591			
	Final RT (Log)	19.260	298	.065			
	Final intensity	196.315	298	.659			
	Final FOR	177.023	298	.594			
	Maintenance of intuitions	244.113	298	.819			
Total	Initial agreement	877.977	300				
	Inicial RT	16329.496	300				
	Initial RT (Log)	202.892	300				
	Initial intensity	7145.046	300				
	Initial FOR	7603.185	300				
	Final agreement	902.256	300				
	Final RT	54380.817	300				
	Final RT (Log)	165.361	300				
	Final intensity	7353.082	300				
	Final FOR	7828.765	300				
	Maintenance of intuitions	5699.000	300				

[9] Multivariate ANOVA with bootstrap (BCa) presented the same results.

Corrected Total	Initial agreement	18.780	299
	Inicial RT	2183.559	299
	Initial RT (Log)	7.448	299
	Initial intensity	225.043	299
	Initial FOR	194.737	299
	Final agreement	18.402	299
	Final RT	41897.303	299
	Final RT (Log)	19.618	299
	Final intensity	200.627	299
	Final FOR	181.045	299
	Maintenance of intuitions	246.197	299

a. R Squared = .004 (Adjusted R Squared = .000)

b. R Squared = .047 (Adjusted R Squared = .043)

c. R Squared = .053 (Adjusted R Squared = .050)

d. R Squared = .033 (Adjusted R Squared = .030)

e. R Squared = .047 (Adjusted R Squared = .044)

f. R Squared = .005 (Adjusted R Squared = .002)

g. R Squared = .000 (Adjusted R Squared = -.003)

h. R Squared = .018 (Adjusted R Squared = .015)

i. R Squared = .021 (Adjusted R Squared = .018)

j. R Squared = .022 (Adjusted R Squared = .019)

k. R Squared = .008 (Adjusted R Squared = .005)

2. Kruskal-Wallis Test[10]

Ranks

	Group	N	Mean Rank
Initial agreement	Group 1	150	155.11
	Group 2	150	145.89
	Total	300	
Inicial RT	Group 1	150	169.91
	Group 2	150	131.09
	Total	300	
Initial RT (Log)	Group 1	150	169.91
	Group 2	150	131.09
	Total	300	
Initial extremity	Group 1	150	135.00
	Group 2	150	166.00
	Total	300	
Initial FOR	Group 1	150	132.72
	Group 2	150	168.28
	Total	300	
Final agreement	Group 1	150	155.68
	Group 2	150	145.32
	Total	300	
Final RT	Group 1	150	164.05
	Group 2	150	136.95
	Total	300	
Final RT (Log)	Group 1	150	164.05
	Group 2	150	136.95
	Total	300	
Final extremity	Group 1	150	138.00
	Group 2	150	163.00
	Total	300	
Final FOR	Group 1	150	137.81
	Group 2	150	163.19
	Total	300	
Maintenance of intuitions	Group 1	150	143.66
	Group 2	150	157.34
	Total	300	

Test Statistics[a,b]

	Initial agreement	Inicial RT	Initial RT (Log)	Initial extremity	Initial FOR	Final agreement	Final RT	Final RT (Log)	Final extremity	Final FOR	Maintenance of intuitions
Kruskal-Wallis H	.881	15.015	15.015	9.624	12.71	1.127	7.316	7.316	6.278	6.487	2.226
df	1	1	1	1	1	1	1	1	1	1	1
Asymp. Sig.	.348	<.001	<.001	.002	<.001	.288	.007	.007	.012	.011	.136

a. Kruskal Wallis Test

b. Grouping Variable: Group

[10] In condemning condition, Group 1 always refers to semantically similar sentences and Group 2 refers to proverbs.

Appendix B. Between-participants effects in condoning condition from different statistical tests

1. Multivariate ANOVA[11]

Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Initial agreement	.188[a]	1	.188	5.177	.024	.017
	Initial RT	93.881[b]	1	93.881	28.183	<.001	.086
	Initial RT (Log)	.668[c]	1	.668	31.302	<.001	.095
	Initial extremity	2.142[d]	1	2.142	1.545	.215	.005
	Initial FOR	.321[e]	1	.321	.561	.454	.002
	Final agreement	.195[f]	1	.195	5.076	.025	.017
	Final RT	27.797[g]	1	27.797	4.745	.030	.016
	Final RT (Log)	.296[h]	1	.296	6.284	.013	.021
	Final extremity	3.287[i]	1	3.287	2.324	.128	.008
	Final FOR	.320[j]	1	.320	.546	.461	.002
	Maintenance of intuitions	.750[k]	1	.750	1.063	.303	.004
Intercept	Initial agreement	396.712	1	396.71	10905.07	<.001	.973
	Initial RT	7647.158	1	7647.2	2295.645	<.001	.885
	Initial RT (Log)	136.900	1	136.90	6417.724	<.001	.956
	Initial extremity	6822.213	1	6822.2	4921.186	<.001	.943
	Initial FOR	7895.925	1	7895.9	13796.22	<.001	.979
	Final agreement	393.651	1	393.65	10243.54	<.001	.972
	Final RT	4639.972	1	4640.0	792.041	<.001	.727
	Final RT (Log)	86.099	1	86.099	1827.500	<.001	.860
	Final extremity	6935.059	1	6935.1	4903.889	<.001	.943
	Final FOR	8034.533	1	8034.5	13704.80	<.001	.979
	Maintenance of intuitions	6048.030	1	6048.0	8573.461	<.001	.966
Group	Initial agreement	.188	1	.188	5.177	.024	.017
	Initial RT	93.881	1	93.881	28.183	<.001	.086
	Initial RT (Log)	.668	1	.668	31.302	<.001	.095
	Initial extremity	2.142	1	2.142	1.545	.215	.005
	Initial FOR	.321	1	.321	.561	.454	.002
	Final agreement	.195	1	.195	5.076	.025	.017
	Final RT	27.797	1	27.797	4.745	.030	.016
	Final RT (Log)	.296	1	.296	6.284	.013	.021
	Final extremity	3.287	1	3.287	2.324	.128	.008
	Final FOR	.320	1	.320	.546	.461	.002
	Maintenance of intuitions	.750	1	.750	1.063	.303	.004
Error	Initial agreement	10.841	298	.036			
	Initial RT	992.685	298	3.331			
	Initial RT (Log)	6.357	298	.021			
	Initial extremity	413.116	298	1.386			
	Initial FOR	170.553	298	.572			
	Final agreement	11.452	298	.038			
	Final RT	1745.758	298	5.858			
	Final RT (Log)	14.040	298	.047			
	Final extremity	421.430	298	1.414			
	Final FOR	174.705	298	.586			
	Maintenance of intuitions	210.220	298	.705			
Total	Initial agreement	407.741	300				
	Initial RT	8733.725	300				
	Initial RT (Log)	143.925	300				
	Initial extremity	7237.471	300				
	Initial FOR	8066.799	300				
	Final agreement	405.298	300				
	Final RT	6413.527	300				
	Final RT (Log)	100.434	300				
	Final extremity	7359.776	300				
	Final FOR	8209.557	300				
	Maintenance of intuitions	6259.000	300				

[11] Multivariate ANOVA with bootstrap (BCa) presented the same results.

