The Ethical Dangers of Deliberative Decision Making

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Research on ethical decision making has been heavily influenced by normative decision theories that view intelligent choices as involving conscious deliberation and analysis. Recent developments in moral psychology, however, suggest that moral functions involved in ethical decision making are metaphorical and embodied. The research presented here suggests that deliberative decision making may actually increase unethical behaviors and reduce altruistic motives when it overshadows implicit, intuitive influences on moral judgments and decisions. Three lab experiments explored the potential ethical dangers of deliberative decision making. Experiments 1 and 2 showed that deliberative decision making, activated by a math problem-solving task or by simply framing the choice as a decision rather than an intuitive reaction, increased deception in a one-shot deception game. Experiment 3—which activated systematic thinking or intuitive feeling about the choice to donate to a charity—found that deliberative decision making could also decrease altruism. These findings highlight the potential ethical downsides of a rationalistic approach toward ethical decision making and call for a better understanding of the intuitive nature of moral functioning.●

Corporate scandals have crowded American media for the last decade: Enron, WorldCom, Tyco, and what contributed to the recent Wall Street meltdown, to name just a few. Although individuals' unethical conduct—such as hiding corporate losses to obtain lucrative bonuses, reporting fraudulent auditing to secure a client, or giving loans to home buyers who cannot afford them—are seldom the sole cause, their decisions sit at the center of those calamities. This makes understanding how people resolve ethical dilemmas that pit self-interest against doing the right thing more important than ever. Consequently, studies on ethical decision making have proliferated across multiple disciplines, including behavioral economics, organizational behavior, and psychology. A recent review (Tenbrunsel and Smith-Crowe, 2008) counted 54 articles in the field of organizational behavior on ethics from 1980 to 1989, and 473 from 2000 to 2007.

As its name suggests, the ethical decision-making literature is heavily influenced by normative decision theories that characterize intelligent choices as involving systematic and analytic deliberation (March, 1988). Expected utility theory, for example, assumes that individuals know what is best for them (e.g., utility) and seek Bayesian maximization of their expected utility. Although behavioral decision research has provided numerous qualifications to the assumption that people are able to maximize their utility, documenting a wide array of cognitive heuristics and biases (e.g., Tversky and Kahneman, 1974), they have only rarely challenged the normative nature of decision theories. As a result, decision models continue to work under the assumption that decision makers should be deliberative and analytical (Etzioni, 1988; Moore and Flynn, 2008). This rationalistic approach dominates research on ethics even though ethical decision making usually involves a different set of principles than decision making under uncertainty. With few exceptions, major

theories in the field of organizational research consider ethical decision making as a conscious, intentional, and deliberative process (see Treviño, Weaver, and Reynolds, 2006, for a review). In contrast, recent advances in psychology provide a decidedly different picture of how individuals make choices, indicating that deliberative decision making can actually impair people's ability to make ethical decisions in moral dilemmas (e.g., Damasio, 1994). To explore the possible ethical dangers of deliberative decision making, I conducted a series of three experiments to test the effects of approaching a moral dilemma as a deliberative, conscious decision, as opposed to being guided by intuitive reactions, on deception and then on charitable giving.

ETHICAL DANGERS OF DELIBERATIVE DECISION MAKING

Moral Reasoning

Contemporary theories in ethical decision making are heavily influenced by Kohlberg's (1963) model of moral development, in which he views morality as primarily a function of reason and cognition. Kohlberg observed that people were able to articulate sophisticated reasoning when they were asked to resolve hypothetical moral dilemmas. Based on responses to structured interviews, he proposed a cognitive moral development model in which individuals making moral judgments are seen as playing the role of a judge, weighing issues of harm, rights, justice, and fairness through a conscious, language-based process of reason and decision making.

Kohlberg outlined three cognitive levels that indicate different levels of maturity in moral judgment and reasoning, from the preconventional to the conventional to the postconventional level. The preconventional level, in which moral reasoning is almost purely egocentric, is most commonly seen among children; people at this level tend to judge the morality of an action based on its physical (e.g., punishment) or hedonic consequences. The conventional thinking people judge the morality of an action by comparing it to societal views and expectations and focus on norms, laws, dictums, and social conventions. Postconventional thinking is also known as principled thinking: people at this level recognize individuals as separate entities from society who believe that laws should be obeyed not as rigid dictums but as ways to promote general social welfare. When people progress from the preconventional to the postconventional, they move from relying on personal reactions (e.g., fear of punishment) to basing their judgment on abstract reasoning.

This rationalistic tone has permeated subsequent research on ethical decision making. Scholars have typically viewed ethical decision making as a systematic process that involves discrete cognitive activities (Treviño, Weaver, and Reynolds, 2006). Rest (1986), for example, proposed that a person making a moral choice moves from recognizing a moral issue to making a moral judgment to establishing moral intent and finally to reaching a decision. Although other models vary in the cognitive steps they focus on, explicit awareness of a moral problem and conscious moral judgment tend to be at their core.

These models suggest that ethical decision making starts when people are consciously aware that a moral problem exists in a situation or that a moral standard is relevant to the circumstances. Thus failure to recognize moral relevance often results in moral violations. This is consistent with research on "bounded ethics." Drawing on "bounded rationality," the notion that complex problem solving is often bounded by situations and people's limited cognitive capacity (Simon, 1947), researchers have suggested that people are ethically bounded and are often unable to recognize the moral consequences and implications of the situations they are in (Murnighan, Cantelon, and Elyashiv, 2001; Chugh and Bazerman, 2007). Consequently, being aware of moral relevance is a necessary first step toward making ethical choices. Once a person becomes aware of an ethical issue, moral judgment processes are triggered, and Kohlberg's moral development model comes into play as a guiding framework. Although Kohlberg acknowledged that affect and feeling can play a role in moral judgments, especially at early stages of moral development, he considered postconventional reasoning, which takes an impartial moral point of view, considers everyone's welfare, and acts on universal principles, the most sophisticated reasoning and the goal of moral education and development (Narvaez, 2010).

Thus the dominant voice in the ethical decision making literature is both prescriptive and descriptive. On the one hand, it suggests that people should resolve moral dilemmas with deliberative decision making; on the other hand, it describes people actually making ethical decisions consciously and systematically. Although this rationalistic view does not completely exclude the influence of emotions—Gaudine and Thorne (2001), for example, analyzed how positive affect may influence the steps of the cognitive model proposed by Rest (1986)—in these models, intuition and emotion are not seen as integral to moral functioning. This dominant view also does not equate reason or cognition with ethical outcomes. Obviously people are capable of reasoning and thinking to justify and rationalize their moral transgressions. Moral disengagement, for example, frees individuals from self-sanctions and guilt through the cognitive reconstruction of behavior, distorting one's responsibility for harmful behavior, and blaming the victim (Bandura, 1986). Rather, underlying this approach is the assumption that moral laws can be deduced from a set of basic principles in a quasi-mathematic fashion, with analytic reasoning and logic forming the basis of moral functioning (Haidt, 2001; Monin, Pizarro, and Beer, 2007). This assumption, however, has been questioned in recent research in moral psychology.

