

PREDICTING POTENTIAL PITFALLS: THE IMPACT OF CONSEQUENCE  
IDENTIFICATION ON ETHICAL DILEMMA ASSESSMENT

by

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## CONSEQUENCE IDENTIFICATION AND DILEMMA ASSESSMENT

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Predicting Potential Pitfalls: The Impact of Consequence  
Identification on Ethical Dilemma Assessment

In the 2011 book, *Thinking, Fast and Slow*, Daniel Kahneman describes two cognitive processes for making judgments and decisions. Fast thinking is the mental process that allows us to react quickly and intuitively to certain stimuli. For example, when we see an angry individual's face, we quickly and effortlessly know that this individual is agitated. We may even begin to expect certain behavior from this individual such as a verbal or physical attack. Fast thinking allows us to quickly assess the situation at hand. However, it isn't equipped to handle more complex situations requiring a counterpart, slow thinking. For example, envision a challenging multiplication or division problem. Fast thinking will allow an individual to recognize the black ink on the page as numbers and to determine that solving the problem will require multiplication or division. However, this fast form of thinking is likely not sufficient to reach a correct solution for the problem. This type of activity requires the use of slow thinking. When a novel or challenging problem is presented slow thinking allows us to solve it. These two forms of thinking are known as System 1 and System 2, referred to as fast and slow thinking respectively, and comprise what is known as the dual-process model (Kahneman, 2011).

Greene (2014) suggested the dual process model may be compared to the two types of modes of a digital camera. In this analogy, System 1 is similar to the group of automatic settings on the camera. Similar to the automatic options, it is optimized for efficiency at the expense of flexibility. System 1 operates automatically, without conscious effort. By relying on past experience, heuristics, and schemas, it is able to function with minimal expenditure of cognitive resources. Its automatic nature and low demand on resources allows it to operate consistently and constantly. Commonly known as "gut feelings" because of its large

emotional component, it filters through the constant stream of information and detail gathered from our environment and handles the resolution of simple problems. However, because of its high reliance on simple judgment strategies System 1 is vulnerable to the influence of emotion and biases which may interfere when solving complex problems (Kahneman, 2011).

System 2 is analogous to the manual mode of a digital camera. A camera's manual mode allows for the adjustment of focus, lighting, zoom, and various other settings independently but must be dealt with more slowly and deliberately (Greene, 2014). System 2 trades efficiency for flexibility, meaning that when System 1 is insufficient for us to solve complex problems, System 2 can do so by allocating attention and exerting cognitive effort as the situation demands. This form of conscious cognitive processing handles less intuitive situations, is less affected by biases and prejudices, and is associated with concentration and choice (Kahneman, 2011). System 2 has the capability of overcoming the strong emotional influence seen on System 1 with sufficient dedication of cognitive resources, allowing for a rational approach to problem solving (Stanovich, 1999). However, the ability to analyze and problem solve using this system comes at a cost. It requires a higher expenditure of cognitive resources than System 1, as well as a higher time allocation (Greene, 2014; Kahneman, 2011).

System 1 and System 2 interact to handle problems that arise on a daily basis. The relative influence of each system can change the way we approach life's decisions, actions, and problems, leading to different responses (Greene, 2007; Greene, 2014). The balance of emotion and systematic, utilitarian problem solving strategies is critical for reaching appropriate solutions. Complex problems that necessitate the analysis of variables require the

expenditure of conscious effort and the use of System 2 (Stanovich, 1999). This balance is especially important when facing dilemmas of an ethical nature (Kligyte, Connelly, Thiel, & Devenport, 2013).

Ethical dilemmas are convoluted and ill-defined problems which require the identification and analysis of a large range of variables (Mumford et al., 2008). Some have attempted to understand ethical dilemmas by breaking down the process of assessment into stages or steps. For instance, Rest's moral reasoning model (Rest, 1986; Rest, Bebeau, & Thoma, 1999) identifies four processes required for an appropriate solution to be identified. The moral reasoning model asserts that an individual must first identify the problem at hand as an ethical dilemma. They must become aware of how actions in response to the dilemma could potentially affect themselves and others. Without proper identification, an individual cannot successfully move on to the later stages of dilemma assessment and will likely fail to make an appropriate decision. In the second stage, judgment, an individual must consider their potential courses of action in response to the dilemma at hand. For each option they must consider the potential gains and consequences that could result from their choice. From this information they decide what the most correct action is, what is right and what is wrong. In the third stage intention to follow through on their chosen decision is formed. Challenges arise when less ethical choices offer competing motivations, making them appear as reasonable and beneficial options. An individual must place the ethicality of their choice above other priorities or potential gains. Finally, someone dealing with an ethical dilemma must take action to follow through on their intention (Rest, 1986; Rest, Bebeau, & Thoma, 1999).