Corrected Total	Initial agreement	11.029	299
	Initial RT	1086.566	299
	Initial RT (Log)	7.025	299
	Initial extremity	415.258	299
	Initial FOR	170.874	299
	Final agreement	11.647	299
	Final RT	1773.555	299
	Final RT (Log)	14.336	299
	Final extremity	424.717	299
	Final FOR	175.025	299
	Maintenance of intuitions	210.970	299

a. R Squared = .017 (Adjusted R Squared = .014)

b. R Squared = .086 (Adjusted R Squared = .083)

c. R Squared = .095 (Adjusted R Squared = .092)

d. R Squared = .005 (Adjusted R Squared = .002)

e. R Squared = .002 (Adjusted R Squared = -.001)

f. R Squared = .017 (Adjusted R Squared = .013)

g. R Squared = .016 (Adjusted R Squared = .012)

h. R Squared = .021 (Adjusted R Squared = .017)

i. R Squared = .008 (Adjusted R Squared = .004)

j. R Squared = .002 (Adjusted R Squared = -.002)

k. R Squared = .004 (Adjusted R Squared = .000)

2. Kruskal-Wallis Test[12]

Ranks

	Group	N	Mean Rank
Initial agreement	Group 1	150	137.32
	Group 2	150	163.68
	Total	300	
Initial RT	Group 1	150	124.41
	Group 2	150	176.59
	Total	300	
Initial RT (Log)	Group 1	150	124.41
	Group 2	150	176.59
	Total	300	
Initial extremity	Group 1	150	145.10
	Group 2	150	155.90
	Total	300	
Initial FOR	Group 1	150	145.27
	Group 2	150	155.73
	Total	300	
Final agreement	Group 1	150	137.34
	Group 2	150	163.66
	Total	300	
Final RT	Group 1	150	138.23
	Group 2	150	162.77
	Total	300	
Final RT (Log)	Group 1	150	138.23
	Group 2	150	162.77
	Total	300	
Final extremity	Group 1	150	142.79
	Group 2	150	158.21
	Total	300	
Final FOR	Group 1	150	145.81
	Group 2	150	155.19
	Total	300	
Maintenance of intuitions	Group 1	150	146.28
	Group 2	150	154.72
	Total	300	

Test Statistics[a,b]

	Initial agreement	Initial RT	Initial RT (Log)	Initial extremity	Initial FOR	Final agreement	Final RT	Final RT (Log)	Final extremity	Final FOR	Maintenance of intuitions
Kruskal-Wallis H	8.177	27.14	27.144	1.172	1.102	8.309	6.005	6.005	2.394	.890	.998
df	1	1	1	1	1	1	1	1	1	1	1
Asymp. Sig.	.004	<.001	<.001	.279	.294	.004	.014	.014	.122	.345	.318

a. Kruskal Wallis Test

b. Grouping Variable: Group

[12] In condoning condition, Group 1 always refers to proverbs and Group 2 refers to semantically similar sentences.

Appendix C. Within-participants effects in condemning condition from different statistical tests

1. ANOVA with repeated measures for agreement, RT, extremity and FOR[13]

Tests of Within-Subjects Contrasts

Group	Source	Agreement	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	Agreement	Linear	.055	1	.055	3.909	.050	.026
	Error(Agreement)	Linear	2.101	149	.014			
Group 2	Agreement	Linear	.033	1	.033	3.446	.065	.023
	Error(Agreement)	Linear	1.445	149	.010			

Tests of Within-Subjects Contrasts

Group	Source	Measure	RT	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	RT	Before_Log	Linear	84.939	1	84.939	7.168	.008	.046
		After_Log	Linear	.198	1	.198	6.734	.010	.043
	Error(RT)	Before_Log	Linear	1765.680	149	11.850			
		After_Log	Linear	4.373	149	.029			
Group 2	RT	Before_Log	Linear	4.037	1	4.037	.031	.861	.000
		After_Log	Linear	.709	1	.709	19.123	<.001	.114
	Error(RT)	Before_Log	Linear	19466.854	149	130.650			
		After_Log	Linear	5.522	149	.037			

Tests of Within-Subjects Contrasts

Group	Source	Intensity	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	Extremity	Linear	1.027	1	1.027	12.206	<.001	.076
	Error(Extremity)	Linear	12.532	149	.084			
Group 2	Extremity	Linear	.139	1	.139	1.514	.221	.010
	Error(Extremity)	Linear	13.651	149	.092			

Tests of Within-Subjects Contrasts

Group	Source	FOR	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	FOR	Linear	1.444	1	1.444	17.367	<.001	.104
	Error(FOR)	Linear	12.392	149	.083			
Group 2	FOR	Linear	.031	1	.031	.365	.547	.002
	Error(FOR)	Linear	12.797	149	.086			

[13] ANOVA with bootstrap (BCa) presented the same results.

2. Wilcoxon test

Ranks

Group			N	Mean Rank	Sum of Ranks
Group 1	Final agreement - Initial agreement	Negative Ranks	23[a]	23.22	534.00
		Positive Ranks	32[b]	31.44	1006.00
		Ties	95[c]		
		Total	150		
	Final RT - Inicial RT	Negative Ranks	106[d]	78.15	8284.00
		Positive Ranks	44[e]	69.11	3041.00
		Ties	0[f]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	106[g]	81.59	8649.00
		Positive Ranks	44[h]	60.82	2676.00
		Ties	0[i]		
		Total	150		
	Final extremity- Initial extremity	Negative Ranks	29[j]	46.60	1351.50
		Positive Ranks	68[k]	50.02	3401.50
		Ties	53[l]		
		Total	150		
	Final FOR - Initial FOR	Negative Ranks	28[m]	42.80	1198.50
		Positive Ranks	66[n]	49.49	3266.50
		Ties	56[o]		
		Total	150		
Group 2	Final agreement - Initial agreement	Negative Ranks	19[a]	21.00	399.00
		Positive Ranks	30[b]	27.53	826.00
		Ties	101[c]		
		Total	150		
	Final RT - Inicial RT	Negative Ranks	108[d]	77.90	8413.00
		Positive Ranks	42[e]	69.33	2912.00
		Ties	0[f]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	108[g]	81.79	8833.00
		Positive Ranks	42[h]	59.33	2492.00
		Ties	0[i]		
		Total	150		
	Final extremity - Initial extremity	Negative Ranks	42[j]	46.01	1932.50
		Positive Ranks	53[k]	49.58	2627.50
		Ties	55[l]		
		Total	150		
	Final FOR - Initial FOR	Negative Ranks	43[m]	42.43	1824.50
		Positive Ranks	46[n]	47.40	2180.50
		Ties	61[o]		
		Total	150		

a. Final agreement < Initial agreement

b. Final agreement > Initial agreement

c. Final agreement = Initial agreement

d. Final RT < Inicial RT

e. Final RT > Inicial RT

f. Final RT = Inicial RT

g. Final RT (Log) < Initial RT (Log)

h. Final RT (Log) > Initial RT (Log)

i. Final RT (Log) = Initial RT (Log)

j. Final extremity < Initial extremity

k. Final extremity > Initial extremity

l. Final extremity = Initial extremity

m. Final FOR < Initial FOR

n. Final FOR > Initial FOR

o. Final FOR = Initial FOR

Test Statistics[a]