Embodied Morality

Moral philosophers often analyze thought experiments, i.e., "what would you do if . . . ?" One particularly intriguing thought experiment involves two structurally equivalent dilemmas in which a runaway trolley is headed toward five people and will kill them if not stopped. In the switch dilemma, the only way to save the five is to hit a switch that will turn the trolley onto an alternate set of tracks where it will kill one person instead of five; in the footbridge dilemma, the

only way to save the five is to push a stranger onto the tracks from a footbridge spanning the tracks. The stranger will die, but his body will stop the trolley from reaching the others. In both cases, people must decide whether it is right to kill one person to save five others. Consequentialist or deontological reasoning should lead to the same response in the two dilemmas: if it is appropriate to kill one person to save five, then the answer should be "Yes" to both choices. Yet most people indicate that they would pull the switch that would kill a stranger but they tend to be reluctant to push a stranger to his death.

People's reactions to these dilemmas present a puzzle to the rationalistic view of ethical decision making: if no set of consistent, readily accessible moral principles dictates what behavior is or is not appropriate in these cases, what accounts for the variance in people's judgment? Greene et al. (2001) argued that people's different responses may be due to their emotional reactions to these situations. In a functional magnetic resonance imaging (fMRI) study, they found that the regions of participants' brains that are associated with emotional functions (e.g., medial frontal gyrus, posterior cingulate gyrus, and bilateral angular gyrus) were more active when they were contemplating moral dilemmas like the footbridge dilemma than when they were contemplating those like the switch dilemma. The thought of pushing someone to his death was more emotionally salient than the thought of pulling a switch, even though the actions produced the same consequences (Greene et al., 2001). Thus emotional reactions may dictate moral judgments when reason and logic are unable to provide a consistent guiding principle.

Instead of simply saying that emotions can influence moral judgment, Haidt (2001) challenged the primacy of reason in moral judgment. According to his social intuitionist model, moral judgment is determined by a quick flux of intuitions of rightness or wrongness that require no reflection or reason. These intuitions are innate, evaluative feelings that are evolutionarily selected and shaped by culture, custom, and socialization processes. Disgust, for example, is rooted in our evolutionary past to avoid the intake of potentially poisonous food; over time it has expanded to communicate a sense of wrongness in social and cultural domains, including moral violations (Rozin, Haidt, and McCauley, 1993). Physical and moral disgust not only are expressed by similar facial expressions and physiological activation (Chapman et al., 2009; Rozin, Lowery, and Ebert, 1994), but they also employ partially overlapping brain regions of the frontal and temporal lobes (Moll et al., 2002).

Empirical support for the intuitionist model was initially based on a set of scenarios designed to evoke strong feelings of disgust (e.g., Haidt, Koller, and Dias, 1993). One example involved protected consensual sexual intercourse between adult siblings; another involved eating the family dog after a hit and run accident. Participants were typically quick to judge that these actions were wrong but were unable to articulate the harm that these actions could have caused or the moral rules violated, a phenomenon termed "moral dumbfounding" (Haidt, 2001). More recent studies have also found that

incidental disgust induced by hypnosis or objects unrelated to the target of moral judgment can lead to harsh moral judgments (Schnall et al., 2008). Wheatly and Haidt (2005), for example, hypnotized participants to experience disgust upon hearing a cue word but to have no memory of this instruction. After coming out of hypnosis, participants read a few scenarios of actions that either contained the cue word or not and were asked to judge the extent to which those actions were wrong. They found that participants judged actions to be more wrong when the description contained the cue word than when it did not. Likewise, Schnall and colleagues (2008) showed that the presence of a disgusting smell can increase the severity of moral judgment and that this effect of incidental disgust disappeared among participants who washed their hands before they made their moral judgments (Schnall, Benton, and Harvey, 2008). Together, these findings suggest that moral judgment is often not a product of deliberative reflection but a result of an automatic process that relies on intuitive feelings (e.g., Haidt, 2001).

The possibility that an emotion such as disgust can influence or even dominate moral thinking may reveal a general quality of moral inquiry: moral reasoning is not abstract but is metaphorical and is embodied in concrete somatic experiences. From development and learning perspectives, individuals first acquire concrete bodily concepts such as cold versus warm before they grasp higher-level, abstract constructs such as morality. Those lower-level constructs then form a conceptual basis that influences how people make sense of abstract constructs (Lakoff and Johnson, 1980). Thus time is understood through spatial metaphors (e.g., "falling *behind* schedule," Boroditsky, 2000), and social exclusion feels like physical coldness (Zhong and Leonardelli, 2008).

Moral evaluations may be similarly grounded in tactile sensory experiences (Sherman and Clore, 2009; Zhong, Strejcek, and Sivanathan, 2010). For instance, recent research has shown that morality is partly represented as physical cleanliness. Zhong and Liljenquist (2006) found that moral transgressions literally feel dirty. Individuals who were reminded of their past unethical behaviors felt a greater need to physically cleanse themselves than those who thought about their ethical behaviors. Moreover, physical cleansing can actually make people feel that they are morally untainted, and this enhanced moral self-perception can reduce their motivation to engage in prosocial behaviors and seem to give them license to make harsher moral judgments of others (Zhong and Liljenquist, 2006; Zhong, Strejcek, and Sivanathan, 2010). These findings suggest that moral functioning is embodied in concrete physical cleanliness and that moral intuitions may stem from socially adapted experiences of purity violations. Thus it is no surprise that disgust, the signature emotional reaction to purity violations, plays an important role in determining moral judgment.

The role of concrete somatic experiences in informing moral judgments and regulating moral behaviors is also shown in Damasio's (1994) research. Damasio and his colleagues studied patients who suffered from ventromedial prefrontal cortex (VMPFC) damage, which causes the loss of emotional

responsiveness in general. They observed that although these patients continued to have normal reasoning abilities, they were unable to make adaptive, value-based decisions in a variety of practical and moral contexts and were more likely to display antisocial behaviors (e.g., Bechara et al., 1994, 1996; Damasio, Tranel, and Damasio, 1990). Commenting on one extensively studied patient, Damasio (1994: 51) stated, "I . . . had a strong suspicion that the defect in emotion and feeling was not an innocent bystander next to the defect in social behavior. . . . I began to think that the cold-bloodedness of Elliot's reasoning prevented him from assigning different values to different options, and made his decision-making landscape hopelessly flat." Based on these observations, Damasio (1994) proposed that somatic states, which include not only emotions but also sensations from both the viscera and the skeletal and smooth muscles, participate directly in regulating our behaviors by signaling our values and preferences associated with real or imagined behavioral options. Brain dysfunctions that disrupt somatic feedback may thus impair individuals' ability to make moral judgments and decisions even though they pose no threat to people's abstract reasoning ability.