In order for an individual to successfully assess an ethical dilemma and reach an ethical decision, they must apply the two types of cognition described by the dual-process model appropriately (Greene, 2007) as they navigate the steps of the Moral Reasoning Model. System 1 has been described as an individual's emotional reaction to the presentation of an ethical dilemma. When the problem arises and a violation of ethical or moral rules becomes apparent, an emotional reaction, without any form of conscious cognition, is experienced. This emotional reaction can often lead to reflexive action without conscious analysis of the problem. System 2, which allows for analytical thinking, can overcome emotional reactions but additional time and cognitive resources are necessary (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). System 2 allows for a systematic cost benefit analysis of the problem, which will provide additional information regarding the ethical problem under consideration. By exerting deliberate effort on the conscious processes of System 2, a utilitarian judgment strategy can be utilized to weigh options and consider a wider range of potential actions. This form of systematic analysis may lead to the selection of a solution different from one chosen through System 1 processing (Greene et al., 2001; Greene, Nystrom, Engell, Darley, & Cohen, 2004).

System 2 processing and the utilitarian judgment strategies it is associated with not only allow for the consideration of various courses of action but also support the consideration of the consequences that could potentially result from these choices. This process, which occurs during the second and third stages of Rest's stages of moral reasoning, is known as forecasting (Mumford et al., 2008; Mumford, Schultz, & Van Doorn, 2001). Specifically, forecasting is defined as making predictions regarding potential future outcomes based on the present situation (Pant & Starbuck, 1990). It requires the use of creative thought

processes to develop a variety of options in response to a dilemma and analysis of the relevant variables which may impact the decisions that are considered. This range of variables can include the potential causes which led to a dilemma, relevant rules and regulations as well as other social and cultural factors, environmental influences, and other individuals or groups involved directly or indirectly, as well as how each of these groups may be impacted by a given decision. The practicality of each plan is another critical part of the forecasting process and includes how potential problem solving strategies will be implemented (Kreitler, Dansereau, Barth, Repasky, & Miller, 2012; Kreitler, Dansereau, Barth, Repasky, & Travis 2012).

The importance of the forecasting process has been examined and demonstrated across multiple contexts. It has been shown to be an important cognitive process when facing complex and dynamic tasks (Mumford et al., 2001), such as those presented by an ethical dilemma (Stenmark, 2013). The usefulness of forecasting capabilities in processes such as creative problem solving (Osburn & Mumford, 2006) and planning (Marta, Leritz, & Mumford, 2005) lends additional credibility to the importance of this activity when facing ethical dilemmas. Ethical dilemmas frequently have extreme and far-reaching consequences, (Stenmark, Antes, Wang, Caughron, Thiel, & Mumford, 2010) making the process of forecasting particularly important for long-term decisions (Harkrider et al., 2012). Mumford, Schultz, and Osburn (2002) theorized that forecasting can provide benefits when facing ethical dilemmas in a number of ways. It allows an individual to develop stronger plans by first considering a wider range of responses and their potential outcomes. Proper utilization of forecasting strategies will also result in identifying more contingencies, restrictions, and resources operating in the given dilemma, making it easier to revise response plans should

problems be identified or predicted during implementation. Finally, the ability to predict potential consequences allows the creation of backup plans to address these potential problems if revision is insufficient or unsuccessful. This may also make it possible to take advantage of emergent opportunities (Mumford et al., 2002).

Stenmark (2013) demonstrated the importance of this process and how it positively influences ethical decision making ability. Participants took the role of a manager in a fictional electronics organization and were presented with various ethical dilemmas in the form of e-mails from fictional characters within the organization. Participants were asked to respond, proposing a solution to each dilemma. They were asked to describe potential actions that could be taken, to forecast possible consequences for each plan, and finally, to explain and justify their suggested course of action. Judges read and rated forecast quality based on three dimensions, forecast detail, complexity, and criticality. Judges also assessed the ethicality of suggested solutions based on the extent to which they considered the welfare of others, attendance to personal responsibilities, and adherence to social obligations. Based on the subsequent data analyses it was determined that improved forecasting quality is, in fact, positively associated with greater ethicality of proposed solutions.