Group		Final agreement - Initial agreement	Final RT - Inicial RT	Final RT (Log) - Initial RT (Log)	Final extremity - Initial extremity	Final FOR - Initial FOR
Group 1	Z	-2.044[b]	-4.919[c]	-5.603[c]	-3.727[b]	-3.925[b]
	Asymp. Sig. (2-tailed)	.041	<.001	<.001	<.001	<.001
Group 2	Z	-2.225[b]	-5.161[c]	-5.949[c]	-1.316[b]	-.737[b]
	Asymp. Sig. (2-tailed)	.026	<.001	<.001	.188	.461

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

c. Based on positive ranks.

Appendix D. Within-participants effects in condoning condition from different statistical tests

1. ANOVA with repeated measures for agreement, RT, extremity and FOR[14]

Tests of Within-Subjects Contrasts

Group	Source	Agreement	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	Agreement	Linear	.002	1	.002	.589	.444	.004
	Error(Agreement)	Linear	.454	149	.003			
Group 2	Agreement	Linear	.001	1	.001	.237	.627	.002
	Error(Agreement)	Linear	.754	149	.005			

Tests of Within-Subjects Contrasts

Group	Source	Measure	RT	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	RT	Before_Log	Linear	55.605	1	55.605	23.474	<.001	.136
		After_Log	Linear	1.154	1	1.154	54.356	<.001	.267
	Error(RT)	Before_Log	Linear	352.947	149	2.369			
		After_Log	Linear	3.163	149	.021			
Group 2	RT	Before_Log	Linear	140.987	1	140.987	32.789	<.001	.180
		After_Log	Linear	1.815	1	1.815	79.094	<.001	.347
	Error(RT)	Before_Log	Linear	640.670	149	4.300			
		After_Log	Linear	3.419	149	.023			

Tests of Within-Subjects Contrasts

Group	Source	Intensity	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	Extremity	Linear	.027	1	.027	.380	.538	.003
	Error(Extremity)	Linear	10.736	149	.072			
Group 2	Extremity	Linear	.265	1	.265	3.587	.060	.024
	Error(Extremity)	Linear	11.009	149	.074			

Tests of Within-Subjects Contrasts

Group	Source	FOR	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	FOR	Linear	.151	1	.151	2.304	.131	.015
	Error(FOR)	Linear	9.773	149	.066			
Group 2	FOR	Linear	.150	1	.150	2.985	.086	.020
	Error(FOR)	Linear	7.506	149	.050			

[14] ANOVA with bootstrap (BCa) presented the same results.

2. Wilcoxon Test

Ranks

Group			N	Mean Rank	Sum of Ranks
Group 1	Final agreement - Initial agreement	Negative Ranks	12[a]	11.38	136.50
		Positive Ranks	9[b]	10.50	94.50
		Ties	129[c]		
		Total	150		
	Final RT - Initial RT	Negative Ranks	110[d]	80.28	8831.00
		Positive Ranks	40[e]	62.35	2494.00
		Ties	0[f]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	110[g]	83.22	9154.00
		Positive Ranks	40[h]	54.28	2171.00
		Ties	0[i]		
		Total	150		
	Final extremity - Initial extremity	Negative Ranks	39[j]	42.55	1659.50
		Positive Ranks	45[k]	42.46	1910.50
		Ties	66[l]		
		Total	150		
	Final FOR - Initial FOR	Negative Ranks	31[m]	39.74	1232.00
		Positive Ranks	47[n]	39.34	1849.00
		Ties	72[o]		
		Total	150		
Group 2	Final agreement - Initial agreement	Negative Ranks	14[a]	12.68	177.50
		Positive Ranks	11[b]	13.41	147.50
		Ties	125[c]		
		Total	150		
	Final RT - Initial RT	Negative Ranks	121[d]	78.41	9488.00
		Positive Ranks	29[e]	63.34	1837.00
		Ties	0[f]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	121[g]	80.81	9778.00
		Positive Ranks	29[h]	53.34	1547.00
		Ties	0[i]		
		Total	150		
	Final extremity - Initial extremity	Negative Ranks	30[j]	38.92	1167.50
		Positive Ranks	49[k]	40.66	1992.50
		Ties	71[l]		
		Total	150		
	Final FOR - Initial FOR	Negative Ranks	30[m]	33.38	1001.50
		Positive Ranks	43[n]	39.52	1699.50
		Ties	77[o]		
		Total	150		

a. Final agreement < Initial agreement

b. Final agreement > Initial agreement

c. Final agreement = Initial agreement

d. Final RT < Initial RT

e. Final RT > Initial RT

f. Final RT = Initial RT

g. Final RT (Log) < Initial RT (Log)

h. Final RT (Log) > Initial RT (Log)

i. Final RT (Log) = Initial RT (Log)

j. Final extremity < Initial extremity

k. Final extremity > Initial extremity

l. Final extremity = Initial extremity

m. Final FOR < Initial FOR

n. Final FOR > Initial FOR

o. Final FOR = Initial FOR

Test Statistics[a]

Group		Final agreement - Initial agreement	Final RT - Initial RT	Final RT (Log) - Initial RT (Log)	Final extremity - Initial extremity	Final FOR - Initial FOR
Group 1	Z	-.816[b]	-5.945[b]	-6.551[b]	-.565[c]	-1.552[c]
	Asymp. Sig. (2-tailed)	.414	<.001	<.001	.572	.121
Group 2	Z	-.426[b]	-7.178[b]	-7.722[b]	-2.031[c]	-1.935[c]
	Asymp. Sig. (2-tailed)	.670	<.001	<.001	.042	.053

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

c. Based on negative ranks.