Thus, rather than viewing the formation of moral judgments as applying a set of neatly derived, universally applicable laws of logic, recent research on moral intuition and embodied morality proposes a messier picture in which morality is grounded in our flesh and bones and intertwined with emotions, tactile sensory input, and other concrete somatic experiences. These components are integral parts of moral experience and contribute substantially to our sense of right versus wrong. Importantly, the effects of these somatic factors are not always conscious. As in the case of moral dumbfounding (Haidt, 2001), even though people's moral judgment was determined by their visceral experience of disgust, they had no idea that such an influence was operating. This description of how people actually understand morality stands in sharp contrast to the prescriptive nature of the dominant rationalistic approach to ethical decision making.

Ethical Dangers

The distinction between the deliberative approach in the ethical decision-making literature and the intuitive, embodied nature of moral functioning corresponds to similar dual-processing models, such as thinking-conceptual-logical versus intuitive processing (Jung, 1968), extensional versus heuristic processing (Tversky and Kahneman, 1983), system 1 and system 2 (Stanovich and West, 2000), and propositional versus associative processes (Gawronski and Bodenhausen, 2006). These models distinguish conscious, deliberative, and analytic processing dominated by reason and rational thinking from unconscious, automatic, and experiential processing that is often emotionally charged (Epstein et al., 1996; Stanovich and West, 2000; Loewenstein et al., 2001). Although most of our daily behaviors are the result of collaboration between these two processing modes, these processes do not always work in the same direction. Traditional research in the decision-making literature, for instance, has primarily focused on how correlates of the intuitive process (e.g., emotions) can

flood the consciousness and take control of behaviors (see Tversky and Kahneman, 1983; LeDoux, 1996). In the past two decades, however, growing evidence suggests that the adoption of a deliberative and analytic approach can also disrupt intuitive and automatic functioning.

Scholars have long observed that many scientific discoveries were guided by unexpected insights (James, 1890), and the processes that produce such insights occur so rapidly that they can only rarely be recognized and verbalized consciously (e.g., Dijksterhuis and Meurs, 2006; Zhong, Dijksterhuis, and Galinsky, 2008). More importantly, researchers have found that the effort to verbalize these processes (i.e., think aloud) can actually hurt insight problem solving (e.g., Schooler, Ohlsson, and Brooks, 1993; Zhong, Dijksterhuis, and Galinsky, 2008), presumably because verbalization may interfere with less readily verbalizable processes that are critical in insight problem solving (Schooler, Ohlsson, and Brooks, 1993). This disruptive effect has also been observed in impression formation (Schlenker, 1987), implicit learning (Lieberman, 2000), and decision making (Wilson and Schooler, 1991). People who were asked to think deliberatively before forming impressions, learning a sequence, or choosing a product exhibited less accurate impressions, poorer learning, and inferior choices.

What is common among these activities is the involvement of intuitive, unconscious factors. For example, students can form accurate impressions of their teachers' teaching skills and performance in a split-second even though they are not able to recognize and articulate the factors that have driven their impressions (Ambady and Rosenthal, 1993). Similarly, our preferences and choices are often determined by factors that are not consciously accessible (e.g., subtle taste of a product that we are not able to articulate), and hence we are often unaware of exactly why we feel the way we do about an attitude object. When asked to think about the reasons for their impressions and preferences, people tend to focus on plausible explanations that are salient and recognizable (e.g., color of the product), which may have little influence on their overall reactions (Schlenker, 1987; Wilson and Schooler, 1991). For example, Wilson and Schooler (1991) asked participants to choose different products (e.g., jam) and asked some of them to "analyze why you feel the way you do" about each product. They found that people who thought deliberatively about their preferences chose products that were of poorer quality than people who chose intuitively.

The interaction between deliberative and intuitive processes may give rise to ethical dangers in deliberative decision making. Given that moral functioning involves intuitive and embodied components whose effects do not always register consciously, a deliberative decision-making approach may overshadow the influences of intuitive factors and, instead, lead people to focus on other salient and plausible factors, such as monetary payoffs, as the basis for their choices. As discussed above, intuitive factors such as emotions and other somatic experiences contribute integrally to our moral experience and comprise our sense of rightness and wrongness. Normally they serve as somatic markers that accompany

different behavioral choices, signaling our values or preferences toward those options (Damasio, 1994). For example, contemplating deception is likely to automatically induce negative feelings such as guilt and disgust as well as associated visceral experiences such as a racing heartbeat and sweaty palms. These negative somatic states signal to us our intuitive disapproval of deception, that deception should be avoided, whereas contemplating honesty may automatically induce a set of positive somatic states that encourage us to behave honestly. In other words, somatic states inform us of the degree to which we care about or value different alternatives and help us avoid unethical choices (Damasio, 1994). When the influences of these unconscious factors are overshadowed by deliberative decision making, people may be more likely to engage in unethical behaviors.

Dienstbier and colleagues (1975) demonstrated how a reduction in somatic influence can license unethical behavior. Participants in one of their experiments engaged in a task in which they could cheat. Before the task, some participants were given a placebo that supposedly causes symptoms similar to the visceral experience of guilt, such as trembling hands or an increasing heart rate. The authors found that participants who had taken the placebo cheated more than those who had not, presumably because the placebo provided an obvious explanation for the physical symptoms associated with guilt and hence compromised the somatic experience of guilt. These findings are consistent with Damasio's observation of VMPFC-damaged patients whose lack of emotional responsiveness led to violent and antisocial behaviors. They highlight the relevance and importance of somatic states in moral functioning and how pure reason without complementing somatic experiences, a state of "cold-bloodedness" in Damasio's words (Damasio, 1994: 51), can fundamentally impair our ability to make complex value judgments and decisions.

Surely a deliberative decision-making approach to moral dilemmas will not have as strong an impact on reducing the influence of somatic states as brain damage. Nevertheless, it may still raise cold-bloodedness that allows decision makers to carry out questionable behaviors that their intuitions would otherwise censure. This is not to suggest that people should abandon deliberative thinking when confronting moral dilemmas; on their own, intuitions may have similar failings. The ethical dangers of deliberative decision making surface not because reason and deliberation will always lead to undesirable moral consequence but because they *can.* Thus this paper challenges the "worship of reason" in moral psychology (see Haidt, 2001) and the largely unquestioned confidence that deliberative, conscious decision making should trump intuition in ethical decision making (e.g., Baron, 1998). Three experiments were designed to reveal the potential shortcomings of reason and deliberation when they reduce the influence of moral intuitions. Experiment 1 induced deliberative thinking by having participants solve math problems (as opposed to examine their feelings) before they engaged in a deception task in which they could lie to benefit themselves, allowing them to become "calculatively deceptive."