Stenmark also demonstrated that successful forecasting allows an individual to predict potential harm from possible courses of action (Stenmark et al., 2010; Stenmark et al., 2011; Stenmark, 2013). This is, in part, due to the fact that forecasting allows for the remediation of undesirable results thereby avoiding potential harm (Stenmark et al., 2010). Harkrider et al. (2012) assert that utilizing forecasting to maximize the amount of information considered when facing a dilemma allows for stronger decision making abilities in the future. They hypothesized that this increased amount of information would support the

cognitive processes critical for reaching an appropriate decision. Their study found that improved forecasting led to an overall improved ability to consider the perspectives of others as well as greater decision ethicality. Stenmark et al. (2010) concluded that due to the many advantages that strong forecasting can provide to a decision maker facing an ethical dilemma, the improvement of this skill should be a focus during ethics training. Only a small number of such ethics training programs appear effective (Mumford, et al, 2008) while the effect of programs aimed at reducing research misconduct (Responsible Conduct of Research, RCR) in particular has been shown to be moderate at best (Antes et al., 2009; Antes et al., 2010). Watts, Medeiros, Mulhearn, Steele, Connelly, & Mumford (2016) performed a meta-analysis of these programs, and found support for the notion that instruction over the process of forecasting is extremely valuable for producing durable increases in decision ethicality. This meta-analysis included 66 empirical studies, 106 ethics courses, and a total 10,069 training participants. As a part of their quantitative analysis the authors examined a number of moderators on instructional effectiveness, including instructional content. Specific process-based content was separated in twelve different topic areas. Of these areas, the three with the strongest, beneficial effects were emotional analysis ( $d = .76$ ), forecasting ( $d = .71$ ), and analysis of consequences ( $d = .68$ ). This further demonstrates the importance of both forecasting and consequence identification (Watts, Medeiros, Mulhearn, Steele, Connelly, & Mumford, 2016). As a result, potentially negative influences on forecasting ability and methods through which forecasting can be improved should be considered when attempting to understand external influences on ethical dilemma assessment.

One way to improve forecasting is to list possible consequences of an action. It has been hypothesized that the larger the range of possible consequences considered the better

the forecast and the more ethical the choice (Krietler & Krietler, 1987; Stenmark, 2013).

Stenmark (2013) assessed how forecasting would impact the ethicality of decisions. Judges examined the relevancy of individual consequences identified by participants, classifying each as self-oriented or other-oriented, and rated the extent to which participants were able to distinguish the most critical consequences of each scenario. Analyses showed that the identification of consequences for others, but not for one's self, were associated with greater forecasting quality and decision ethicality. This suggests that improving the ability to identify potential negative outcomes for others could lead to improved decision making ability in response to ethical dilemmas and potentially serve as an effective area to target for ethics training.

Although the identification of critical consequences for others is found to improve decision ethicality, considering a larger number of consequences may not be effective. Research has demonstrated that listing a wider range of consequences does not necessarily lead to improved decision ethicality (Stenmark et al., 2010; Stenmark et al., 2011) and in some cases has even been associated with lowered ethicality (Stenmark, 2013). These findings indicate that focusing on a small amount of key information when considering consequences may be a more effective strategy than listing as many as possible. The identification of these critical consequences will require the use of utilitarian judgment strategies and cost-benefit analyses associated with System 2 of the dual-process model (Greene, 2014).

Effective forecasting, dependent on System 2, can also be negatively impacted when the ability to complete the process is impaired by the overexertion of cognitive systems (Watts, 2015). The induction of cognitive load has been found to produce increased delays in

the System 2 processes required for cost-benefit analysis (Greene, Morelli, Lowenberg, Nystrom, & Cohen, 2008). This delay results in an increased responsiveness to the emotional reaction created by ethical dilemmas. A disruption in the balance of mental processes required for effective ethical decision making caused by cognitive load leads to decreased use of utilitarian judgment strategies (Conway & Gawronski, 2013) and may cause an increased reliance on System 1 as a function of System 2's suppression. Greene et al.'s (2008) research supports the findings of our research (Watts, 2015), indicating that cognitive load interferes with appropriate forecasting.