Appendix E. Item-based non-parametric correlations to test the paradigm adherence

Correlations: Condemning condition

Condemn				Initial agreement	Initial RT	Initial extremity	Initial FOR	Final agreement	Final RT	Final extremity	Final FOR	Maintenance of intuition
Proverb	Spearman's rho	Initial RT	Correl.	-.001	1.000	-.151	-.139	.000	.253	-.139	-.107	.011
			Sig.	.977	.	<.001	<.001	1.000	<.001	<.001	.004	.760
		Initial extremity	Correl.	.199	-.151	1.000	.792	.195	-.106	.786	.660	.062
			Sig.	<.001	<.001	.	<.001	<.001	.005	<.001	<.001	.101
		Initial FOR	Correl.	.149	-.139	.792	1.000	.144	-.139	.713	.787	.079
			Sig.	<.001	<.001	<.001	.	<.001	<.001	<.001	<.001	.035
		Final RT	Correl.	-.085	.253	-.106	-.139	-.058	1.000	-.142	-.191	-.259
			Sig.	.023	<.001	.005	<.001	.122	.	<.001	<.001	<.001
		Final extremity	Correl.	.166	-.139	.786	.713	.181	-.142	1.000	.816	.131
			Sig.	<.001	<.001	<.001	<.001	<.001	<.001	.	<.001	<.001
		Final FOR	Correl.	.107	-.107	.660	.787	.109	-.191	.816	1.000	.156
			Sig.	.004	.004	<.001	<.001	.003	<.001	<.001	.	<.001
SSS	Spearman's rho	Initial RT	Correl.	-.028	1.000	-.286	-.250	-.046	.291	-.272	-.229	-.060
			Sig.	.469	.	<.001	<.001	.223	<.001	<.001	<.001	.113
		Initial extremity	Correl.	.194	-.286	1.000	.747	.144	-.201	.772	.667	.204
			Sig.	<.001	<.001	.	<.001	<.001	<.001	<.001	<.001	<.001
		Initial FOR	Correl.	.138	-.250	.747	1.000	.075	-.204	.605	.804	.184
			Sig.	<.001	<.001	<.001	.	.047	<.001	<.001	<.001	<.001
		Final RT	Correl.	-.047	.291	-.201	-.204	.012	1.000	-.202	-.254	-.181
			Sig.	.213	<.001	<.001	<.001	.756	.	<.001	<.001	<.001
		Final extremity	Correl.	.182	-.272	.772	.605	.189	-.202	1.000	.746	.150
			Sig.	<.001	<.001	<.001	<.001	<.001	<.001	.	<.001	<.001
		Final FOR	Correl.	.148	-.229	.667	.804	.135	-.254	.746	1.000	.176
			Sig.	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.	<.001

Correlations: Condoning condition

Condone				Initial agreement	Initial RT	Initial extremity	Initial FOR	Final agreement	Final RT	Final extremity	Final FOR	Maintenance of intuition
Proverb	Spearman's rho	Initial RT	Correl.	.045	1.000	-.111	-.212	.022	.304	-.123	-.194	-.067
			Sig.	.238	.	.003	<.001	.563	<.001	.001	<.001	.079
		Initial extremity	Correl.	-.152	-.111	1.000	.641	-.132	-.049	.864	.573	.166
			Sig.	<.001	.003	.	<.001	<.001	.196	<.001	<.001	<.001
		Initial FOR	Correl.	-.254	-.212	.641	1.000	-.200	-.094	.578	.844	.207
			Sig.	<.001	<.001	<.001	.	<.001	.013	<.001	<.001	<.001
		Final RT	Correl.	.004	.304	-.049	-.094	.012	1.000	-.079	-.099	-.088
			Sig.	.921	<.001	.196	.013	.757	.	.038	.009	.021
		Final extremity	Correl.	-.174	-.123	.864	.578	-.155	-.079	1.000	.652	.175
			Sig.	<.001	.001	<.001	<.001	<.001	.038	.	<.001	<.001
		Final FOR	Correl.	-.286	-.194	.573	.844	-.265	-.099	.652	1.000	.242
			Sig.	<.001	<.001	<.001	<.001	<.001	.009	<.001	.	<.001
SSS	Spearman's rho	Initial RT	Correl.	.167	1.000	-.135	-.152	.146	.330	-.120	-.137	-.094
			Sig.	<.001	.	<.001	<.001	<.001	<.001	.001	<.001	.013
		Initial extremity	Correl.	-.054	-.135	1.000	.738	-.068	-.103	.860	.659	.138
			Sig.	.148	<.001	.	<.001	.069	.006	<.001	<.001	<.001
		Initial FOR	Correl.	-.125	-.152	.738	1.000	-.131	-.146	.673	.832	.159
			Sig.	<.001	<.001	<.001	.	<.001	<.001	<.001	<.001	<.001
		Final RT	Correl.	-.006	.330	-.103	-.146	.023	1.000	-.102	-.167	-.153
			Sig.	.867	<.001	.006	<.001	.542	.	.007	<.001	<.001
		Final extremity	Correl.	-.070	-.120	.860	.673	-.097	-.102	1.000	.744	.130
			Sig.	.063	.001	<.001	<.001	.010	.007	.	<.001	<.001
		Final FOR	Correl.	-.139	-.137	.659	.832	-.176	-.167	.744	1.000	.206
			Sig.	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.	<.001

Appendix F. Statistical analysis on response time after consideration about reading time