Experiment 2 used the same task and activated deliberative decision making by framing the task as making a decision (as opposed to having an intuitive reaction). Finally, Experiment 3 extended the ethical consequences of deliberative decision making on selfishness and examined individuals' willingness to donate to a charitable cause when their actions were simply referred to as a decision or an intuitive reaction.

EXPERIMENT 1: CALCULATIVELY DECEPTIVE

Deception is common in business transactions. From craigslist sellers describing damaged goods as flawless to Wall Street rating agencies assigning excellent ratings to junk securities, people do not always behave honestly when they have private information and a conflict of interests. Deception can be very costly. In addition to harming those who are deceived, deceivers also tend to experience emotional distress that persists long after lies are told (Shaffer, 1975). Deceptions, when discovered, can wreak havoc on a relationship by planting the seeds of distrust, and even undiscovered lies can damage a relationship when they lead the liar to distrust others (Sagarin, Rhoads, and Cialdini, 1998). As a vivid example of the social cost of deception, dishonest behaviors in both the real estate and financial industry were strongly linked to the recent subprime crisis, which has cost the U.S. economy many billions of dollars.

Experiment 1 predicted that deliberative decision making (as opposed to intuitive reactions) would increase deception in Gneezy's (2005) Deception Game, in which participants with private information must decide whether to lie in hopes of increasing their personal gain.

Method

Participants and design. Forty eight undergraduates (16 male) at the University of Toronto volunteered; they ranged in age from 17 to 39 with a median of 21; 29 were Asian, 12 Caucasian, and 7 had other ethnic backgrounds. The experiment used a single-factor (deliberative versus intuitive) between-participants design. Participants were paid $10 for their 30-minute participation.

Materials and procedure. Upon arrival, participants were seated in front of a computer. The experimenter told them that they would be randomly paired with another person in a different room and that they would interact only via their computers. The experimenter emphasized that their identities would remain completely anonymous. Participants were then randomly assigned to the deliberative or intuitive condition and engaged in a one-shot deception game, although none of the "game" language was used in the experiment. The experimenter always referred to the game as an "interaction."

The game involves monetary distributions between two parties, an advisor and an advisee, but participants did not see those labels. There were two payment options: option A gave $5 to the advisor and $15 to the advisee; option B gave $15 to the advisor and $5 to the advisee. Only the advisor knew

the value of the two options; the advisee knew that there were two options but had no other information. The advisee chose between the two options after receiving a message from the advisor, who could send either a true message, "option A will earn you (the advisee) more money than option B," or a lie, "option B will earn you more money than option A." Thus the advisor had private information and could lie or tell the truth. The advisor was told that 80 percent of the people in the other role tended to trust the message. Because the focus of this research was on deception, all participants played the advisor role against a computer program.

The main dependent variable was whether participants lied to get more money, unethical behavior that differs from self-interested behaviors in general. For example, in a typical symmetric prisoners' dilemma, both parties have the same information and power, and they decide to compete or cooperate simultaneously. Competition in the prisoners' dilemma is self-interested but not unethical, as it may be driven by a self-protection motive as much as by greed. In the deception game, however, participants had private information and the upper hand. Their decision to lie explicitly exploited their counterpart's information disadvantage and constituted the kind of clear transgression and fraud that often surface in competitive business transactions.

After sending their message, participants were asked whether they thought that sending the false message was an explicit lie (7-point scale, from 1 = Strongly disagree to 7 = Strongly agree) and answered several demographic questions before being dismissed.

Independent variable. Previous research has shown that asking people to calculate math problems or examine their feelings can activate a deliberative, analytic mindset or an intuitive mindset, respectively (Hsee and Rottenstreich, 2004; Small, Loewenstein, and Slovic, 2007). Thus in the deliberative decision-making condition, before engaging in the deception game, participants answered five questions requiring conscious and deliberative calculations (e.g., If an object travels at five feet per minute, then by your calculations how many feet will it travel in 360 seconds?). In the intuition condition, they answered five questions before engaging in the deception game that required them to report their feelings (e.g., when you hear the name "George W. Bush," what do you feel?). These items were originally used by Hsee and Rottenstreich (2004).

Results

Four participants suspected the purpose of this experiment and were excluded from subsequent analyses. As predicted, participants in the deliberative condition were almost twice as likely to lie as those in the intuition condition (68.2 percent versus 36.4 percent), $\chi^2 = 4.46$, $p = .035$. Participants in both conditions agreed that sending the false message was an explicit lie (mean = 5.27, S.D. = 2.14 in the deliberative condition, and mean = 5.86, S.D. = 1.67 in the intuition condition), $F(1, 42) = 1.04$, $p = .31$; both means were significantly greater

than the scale midpoint, t(21) > 2.79, *p* < .01. Thus it seems that a series of simple calculations prior to the deception game increased deception without changing people's explicit understanding of the moral situation, as participants in both conditions considered sending the false messages as a form of lying.

EXPERIMENT 2: DECIDEDLY DECEPTIVE

Experiment 2 was designed to fulfill two purposes. First, Experiment 1 showed that deliberative decision making activated by solving a series of math problems before encountering a moral dilemma can increase deception. Experiment 2 used a different induction procedure in an attempt to tie the ethical dangers more directly to the deliberative decision-making approach by simply framing tasks as decisions as opposed to intuitive reactions, without asking participants to solve math problems.

The term "decision making" is almost synonymous with deliberative processing in our culture. The word "decide" originally came from the judicial context, in which judgments and verdicts are consciously deliberated based on facts. This view of decision making as a conscious and analytic process dominates the academic and popular culture. With few exceptions (e.g., Dijksteruis and Nordgren, 2006), the literature largely assumes that more deliberation is equivalent to better decision making (Lieberman, 2000) and has dedicated many pages to exploring how people can improve their judgments and decisions by adopting analytic, systematic reasoning (e.g., Tversky and Kahneman, 1974; Nisbett and Ross, 1980). Educational institutions also focus on the importance of deliberative thinking and pay "little attention to the development of intuitive understanding" (Bruner, 1960: 56). This direct correspondence between decision making and deliberative processing can be seen as a cultural value that is institutionalized in our political, legal, and school systems. Thus, for Experiment 2, I predicted that simply framing a task as a decision, as opposed to an intuitive reaction, should be sufficient to trigger a deliberative and analytical process and hence induce unethical behavior.