Cognitive load refers to the total amount of capacity used in working memory (Sweller, 1988). Heavy cognitive load is thought to increase memory errors and impede problem-solving (Chandler & Sweller, 1992). Limited processing capacity is a well known characteristic of human cognition (Sweller, 1988), so it stands to reason that attempting to process too much information simultaneously leads to overload. Dzubak (2008) suggested that heavy cognitive load may be induced through multitasking (i.e., engagement in individual and discrete tasks performed in succession). In fact, research shows that completing multiple cognitive processes simultaneously is quite difficult, even if those tasks are relatively straightforward and simple. Attempting to respond to multiple stimuli simultaneously leads to lowered reaction time and reduced performance even if those stimuli act on different senses (Pashler, 1994; Pashler, 2000). Multitasking has been found to induce detrimental performance effects across multiple other contexts as well. Individuals under heavy cognitive load have demonstrated difficulty considering and accounting for external factors which may influence the decision and behavior of others (Fornesca, Brauer, Moisuc, & Nugier, 2013). These individuals display stronger negative emotional reaction to social

norm transgressions and are more likely to make negative attributions to an individual violating social norms. This may impact the way an individual under heavy cognitive load assesses the ethical dilemma. Maehara and Saito (2013) demonstrated that it can lead to over attribution of knowledge when predicting the actions of another. More specifically, those under cognitive load were more likely to believe that an individual presented with a choice would know more, or have more information, than they actually did.

In addition to affecting the attribution of knowledge, heavy cognitive load has been shown to impair memory performance. Previous studies indicate that performance on memory related tasks can be improved by reducing the amount of cognitive load (Vredeveldt, Hitch, & Baddeley, 2011). During periods of heavy cognitive load, individuals displayed a decrement in their ability to remember details and a higher frequency of false memories regarding information they were asked to retain. This may be due to the fact that attempting to perform multiple tasks simultaneously leads to disruption in the encoding process of memory (Naveh-Benjamin, Craik, Perretta, & Tonev, 2000), which may lead to problems when facing ethical dilemmas (Weaver & Stewart, 2012).

Considering other possible impacts to judgment abilities Edwards, Snyder, Allen, Makinson, and Hamby (2012) demonstrated that those placed under heavy cognitive load displayed difficulty utilizing information to inform behavioral choices. Indeed, heavy cognitive load can ultimately lead to the utilization of simpler, less-demanding judgment strategies, therefore impairing judgment abilities when more complex strategies would be most effective (Hoffmann, von Helversen, & Rieskamp, 2013). The ability to utilize these complex strategies, often associated with System 2 of the dual-process model, can be impaired through the induction of cognitive load. Greene et al. (2008) demonstrated that

when heavy cognitive load is induced it can lead to increased delay in the use of utilitarian judgment strategies, but does not impact non-utilitarian strategies. They suggest that by selectively interfering with these utilitarian judgment strategies and conscious cognitions vital for successful ethical decision making (Greene et al., 2008), and impairing System 2, System 1's influence on decision making is made stronger.

Previous work (Watts, 2015) demonstrated that heavy cognitive load induced through utilization of a memorization task can negatively impact forecasting under some conditions. When presented with a moderately challenging memorization task (memorizing four letters), participants displayed reduced predictions of harm in response to the unethical action of character (i.e., protagonist) in a fictional ethical dilemma. However, this effect was not seen when the difficulty of the memorization task was increased to memorizing six letters. It is possible that the difficulty of the six letter sequence task was simply too high because performance on this memorization task was markedly lower than in other conditions. With this in mind, it is reasonable to think that participants may not experience improved performance from deliberate consequence identification when given a moderately challenging, simultaneous task.

The theoretical connections between ethical dilemma assessment, forecasting, consequences identification, and cognitive load represent a relatively unexplored area of research. Does consequence identification improve predictions of harm when assessing the dilemma of another individual? Can this strategy be implemented as a form of training that improves future assessment ability? Does increasing the number of consequences identified beyond an optimized amount lead to reduced predictions of harm as shown in previous research? How might these effects relate to cognitive load? The experiments presented here

will attempt to answer several questions regarding the relationships between these variables and fill the niche left vacant by previous research. By examining how these variables are connected to the assessment of dilemmas faced by others, this research will extend the findings of Stenmark (2013) to additional contexts outside the laboratory. Additionally, these studies will examine how consequence identification can impact other stages in the ethical dilemma assessment process, including the identification of the dilemma as being ethical in nature and predicting how others might view the response.