1. Between-participants effects: Multivariate ANOVA[15]

Tests of Between-Subjects Effects: Condemning condition

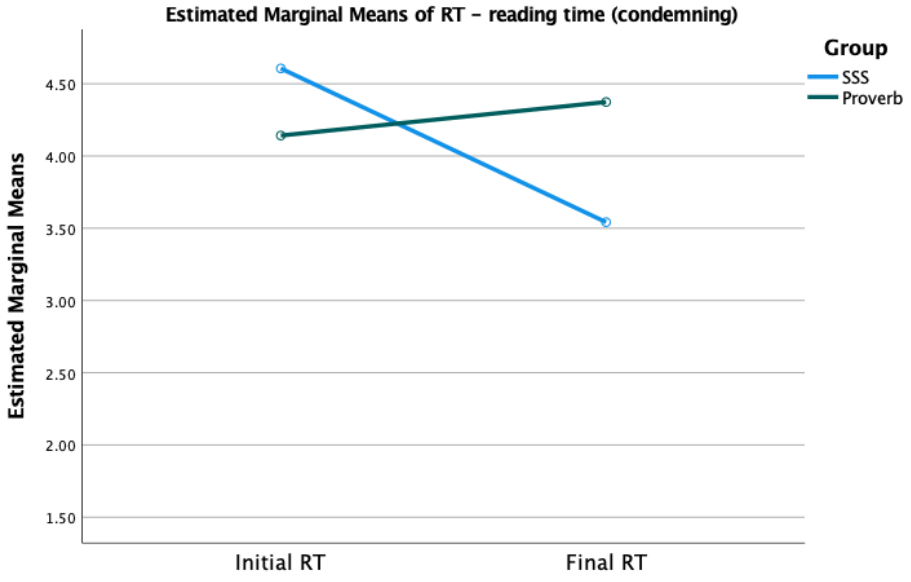
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Initial RT	16.175[a]	1	16.175	2.311	.130	.008
	Initial RT (Log)	.040[b]	1	.040	1.444	.230	.005
	Final RT	51.893[c]	1	51.893	.369	.544	.001
	Final RT (Log)	.001[d]	1	.001	.011	.915	.000
Intercept	Initial RT	5740.525	1	5740.525	820.233	<.001	.734
	Initial RT (Log)	178.456	1	178.456	6374.829	<.001	.955
	Final RT	4700.365	1	4700.365	33.440	<.001	.101
	Final RT (Log)	124.679	1	124.679	1564.954	<.001	.840
Group	Initial RT	16.175	1	16.175	2.311	.130	.008
	Initial RT (Log)	.040	1	.040	1.444	.230	.005
	Final RT	51.893	1	51.893	.369	.544	.001
	Final RT (Log)	.001	1	.001	.011	.915	.000
Error	Initial RT	2085.599	298	6.999			
	Initial RT (Log)	8.342	298	.028			
	Final RT	41886.849	298	140.560			
	Final RT (Log)	23.741	298	.080			
Total	Initial RT	7842.299	300				
	Initial RT (Log)	186.839	300				
	Final RT	46639.106	300				
	Final RT (Log)	148.421	300				
Corrected Total	Initial RT	2101.774	299				
	Initial RT (Log)	8.383	299				
	Final RT	41938.742	299				
	Final RT (Log)	23.742	299				

a. R Squared = .008 (Adjusted R Squared = .004)

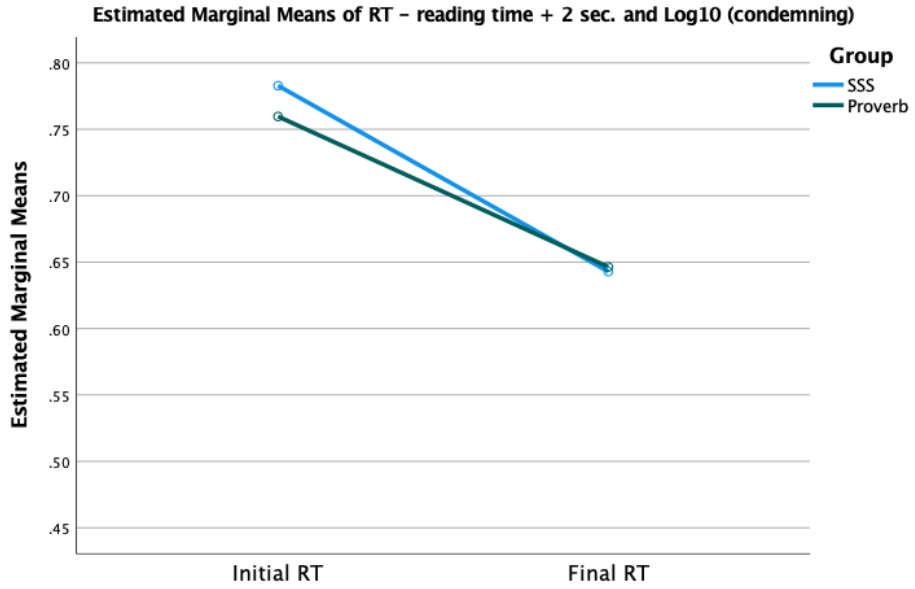
b. R Squared = .005 (Adjusted R Squared = .001)

c. R Squared = .001 (Adjusted R Squared = -.002)

d. R Squared = .000 (Adjusted R Squared = -.003)



[15] ANOVA with bootstrap (BCa) presented the same results.



Tests of Between-Subjects Effects: Condoning condition

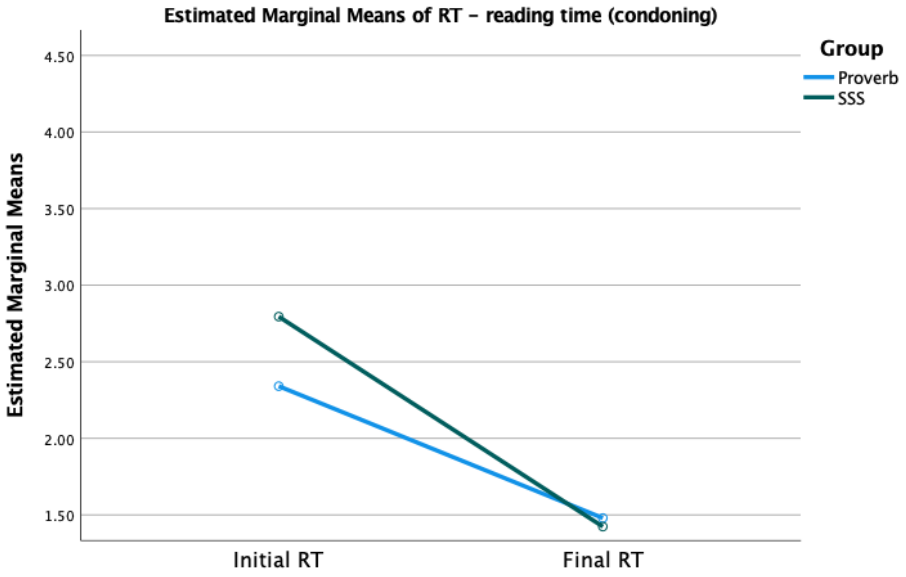
Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Initial RT	15.479[a]	1	15.479	4.646	.032	.015
	Initial RT (Log)	.079[b]	1	.079	2.975	.086	.010
	Final RT	.233[c]	1	.233	.040	.842	.000
	Final RT (Log)	.143[d]	1	.143	2.098	.149	.007
Intercept	Initial RT	1978.436	1	1978.436	593.864	<.001	.666
	Initial RT (Log)	118.410	1	118.410	4433.905	<.001	.937
	Final RT	632.468	1	632.468	108.022	<.001	.266
	Final RT (Log)	63.231	1	63.231	930.693	<.001	.757
Group	Initial RT	15.479	1	15.479	4.646	.032	.015
	Initial RT (Log)	.079	1	.079	2.975	.086	.010
	Final RT	.233	1	.233	.040	.842	.000
	Final RT (Log)	.143	1	.143	2.098	.149	.007
Error	Initial RT	992.775	298	3.331			
	Initial RT (Log)	7.958	298	.027			
	Final RT	1744.791	298	5.855			
	Final RT (Log)	20.246	298	.068			
Total	Initial RT	2986.690	300				
	Initial RT (Log)	126.447	300				
	Final RT	2377.492	300				
	Final RT (Log)	83.620	300				
Corrected Total	Initial RT	1008.254	299				
	Initial RT (Log)	8.038	299				
	Final RT	1745.024	299				
	Final RT (Log)	20.389	299				