Second, I argued that unethical decisions may result from deliberative processes overshadowing intuitive processes, making other salient, plausible factors the likely determinants of decision outcomes. Experiment 2 explicitly tested this mechanism by measuring the extent to which monetary payoffs or emotional reactions drove participants' decisions. Experiment 2 also measured emotional states, including common emotional reactions to moral violations, such as guilt, disgust, and anxiety, after the deception game and investigated whether they correlated with participants' decisions to lie. I focused on emotions rather than other forms of somatic experiences because emotions are the best understood and most frequently articulated intuitive factor in moral functioning even though they may not be the most powerful force that drives moral judgments and decisions. Thus these process measures should not be taken as fully representing intuitive processes in moral functioning but nevertheless can be useful indicators.

Method

Participants and design. The participants were 41 undergraduate students from the University of Toronto, recruited via campus posters; 18 were male; 20 were Asian, 10 Caucasian, and 11 had other ethnic backgrounds; most participants were 18 to 25 years old. They were paid $10 for their 30-minute participation. The experiment used a single-factor between-participants design (decision versus intuition framing).

Materials and procedure. This experiment used the same deception game as in Experiment 1. Upon arrival, participants were told that they would be randomly paired with another person in another room and that they would interact only via computer, to ensure anonymity. As before, participants all played the same advisor role, and they all interacted with a program rather than another person.

The two experimental conditions were activated by including decision- or intuition-related words multiple times in the instructions, as shown in the Appendix. In the decision condition, participants read that "researchers are interested in how people make *decisions* in different social situations"; they were later asked to click the button next to the message that they *decided* to send. In the intuition condition, they read that "researchers are interested in people's *intuitive reactions* to different social situations" and were later asked to click the button next to the message that they *felt like* sending.

After sending their message, participants answered a number of questions that probed the underlying mechanisms of ethical dangers plus several demographic questions. They indicated how much their expected payoff ("my choice between the two messages was driven by my expected payoff") and their emotions ("when I was choosing between the two messages, my emotion did not play any role") influenced the message that they sent. Given that intuition and emotions are often considered biases to decisions that should be avoided, the question about emotion was reverse coded to potentially reduce the stigma people associate with admitting that their decisions were driven by their intuitions and emotions. All items were measured on 7-point scales (from 1 = Strongly disagree to 7 = Strongly agree). Participants also indicated how much they experienced different emotions such as guilt, disgust, and anxiety, also on 7-point scales (from 1 = Not at all to 7 = Extremely) before being dismissed.

Results and Discussion

Participants in the decision condition were again more than twice as likely to lie (61.9 percent) as those in the intuition condition (30 percent), $\chi^2 = 4.19$, $p = .041$. In addition, a 2 (framing: decision versus intuition) × 2 (influence factor: payoff versus emotion) mixed analysis of variance (with influence factor as a repeated factor) suggests that the influence of payoff versus emotion on their decisions depended on the framing of the task, $F(1, 39) = 5.28$, $p = .027$. Simple effects analyses showed that participants in the intuition condition indicated that their choices were

influenced more by emotion (mean = 5.30, S.D. = 1.45) than by expected payoff (mean = 4.00, S.D. = 2.32), $F(1, 39) = 4.50$, $p = .04$; in contrast, decision-condition participants indicated that their choices were influenced more by payoff (mean = 5.24, S.D. = 1.92) than by emotion (mean = 4.57, S.D. = 1.63), $F(1, 39) = 1.24$, $p = .27$.

Moreover, a mediation analysis examined whether the reported influence of payoff or emotion mediated the effect of decision or intuition framing on deception. Following Baron and Kenny (1986), in addition to the step 1 logistic regression linking decision framing to true or false messages, I regressed deception on influence factors (i.e., payoff and emotion) (step 2) and then on decision framing while controlling for influence factors (step 3). The decision framing was coded 1 for the rational prime and 2 for the intuitive framing; the dependent variable was coded 1 for true message and 2 for false message. Results are presented in table 1. As model 1 shows, the step 1 binary logistic regression yielded the same result as the χ^2 test, showing that the decision instructions increased deception when compared with the intuition instructions. As shown in model 2, in step 2 logistic regression, only payoff, but not emotion, significantly influenced deception, showing that the more participants focused on monetary payoffs, the more they lied. Finally, when payoff was included in the third logistic regression model with deception as the dependent variable and framing as the independent variable, the previously significant relationship between framing and deception was no longer significant. This suggests that participants in the decision condition were more likely to lie than those in the intuition condition because they focused more on their expected payoffs. These findings not only replicated Experiment 1 but also provided preliminary evidence for the underlying mechanism of the ethical dangers of the deliberative decision-making approach. Consistent

Table 1

Mediation Analyses for Experiment 2*

	Model 1	Model 2	Model 3
Decision-making prime			
B	−1.33•		−.98
	(.66)		(.74)
Wald	4.04		1.74
Exp(B)	.26		.38
Emotion			
B		−.13	−.08
		(.23)	(.24)
Wald		.31	.11
Exp(B)		.88	.93
Payoff			
B		.52••	.49•
		(.19)	(.20)
Wald		7.37	6.21
Exp(B)		1.69	1.64

• $p < .05$; •• $p < .01$.
* Standard errors are in parentheses.

with the overshadowing hypothesis (Wilson and Schooler, 1991), the results indicate that decision-primed participants based their choices more on a salient and plausible factor, i.e., their monetary payoff, than did the intuition-primed framed participants. The self-reported influence of emotions, however, did not mediate the effects of framing. This may speak to the nonconscious nature of intuitive influence. Even though intuitive factors like emotions can drive people's choices, their influence may not be consciously recognized.

Finally, a multivariate analysis of variance of self-reported emotions with framing as the independent variable and the 12 emotional states as the dependent variables revealed no omnibus difference across the two conditions, Wilk's λ (12, 28) = .76, p = .70; none of the between-subjects effects of framing on individual emotions reached statistical significance. But, as shown in table 2, the correlations between deception and emotional states revealed some clear differences between the two conditions. In the intuition condition, participants who lied reported feeling less calm and more anxiety, disgust, fear, and sadness—distress emotions that individuals commonly experience after moral transgressions. In the decision condition, however, these correlations were consistently non-significant. Thus simply framing a choice as a decision seemed to have severed people's common emotional reaction to their own transgressions, as the decision-condition participants who lied reported experiencing no more distress emotions than those who did not.

The finding that participants in the decision-framing condition lost common emotional reactions to deception bears striking similarity to the reactions of patients with VMPFC dysfunction in Damasio's Iowa gambling task (Damasio, 1994), in which they drew from four virtual decks of cards on a computer screen with different odds of winning or losing money. Some of the decks were "bad decks," leading to losses over the long run, and other decks were "good decks," leading to

Table 2

Correlations between Message Truthfulness and Emotional Reactions*

Emotional reactions	Intuition frame	Decision frame
Calm	−.385	−.014
Angry	.285	−.044
Guilty	.083	.227
Amused	.183	−.339
Empathic	.173	−.212
Anxious	.406	−.128
Disgusted	.524•	−.135
Fear	.468•	.045
Sad	.524•	.025
Annoyed	.287	.000
Grateful	.045	.306
Happy	−.129	.203

• p < .05; •• p < .01.
* A positive correlation indicates that participants who lied experienced stronger target emotions than those who did not lie.

overall gains. After sampling cards from each deck for a dozen rounds, most healthy participants were fairly good at sticking to the good decks. Patients with cortex damage, however, continued to take cards from the bad decks. More importantly, Damasio and colleagues monitored participants' galvanic skin response throughout the gambling task and found that healthy participants showed a distress reaction to impending punishment (i.e., hovering over the bad decks, even before they were consciously aware of these decks' associated probabilities), whereas patients with VMPFC dysfunction never developed this physiological reaction to impending punishment. This is a classic demonstration of what Damasio (1994) described as a "flat decision landscape" or "cold-blooded" decision making, in which there is a disconnect between emotional and physiological reactions and decision choices. Thus a deliberative decision-making approach, even activated by simply framing a choice as a decision as opposed to an intuition, seemed to have raised the "cold-bloodedness" in decision processes and increased deception. The third experiment showed that the consequences of this "cold-bloodedness" may not be limited to deceptive behaviors but can also make people more selfish and less compassionate toward others.

EXPERIMENT 3: DECIDEDLY SELFISH

Experiments 1 and 2 showed that deliberative decision making can overshadow the influence of intuitive factors that would normally inhibit moral violations. In addition to regulating unethical behavior, however, somatic experiences may also motivate virtuous acts. For example, previous research has shown that empathy is a powerful force motivating prosocial behavior among both children and adults (Batson et al., 1995; Eisenberg, 2000). If a deliberative mindset can reduce the influence of empathy, then I would expect that decision makers will be less motivated to engage in prosocial and charitable behaviors. Experiment 3 tested this prediction in a relatively more natural setting than the previous two experiments. Instead of making forced choices, participants in Experiment 3 were asked to donate to a real charitable cause after they thought they had completed the experiment.

Method

Participants and design. Fifty-seven undergraduates from the University of Toronto voluntarily participated in this experiment for $5; they were randomly assigned to the decision or the intuition condition.

Materials and procedure. Participants first engaged in an unrelated task as part of the cover story, to "earn" the $5 participation payment. Before making the payment, the experimenter gave participants a brief instruction packet and a printed web page with the mission statement of a charity organization, Child Family Health International. The instructions asked participants whether they wanted to donate any of the $5 they had just earned to this charity. In the decision condition, participants were simply asked how much they would decide to donate; in the intuition condition, they were asked how much they would feel like donating. The experimenter

emphasized that the total amount of donations collected would be sent directly to the Child Family Health International. Participants wrote down the amount of their donations and the researcher donated the aggregated amount to the charity after the study was completed. Because participants' donation choices were not completely driven by their volition but were also systematically influenced by the manipulation of the decision framing, the experimenter compensated them in a way that evened out their payment, that is, everyone was paid the full $5 for participation. This compensation scheme, however, should have no effect on the genuineness of participants' donation behavior.

Results

Participants donated over twice as much when they were asked how much they felt like donating (mean = $1.67, S.D. = 2.08) than when they were asked how much they decided to donate (mean = $0.70, S.D. = 1.32), $F(1, 55) = 4.5$, $p = .038$. In terms of frequencies, many more participants donated in the intuition condition: 59.3 percent versus 36.7 percent, $\chi^2 = 2.91$, $p = .088$. Thus a minor change in the description of a donation decision more than doubled the amount students contributed.

GENERAL DISCUSSION

Three lab experiments explored the potential dangers of deliberative decision making. Experiment 1 investigated the effects of deliberative thinking on deception by observing participants' behavior in a moral dilemma in which they could lie for their own benefit at the cost of others. Participants who were asked to solve a number of math problems before engaging in the moral dilemma lied more than those who inspected their intuitive reactions to several social stimuli. Thus mere deliberative calculation increased deception even though no participant was aware of such an influence. Experiment 2 replicated this finding using the same moral dilemma but a different induction of deliberative processing. About half of the participants were told that the moral dilemma investigates people's decision making, whereas the other half were told that it investigates intuitive reactions. The simple decision making framing led to more deception than the intuition framing. Finally, Experiment 3 showed that framing charitable donation as a decision reduced both the number of people who donated and the amount donated in comparison to framing donation as an intuitive reaction. Across these studies, deliberative decision making, whether it was induced through calculation or framing, led to inferior moral outcomes compared with intuition.

As Lakoff and Johnson (1980) pointed out, we think in and through our body, therefore our thinking is bound and shaped by our body, making our conceptual systems unconscious, metaphorical, and imaginative (Narvaez, 2010). Consistent with this notion, recent developments in moral psychology and neuroscience paint a complex picture of moral functioning in which reason and intuition interweave intricately. Moral evaluation is not only a process of reason but is also guided by metaphors of purity (Schnall et al., 2008; Zhong and

Liljenquist, 2006), informed by affect and emotions (Haidt, 2001), and facilitated by somatic markers such as heartbeat and sensorimotor input (e.g., Damasio, 1994). The influence of these intuitive dynamics, however, is largely unconscious and is not best captured by the calculative and analytic tools that we tend to use to make judgments and decisions (Tetlock et al., 2000). This raises the question of whether the long-standing rationalistic tradition in moral psychology should always dominate intuition and whether deliberative decision making can also lead to ethical failings. This paper is the first attempt to explore systematically how this emerging view of embodied morality may influence our thinking on ethical decision making.

This paper questions the traditional view of intuition in moral thinking. Intuition is typically seen as unexplainable, impulsive, and a source of bias that leads to erroneous decisions (Pillutla and Murnighan, 1996; Baron, 1998; Lieberman, 2000; Sanfey et al., 2003). In the above-mentioned footbridge dilemma in which individuals decide whether to push a person standing next to them off the footbridge and onto trolley tracks to save five people, people's emotional intuition often prevents them from choosing the option that maximizes lives saved, committing an "omission bias" (Ritov and Baron, 1999). Using similar scenarios (e.g., whether to kill two species of fish to save twenty species), Ritov and Baron (1999) showed that compared with moral intuitions, consequentialist-style calculations tend to yield outcomes that better serve public interest. Many organizational decisions share similar features. Layoffs, for instance, cause harm to those who are laid off but may be necessary for the long-term survival of a company. Managers who confront layoff decisions are torn between the emotional discomfort of letting someone go (Folger and Skarlicki, 1998) and doing the right thing for the company. Their calculated decision is not only morally sensible but also consistent with collective interest. Moral dilemmas as such, when there is a tension between different moral claims, often two morally right but incompatible course of actions, are the backdrop of Kohlberg's rationalist model (Monin, Pizarro, and Beer, 2007).