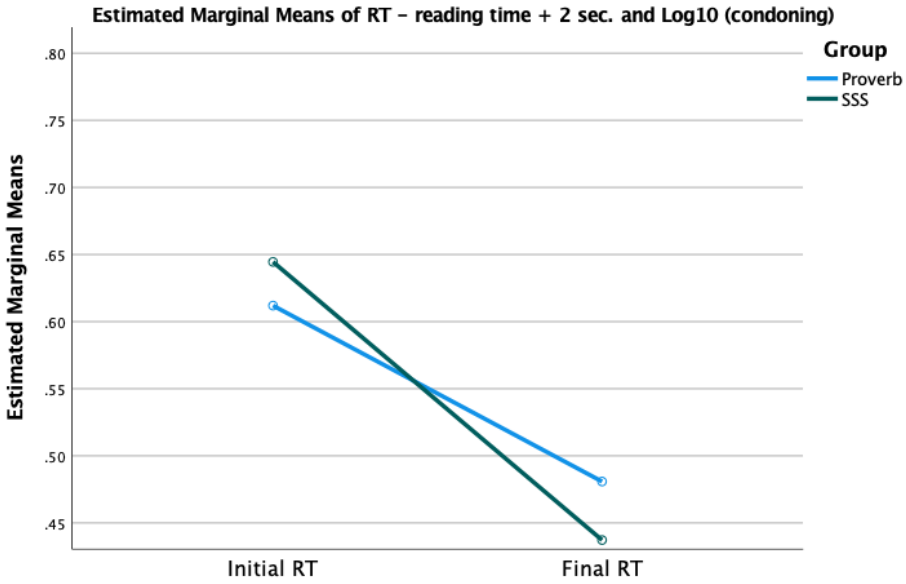
a. R Squared = .015 (Adjusted R Squared = .012)

b. R Squared = .010 (Adjusted R Squared = .007)

c. R Squared = .000 (Adjusted R Squared = -.003)

d. R Squared = .007 (Adjusted R Squared = .004)





2. Kruskal-Wallis Test

Ranks: Condoning condition

	Group	N	Mean Rank
Initial RT	Group 1	150	142.04
	Group 2	150	158.96
	Total	300	
Initial RT (Log)	Group 1	150	142.04
	Group 2	150	158.96
	Total	300	
Final RT	Group 1	150	156.43
	Group 2	150	144.57
	Total	300	
Final RT (Log)	Group 1	150	156.43
	Group 2	150	144.57
	Total	300	

Test Statistics: Condemning condition[a,b]

	Initial RT	Initial RT (Log)	Final RT	Final RT (Log)
Kruskal-Wallis H	1.366	1.366	.018	.018
df	1	1	1	1
Asymp. Sig.	.243	.243	.892	.892

a. Kruskal Wallis Test

b. Grouping Variable: Group

Ranks: Condoning condition

	Group	N	Mean Rank
Initial RT	Group 1	150	142.04
	Group 2	150	158.96
	Total	300	
Initial RT (Log)	Group 1	150	142.04
	Group 2	150	158.96
	Total	300	
Final RT	Group 1	150	156.43
	Group 2	150	144.57
	Total	300	
Final RT (Log)	Group 1	150	156.43
	Group 2	150	144.57
	Total	300	

Test Statistics: Condoning condition[a,b]

	Initial RT	Initial RT (Log)	Final RT	Final RT (Log)
Kruskal-Wallis H	2.853	2.853	1.402	1.402
df	1	1	1	1
Asymp. Sig.	.091	.091	.236	.236

a. Kruskal Wallis Test

b. Grouping Variable: Group

3. ANOVA with repeated measures[16]

Tests of Within-Subjects Contrasts: Condemning condition

Group	Source	Measure	RT	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	RT	Before_Log	Linear	84.939	1	84.939	7.168	.008	.046
		After_Log	Linear	1.469	1	1.469	37.524	<.001	.201
	Error(RT)	Before_Log	Linear	1765.680	149	11.850			
		After_Log	Linear	5.832	149	.039			
Group 2	RT	Before_Log	Linear	4.037	1	4.037	.031	.861	.000
		After_Log	Linear	.962	1	.962	24.826	<.001	.143
	Error(RT)	Before_Log	Linear	19466.854	149	130.650			
		After_Log	Linear	5.774	149	.039			

[16] ANOVA with bootstrap (BCa) presented the same results.

Tests of Within-Subjects Contrasts: Condoning condition

Group	Source	Measure	RT	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Group 1	RT	Before_Log	Linear	55.605	1	55.605	23.474	<.001	.136
		After_Log	Linear	1.289	1	1.289	55.208	<.001	.270
	Error(RT)	Before_Log	Linear	352.947	149	2.369			
		After_Log	Linear	3.478	149	.023			
Group 2	RT	Before_Log	Linear	140.987	1	140.987	32.789	<.001	.180
		After_Log	Linear	3.221	1	3.221	83.818	<.001	.360
	Error(RT)	Before_Log	Linear	640.670	149	4.300			
		After_Log	Linear	5.725	149	.038			

4. Wilcoxon test

Ranks: Condemning condition

Group			N	Mean Rank	Sum of Ranks
Group 1	Final RT - Initial RT	Negative Ranks	106[a]	78.15	8284.00
		Positive Ranks	44[b]	69.11	3041.00
		Ties	0[c]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	106[d]	82.22	8715.00
		Positive Ranks	44[e]	59.32	2610.00
		Ties	0[f]		
		Total	150		
Group 2	Final RT - Initial RT	Negative Ranks	108[a]	77.90	8413.00
		Positive Ranks	42[b]	69.33	2912.00
		Ties	0[c]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	108[d]	81.87	8842.00
		Positive Ranks	42[e]	59.12	2483.00
		Ties	0[f]		
		Total	150		

a. Final RT < Initial RT

b. Final RT > Initial RT

c. Final RT = Initial RT

d. Final RT (Log) < Initial RT (Log)

e. Final RT (Log) > Initial RT (Log)

f. Final RT (Log) = Initial RT (Log)

Test Statistics: Condemning condition[a]

Group		Final RT - Initial RT	Final RT (Log) - Initial RT (Log)
Group 1	Z	-4.919[b]	-5.727[b]
	Asymp. Sig. (2-tailed)	<.001	<.001
Group 2	Z	-5.161[b]	-5.966[b]
	Asymp. Sig. (2-tailed)	<.001	<.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Ranks: Condoning condition