The current findings, however, are based on situations in which there are conflicts of interest and moral temptation (Monin, Pizarro, and Beer, 2007). Rather than making judgments between two morally right actions, individuals in the deception game decided whether to lie for their own benefit, knowing full well that lying is wrong (Experiment 1). In this situation, intuition seemed to produce better moral outcomes than deliberation. This is consistent with previous research showing that anger toward defectors in a social dilemma game motivated people to punish the defectors even though the punisher had to sacrifice his or her self-gain in doing so (Fehr and Gächter, 2002). Such altruistic punishment may seem irrational from an individual-interest standpoint but is critical in motivating and maintaining cooperation in general. Thus the seemingly impulsive emotion anger plays an important role in shaping human cooperation. These findings suggest that intuition and affect are not always the opposite of ethics and highlight the importance of context when

considering the moral consequences of deliberation and intuition. Although deliberation may be a better predictor of moral outcomes in hypothetical dilemmas defined by the tension between different moral claims (Monin, Pizarro, and Beer, 2007), intuition plays a critical role in deterring immoral behaviors and motivating moral behaviors in situations with conflicts of interest (Damasio, 1994). Given that ethical theorists have relied extensively on the former kind of dilemmas, future research on ethical decision making in situations with conflicts of interest should be particularly fruitful (Cain, Loewenstein, and Moore, 2005; Kish-Gephart, Harrison, and Treviño, 2010).

The finding that knowing a course of action is wrong is not enough to prevent individuals from engaging in the action unless the action also "feels" wrong may shed light on why codes of ethics have not been very successful in battling corporate scandals. For example, despite Enron's code of ethics calling for "conducting their business affairs in accordance with the highest ethical standards," employees of Enron frequently engaged in fraud, deception, misrepresentation, or omission of information. Perhaps in addition to using reason to define right and wrong, companies might also incorporate intuition and emotion into their ethics training. In fact, legal scholars have called for the use of shame sentencing in combating white-collar crimes (Kahan and Posner, 1999). Obviously, for a variety of reasons, shaming may not be suitable for organizational settings, but there may be subtler ways of bringing intuition and emotion into the moral socialization process. For instance, the Johnson and Johnson company's credo, instead of emphasizing responsibility to customers in general, states, "We believe our first responsibility is to the doctors, nurses and patients, to mothers and fathers and all others who use our products and services." By evoking the images of doctors and parents, conduct that is inconsistent with the credo is likely to induce strong emotional responses from employees, which may reduce the likelihood that they would actually engage in such conduct.

Presumably, the reason that deliberative decision making leads to more deception and less charitable donation than intuition in the experiments is because deliberative processing is partly incompatible with the embodied aspect of moral functioning. This potential danger of deliberative decision making is rooted in the interplay between deliberative and intuitive processing. Deliberation may overshadow the influence of intuitive and somatic forces and instead focus attention on plausible, obvious factors that may not be the true determinant of moral attitude. Experiment 2 investigated this possibility by probing the extent to which participants' choices were determined by monetary payoff or emotions as well as their emotional states after the choice. Consistent with the theory, deliberative decision making increased deception because it focused people's attention on monetary payoffs. Whereas participants in the intuitive condition who lied reported greater anxiety and distress afterwards than those who did not, the emotional states of those in the deliberative condition did not vary as a function of deception.

These findings resonate with the motivation crowding theory, which suggests that extrinsic motivation (often monetary incentive or punishment) may undermine intrinsic motivation (Frey and Oberholzer-Gee, 1997; Frey and Jegen, 2001). For example, Frey and Goette (1999) found that introducing financial rewards to volunteers significantly reduced, rather than increased, volunteering. Similarly, studying Israeli day care centers, Gneezy and Rustichini (2000) showed that imposing a monetary fine on belated pickup by parents increased the number of tardy parents. In both cases, behaviors may be initially driven by nonmonetary factors such as empathy and compassion in the case of volunteering and guilt of inconveniencing others in the case of belated pickup. The introduction of a monetary incentive, however, transforms the decision into a calculative one, reducing the impact of these motivational emotions. The current findings represent a potentially important extension of the motivation crowding theory by suggesting that the "crowding out" of intrinsic motivations may occur much more easily than we had thought, without needing to evoke changes in monetary incentives or punishments. Instead, simply activating a deliberative, calculative mindset may be sufficient to overshadow the influence of intrinsic motivations. This may explain why the mere exposure to money or related symbols can decrease compassionate helping (Vohs, Mead, and Goode, 2006) and increase deception (Gino and Pierce, 2009). It is possible that being reminded of money, a standard quantitative measure of value, automatically activates a calculative mindset that suppresses emotional influence and disinhibits unethical behaviors.

This should prompt us to think more carefully about the social consequences of economic education. Previous studies have found that economic training increases selfish behaviors (e.g., Marwell and Ames, 1981; Kahneman, Knetsch, and Thaler, 1986; Frank, 2004). For example, students with an economics background tended to be more competitive in economic games such as the prisoners' dilemma than those from other academic backgrounds (Frank, Gilovich, and Regan, 1993). These effects were typically explained by the content of economic training, which promotes the legitimacy and centrality of self-interest. The current findings suggest a different mechanism. Given that systematic, calculative processing characterizes economic thinking, economic training may cultivate a "cold-blooded," deliberative decision approach that narrows the role of intuitive and social considerations in ethical decision making. On the one hand, this means that the perils of economic training may go deeper than promoting competitiveness or selfish behavior and may include clear unethical violations such as deception, as demonstrated by the current studies; on the other hand, economics training may contribute to a broad culture that favors deliberation and reason over intuition (Lieberman, 2000), making it particularly difficult to assess the alarming shortcomings of economic education.