Group			N	Mean Rank	Sum of Ranks
Group 1	Final RT - Initial RT	Negative Ranks	110[a]	80.28	8831.00
		Positive Ranks	40[b]	62.35	2494.00
		Ties	0[c]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	110[d]	83.27	9160.00
		Positive Ranks	40[e]	54.13	2165.00
		Ties	0[f]		
		Total	150		
Group 2	Final RT - Initial RT	Negative Ranks	121[a]	78.41	9488.00
		Positive Ranks	29[b]	63.34	1837.00
		Ties	0[c]		
		Total	150		
	Final RT (Log) - Initial RT (Log)	Negative Ranks	121[d]	81.41	9851.00
		Positive Ranks	29[e]	50.83	1474.00
		Ties	0[f]		
		Total	150		

a. Final RT < Initial RT

b. Final RT > Initial RT

c. Final RT = Initial RT

d. Final RT (Log) < Initial RT (Log)

e. Final RT (Log) > Initial RT (Log)

f. Final RT (Log) = Initial RT (Log)

Test Statistics: Condoning condition[a]

Group		Final RT - Initial RT	Final RT (Log) - Initial RT (Log)
Group 1	Z	-5.945[b]	-6.562[b]
	Asymp. Sig. (2-tailed)	<.001	<.001
Group 2	Z	-7.178[b]	-7.859[b]
	Asymp. Sig. (2-tailed)	<.001	<.001

a. Wilcoxon Signed Ranks Test

b. Based on positive ranks.

Appendix G. Questionnaire 1 correlations

1. Pearson's correlation[17]

Correlations (Condemning condition)

Group			Familiarity mean	Feeling of truth mean	Fluency mean	Cognitive ease mean
Proverb	Familiarity mean	Pearson Correlation	1	.162	.586	.692
		Sig. (2-tailed)		.048	<.001	<.001
	Feeling of truth mean	Pearson Correlation	.162	1	.310	.736
		Sig. (2-tailed)	.048		<.001	<.001
	Fluency mean	Pearson Correlation	.586	.310	1	.815
		Sig. (2-tailed)	<.001	<.001		<.001
	Cognitive ease mean	Pearson Correlation	.692	.736	.815	1
		Sig. (2-tailed)	<.001	<.001	<.001	
	Initial agreement	Pearson Correlation	-.021	.299	.076	.189
		Sig. (2-tailed)	.802	<.001	.353	.021
	Inicial RT	Pearson Correlation	-.009	-.248	-.046	-.158
		Sig. (2-tailed)	.909	.002	.576	.053
	Initial RT (Log)	Pearson Correlation	-.039	-.243	-.065	-.174
		Sig. (2-tailed)	.640	.003	.429	.033
	Initial extremity	Pearson Correlation	.090	.206	.153	.211
		Sig. (2-tailed)	.273	.011	.061	.010
	Initial FOR	Pearson Correlation	.147	.208	.228	.265
		Sig. (2-tailed)	.073	.011	.005	.001
	Final agreement	Pearson Correlation	-.080	.292	.026	.143
		Sig. (2-tailed)	.330	<.001	.748	.082
	Final RT	Pearson Correlation	.003	.071	-.024	.029
		Sig. (2-tailed)	.970	.390	.770	.727
	Final RT (Log)	Pearson Correlation	-.049	-.017	-.050	-.049
		Sig. (2-tailed)	.549	.833	.545	.555
	Final extremity	Pearson Correlation	.097	.224	.160	.226
		Sig. (2-tailed)	.240	.006	.051	.006
	Final FOR	Pearson Correlation	.089	.196	.186	.220
		Sig. (2-tailed)	.281	.016	.023	.007
	Maintenance of intuitions	Pearson Correlation	.228	.223	.213	.294
		Sig. (2-tailed)	.005	.006	.009	<.001

Correlations (Condoning condition)

Group			Familiarity mean	Feeling of truth mean	Fluency mean	Cognitive ease mean
Proverb	Familiarity mean	Pearson Correlation	1	.091	.313	.566
		Sig. (2-tailed)		.269	<.001	<.001
	Feeling of truth mean	Pearson Correlation	.091	1	.243	.739
		Sig. (2-tailed)	.269		.003	<.001
	Fluency mean	Pearson Correlation	.313	.243	1	.742
		Sig. (2-tailed)	<.001	.003		<.001
	Cognitive ease mean	Pearson Correlation	.566	.739	.742	1
		Sig. (2-tailed)	<.001	<.001	<.001	

[17] Bootstrap version presents the same results.

Correlations (Condoning condition)

Group			Familiarity mean	Feeling of truth mean	Fluency mean	Cognitive ease mean
	Initial agreement	Pearson Correlation	-.116	.238	-.018	.089
		Sig. (2-tailed)	.156	.003	.828	.278
	Initial RT	Pearson Correlation	-.042	.030	-.082	-.038
		Sig. (2-tailed)	.609	.720	.318	.647
	Initial RT (Log)	Pearson Correlation	-.020	.037	-.069	-.019
		Sig. (2-tailed)	.803	.650	.403	.818
	Initial extremity	Pearson Correlation	.006	-.017	-.029	-.022
		Sig. (2-tailed)	.945	.838	.723	.789
	Initial FOR	Pearson Correlation	.018	-.176	-.017	-.106
		Sig. (2-tailed)	.830	.031	.837	.198
	Final agreement	Pearson Correlation	-.121	.238	-.016	.088
		Sig. (2-tailed)	.139	.003	.845	.282
	Final RT	Pearson Correlation	-.115	.012	.047	-.012
		Sig. (2-tailed)	.159	.888	.569	.884
	Final RT (Log)	Pearson Correlation	-.059	.051	.048	.032
		Sig. (2-tailed)	.476	.534	.560	.695
	Final extremity	Pearson Correlation	.003	-.011	-.025	-.018
		Sig. (2-tailed)	.974	.891	.764	.829
	Final FOR	Pearson Correlation	-.007	-.183	-.020	-.120
		Sig. (2-tailed)	.934	.025	.809	.144
	Maintenance of intuitions	Pearson Correlation	.040	.019	.009	.029
		Sig. (2-tailed)	.631	.822	.915	.721

2. Spearman's Rho

Correlations (Condemning condition)