As with any research, the current exploration was limited by its methods and procedures. In both Experiments 1 and 2, participants volunteered to engage in one-shot, anonymous

interactions that accurately model deception but nevertheless lacked the context of typical interpersonal interactions. The effects of deliberation and intuition were examined under the constraint that the moral dilemmas were accepted as stated. Other than quitting the studies altogether or not getting involved to begin with, participants did not have the option of exiting the dilemma. In the real world, however, people usually have some degree of control over the environments to which they are exposed. For instance, individuals with strong ethical principles may choose to work in nonprofit or charitable organizations such that their intuition and affective reactions (e.g., empathy and compassion) are aligned with their moral reasoning. Likewise, a person walking down a road who sees a panhandler ahead may choose to walk on a different path to avoid the struggle between self-interest and sympathy (Pizarro and Bloom, 2003). In both situations, the tension between deliberation and intuition is not as extreme as found in the current studies and reasoning could actually shape intuition and affective reactions. Although controlled experiments with orthogonal manipulations of deliberation and intuition are necessary to examine unbiased causal effects of deliberative and intuitive decision making, future studies could investigate how deliberation and intuition inform and shape each other in more realistic settings.

Future research could also explore more elaborately the processes involved when people are asked to make deliberative or intuitive decisions. Experiment 2 examined post-choice emotional states and found that deliberative decision making seemed to be disconnected from common distress reactions to deception, but guilt did not vary as a function of deception in either condition. This lack of correlation between guilt and deception in both the deliberative and intuitive conditions may reflect the post-hoc nature of the emotional measures in the current experiment. Participants in both conditions were motivated to justify their behaviors and hence were reluctant to admit that they were guilty of deception. This calls for measuring emotional states during decision making. Short of finding better ways to measure emotional states explicitly without interfering with the measurement of behavioral outcomes, future studies could make use of implicit measures of emotions. For example, studies could track emotional variations during decision making implicitly by monitoring brain activities in the limbic system (e.g., amygdala), which has been implicated in emotional experience and learning. They could also track physiological symptoms of emotions such as skin conductance and heart rate (Dienstbier et al., 1975; Damasio, 1994). Tracking physiological symptoms during decision making should also allow future researchers to assess the relative importance of emotion and other somatic experiences in regulating moral behaviors. It is possible that emotion may be the best understood source of moral intuition (Haidt, 2001) but may not be the only or the most important somatic experience that could inform moral intuition and regulate moral behavior.

Further, it is equally important for future research to investigate what people think about when they make decisions.

Deliberative Decision Making

The current experiments used minimal manipulations of deliberative or intuitive decision making, either through preceding the moral dilemma with a simple calculation or emotion speculation task or by framing the dilemma as involving decision making or intuition. Although such subtle manipulations are well suited to exploring whether the processes through which people come to moral judgment and decisions can lead to predictable moral consequences, they are limited in informing us of what people actually think about when they make decisions deliberatively or intuitively. They also leave out the important question of whether the content of deliberation matters. Whereas probing people's thoughts during decision making would undoubtedly interfere with behavioral outcomes, future investigations may directly manipulate the content of deliberation. On the one hand, the content of deliberation may exacerbate the ethical dangers of deliberative decision making when people explicitly weigh the costs and benefits of behavioral alternatives. Bennis, Medin, and Bartels (2010) offered an in-depth analysis on the moral shortcomings of cost-benefit analyses. They argued that this normative approach might produce worse moral outcomes than applying moral rules and intuitions because our calculative mind is substantively limited in foreseeing future consequences and interpreting our internal values. On the other hand, the content of deliberation may induce, rather than subdue, moral emotions such as empathy when people are asked to think from others' perspectives. Taking the perspective of others is one important instance of human beings' cognitive flexibility, and the empathic emotion it induces is a powerful driver for helping behaviors (Batson et al., 1995). Thus a fuller understanding of the ethical consequences of deliberation requires not only contrasting a deliberative approach with an intuitive one but also examining the specific content of deliberation.

Based on recent advancements that stress the role of somatic input in shaping and regulating moral judgments and decisions, the current paper explored the potential ethical perils of a deliberative approach to decision making when it masks values expressed through feelings and intuitions. Overly relying on rationalistic and deliberative processes, it seems that our decision science may have turned its subject matter into a "decision bias": simply framing a choice as a decision can produce different moral outcomes than framing it as an intuition and suppress emotional reactions to moral transgressions. When evaluating the moral consequences of this bias, however, it is important to note that deliberative decision making does not always lead to negative outcomes. Rather, it depends on the nature of the situation as well as relevant intuitive influences. Thus the current paper highlights the urgency for a decision strategy that weighs both reason and intuition and stresses the importance of not only understanding the cognitive correlates of decision making but also constructing a somatic mapping of decision making. Researchers have gotten a head start on the cognitive front; future research that takes a holistic, somatic point of view should be particularly fruitful in increasing our understanding of the ethical consequences of decision strategies.

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APPENDIX

Deception Game Instructions in the Decision Condition

We are interested in how people make decisions in different social situations. Two possible monetary payments are available to you and your counterpart in the other room. The two payment options are:

Option A: $5 to you and $15 to the other student

Option B: $15 to you and $5 to the other student

The choice rests with the other student who will have to choose either option A or option B. The only information your counterpart will have is information sent by you in a message. That is, he or she will not know the monetary payments associated with option A and B, only you know that.

Which of the following two messages do you decide to send to your counterpart?

Message 1: "option A will earn you more money than option B."

Message 2: "option B will earn you more money than option A."

We will show the other student your message, and ask him or her to choose either A or B. Previous research has shown that 80% of them will follow what the message says.

To repeat, your counterpart's choice will determine the payments in the experiment. However, your counterpart will never know what sums were actually offered in the option not chosen (that is, he or she will never know whether your message was true or not). Moreover, he or she will never know the sums to be paid to you according to the different options.

We will pay the two of you according to the choice made by your counterpart.

I decide to send (click the box next to the message you decide to send):
☐ Message 1 ☐ Message 2

Deliberative Decision Making

Deception Game Instructions in the Intuition Condition

We are interested in people's intuitive reactions to different social situations. Two possible monetary payments are available to you and your counterpart in the experiment. The two payment options are:

Option A: $5 to you and $15 to the other student

Option B: $15 to you and $5 to the other student

The choice rests with the other student who will have to choose either option A or option B. The only information your counterpart will have is information sent by you in a message. That is, he or she will not know the monetary payments associated with option A and B, only you know that.

Which of the following two messages do you feel like sending to your counterpart?

Message 1: "option A will earn you more money than option B."

Message 2: "option B will earn you more money than option A."

We will show the other student your message, and ask him or her to choose either A or B. Previous research has shown that 80% of them will follow what the message says.

To repeat, your counterpart's choice will determine the payments in the experiment. However, your counterpart will never know what sums were actually offered in the option not chosen (that is, he or she will never know whether your message was true or not). Moreover, he or she will never know the sums to be paid to you according to the different options.

We will pay the two of you according to the choice made by your counterpart.

I feel like sending (click the box next to the message you feel like sending):
☐ Message 1 ☐ Message 2