	Group			Familiarity mean	Feeling of truth mean	Fluency mean	Cognitive ease mean
Spearman's rho	Proverb	Familiarity mean	Correlation Coefficient	1.000	.145	.611	.608
			Sig. (2-tailed)	.	.078	<.001	<.001
		Feeling of truth mean	Correlation Coefficient	.145	1.000	.248	.757
			Sig. (2-tailed)	.078	.	.002	<.001
		Fluency mean	Correlation Coefficient	.611	.248	1.000	.757
			Sig. (2-tailed)	<.001	.002	.	<.001
		Cognitive ease mean	Correlation Coefficient	.608	.757	.757	1.000
			Sig. (2-tailed)	<.001	<.001	<.001	.
		Initial agreement	Correlation Coefficient	-.085	.354	.072	.240
			Sig. (2-tailed)	.300	<.001	.383	.003
		Inicial RT	Correlation Coefficient	-.012	-.214	-.053	-.164
			Sig. (2-tailed)	.888	.009	.517	.045
		Initial RT (Log)	Correlation Coefficient	-.011	-.214	-.053	-.164
			Sig. (2-tailed)	.889	.009	.517	.045
		Initial extremity	Correlation Coefficient	.135	.257	.123	.246
			Sig. (2-tailed)	.100	.002	.133	.002
		Initial FOR	Correlation Coefficient	.146	.232	.171	.258
			Sig. (2-tailed)	.074	.004	.037	.001
		Final agreement	Correlation Coefficient	-.110	.305	.018	.178
			Sig. (2-tailed)	.180	<.001	.829	.029
		Final RT	Correlation Coefficient	-.085	-.072	-.134	-.119
			Sig. (2-tailed)	.304	.379	.102	.146
		Final RT (Log)	Correlation Coefficient	-.085	-.072	-.134	-.119
			Sig. (2-tailed)	.304	.379	.102	.146

Correlations (Condemning condition)

Group			Familiarity mean	Feeling of truth mean	Fluency mean	Cognitive ease mean
	Final extremity	Correlation Coefficient	.178	.293	.113	.261
		Sig. (2-tailed)	.029	<.001	.167	.001
	Final FOR	Correlation Coefficient	.122	.234	.138	.235
		Sig. (2-tailed)	.137	.004	.091	.004
	Maintenance of intuitions	Correlation Coefficient	.195	.291	.230	.347
		Sig. (2-tailed)	.017	<.001	.005	<.001

Correlations (Condoning condition)

	Group			Familiarity mean	Feeling of truth mean	Fluency mean	Cognitive ease mean
Spearman's rho	Proverb	Familiarity mean	Correlation Coefficient	1.000	.074	.311	.489
			Sig. (2-tailed)	.	.367	<.001	<.001
		Feeling of truth mean	Correlation Coefficient	.074	1.000	.112	.715
			Sig. (2-tailed)	.367	.	.173	<.001
		Fluency mean	Correlation Coefficient	.311	.112	1.000	.668
			Sig. (2-tailed)	<.001	.173	.	<.001
		Cognitive ease mean	Correlation Coefficient	.489	.715	.668	1.000
			Sig. (2-tailed)	<.001	<.001	<.001	.
		Initial agreement	Correlation Coefficient	-.038	.226	-.028	.106
			Sig. (2-tailed)	.644	.005	.737	.197
		Initial RT	Correlation Coefficient	-.050	.031	-.097	-.038
			Sig. (2-tailed)	.542	.703	.237	.645
		Initial RT (Log)	Correlation Coefficient	-.050	.031	-.097	-.038
			Sig. (2-tailed)	.542	.703	.237	.645
		Initial extremity	Correlation Coefficient	-.009	-.099	-.029	-.078
			Sig. (2-tailed)	.914	.227	.726	.345
		Initial FOR	Correlation Coefficient	.023	-.160	.005	-.077
			Sig. (2-tailed)	.776	.050	.954	.351
		Final agreement	Correlation Coefficient	-.021	.219	-.049	.096
			Sig. (2-tailed)	.800	.007	.549	.242
		Final RT	Correlation Coefficient	-.062	-.017	.038	.019
			Sig. (2-tailed)	.450	.838	.645	.819
		Final RT (Log)	Correlation Coefficient	-.062	-.017	.038	.019
			Sig. (2-tailed)	.450	.838	.645	.819
		Final extremity	Correlation Coefficient	-.032	-.094	-.029	-.090
			Sig. (2-tailed)	.697	.253	.726	.274
		Final FOR	Correlation Coefficient	-.017	-.150	.008	-.115
			Sig. (2-tailed)	.833	.067	.925	.162
		Maintenance of intuitions	Correlation Coefficient	-.018	.001	-.005	-.024
			Sig. (2-tailed)	.824	.992	.949	.767

Appendix H. Questionnaire 2 correlations[18]

1. Pearson's correlation[19]

Correlations (Condemning condition)

		Deontological reasons	Consequentialist reasons	Other option
Initial agreement	Pearson Correlation	.163	.112	-.257
	Sig. (2-tailed)	.005	.053	<.001
Initial RT (Log)	Pearson Correlation	-.097	-.059	.138
	Sig. (2-tailed)	.095	.308	.017
Final agreement	Pearson Correlation	.198	.111	-.292
	Sig. (2-tailed)	<.001	.054	<.001
Final RT (Log)	Pearson Correlation	-.069	-.098	.158
	Sig. (2-tailed)	.231	.090	.006
Maintenance of intuitions	Pearson Correlation	-.005	.143	-.129
	Sig. (2-tailed)	.935	.013	.026

Correlations (Condoning condition)

		Deontological reasons	Consequentialist reasons	Other option
Initial agreement	Pearson Correlation	.114	-.201	.076
	Sig. (2-tailed)	.048	<.001	.189
Initial RT (Log)	Pearson Correlation	-.064	-.087	.136
	Sig. (2-tailed)	.266	.132	.018
Final agreement	Pearson Correlation	.082	-.187	.097
	Sig. (2-tailed)	.157	.001	.094
Maintenance of intuitions	Pearson Correlation	.043	.089	-.119
	Sig. (2-tailed)	.462	.125	.040

2. Spearman's Rho

Correlations (Condemning condition)

			Deontological reasons	Consequentialist reasons	Other option
Spearman's rho	Initial agreement	Correlation Coefficient	.162	.132	-.279
		Sig. (2-tailed)	.005	.022	<.001
	Initial RT (Log)	Correlation Coefficient	-.106	-.057	.120
		Sig. (2-tailed)	.067	.325	.038
	Final agreement	Correlation Coefficient	.175	.140	-.305
		Sig. (2-tailed)	.002	.016	<.001
	Final RT (Log)	Correlation Coefficient	-.061	-.096	.153
		Sig. (2-tailed)	.290	.098	.008

[18] We performed correlations involving the same variables as in Questionnaire 1, but this time we only present those with significant results. For clarification purposes, it is important to remember that "deontological reasons", "consequentialist reasons", and "other option" refer to the number of times in which these alternatives were chosen.

[19] Bootstrap version presents the same results.

Correlations (Condoning condition)

			Deontological reasons	Consequentialist reasons	Other option
Spearman's rho	Initial agreement	Correlation Coefficient	.153	-.205	.060
		Sig. (2-tailed)	.008	<.001	.303
	Initial RT (Log)	Correlation Coefficient	-.071	-.073	.134
		Sig. (2-tailed)	.220	.207	.021
	Final agreement	Correlation Coefficient	.135	-.178	.064
		Sig. (2-tailed)	.019	.002	.266