### **Experiment 1**

Previously published research (Stenmark, 2013) has suggested that the identification of potential consequences to an action is a critical component of ethical decision making. Stenmark (2013) demonstrated that stating possible consequences for the self and others is associated with improved forecasting quality which, in turn, is associated with increased decision ethicality. This experiment attempted to expand on these findings and assess whether the identification of possible consequences for the protagonist and others in ethical dilemmas would affect the amount of harm predicted by experimental participants. Specifically, I hypothesized that the deliberate identification of consequences would result in participants predicting more harm as the result of another individual's unethical action. A second hypothesis focused on the possible effects consequence identification might have on other aspects of ethical decision making. In her study evaluating first person dilemmas, Stenmark et al. (2011) found that the identification of potential consequences was associated with improved ethical decision making. This lead to the question; does consequence identification impact a participant's ability to identify ethical dilemmas and judge specific acts by the protagonist as unethical? I hypothesized that participants who underwent a

consequence identification procedure would be less likely to agree with unethical actions taken by others. Additionally, based on previous work which found that ethical judgments were a significant predictor of ethical intentions, I hypothesized that those who underwent consequence identification would report being less likely to take similar unethical actions.

While consequence identification has been found to lead to greater decision ethicality (Stenmark et al., 2011), investigations of these have also found that this effect was not present if the number of consequences generated was very large (Stenmark, 2013). The authors suggested considering too much information might interfere with decision-making. In contrast, Mumford, Schultz, and Osburn (2002) suggested considering a wide range of consequences may be beneficial. The final aim of this experiment was to investigate whether examining a large number of consequences would enhance, have no effect, or impair ethical decision-making. I hypothesized that, consistent with previous research, identifying a larger number of consequences would not increase predicted harm.

## **Method**

### **Participants**

One hundred and fifty-five college undergraduates enrolled in courses in the department of psychology were recruited using an online participant pool. Eighteen participants were removed from final analyses due to a failure to follow instructions or for submitting an incomplete survey. Final analyses were performed on the remaining one hundred and thirty-seven participants. This participant pool included thirty-six (26.3%) males and one hundred and one (73.7%) females with an age ranging from 17 to 38 ( $M = 19.74$ ,  $SD = 2.26$ ). Ethnicities of participants were 78.3% Caucasian, 3.6% African American, 7.2% Hispanic, 5.8% Asian, and 4.3% identifying as Other. Informed consent was obtained prior to

participation in any experiment activities. Participants were given extra credit points for a psychology class of their choice as compensation for their time.

### **Design**

This experiment consisted of a four condition (control vs. eight detail vs. four consequence vs. eight consequence) between-subjects design.

### **Materials**

Experiment 1 used the digital survey system Qualtrics for the administration of surveys and collection of data. All experiment sessions were completed in an identical laboratory setting. Participants used laboratory computers to read and respond to three scenarios. These scenarios each included an ethical dilemma, related to research or workplace protocol, faced by a fictional character (i.e., protagonist) and the protagonist's chosen action in response to this dilemma. All given actions were reasonable, though unethical. Participant responses to these decisions were recorded on the Perceived Moral Intensity Scales (PMIS) adapted from Singhapakdi et al. (1996) and Frey (2000). This measure asked participants to indicate their level of agreement with nine statements regarding the unethical actions taken. Responses were recorded on a 7-point Likert-type scale (1 = Strongly disagree; 7 = Strongly agree). Item 1 (i.e., "The Subject's situation involves an ethical dilemma") assessed ethical dilemma identification. Item 2 (i.e., "The Subject should not do the proposed action") assessed ethical judgments regarding the unethical actions. Item 3 (i.e., "If I were the Subject, I would make the same decision") assessed ethical intentions, the participants' willingness to engage in the same action. Scores on this item were reversed so that higher scores indicate less willingness to take the same action. Items 4, 6, 7, and 9 (e.g., "The overall harm (if any) done as a result of the Subject's Action would be very

small”) formed a subscale ( $\alpha = .86$ ) measuring predictions of harm. Scores on this scale were reversed so that higher scores indicate greater agreement that harm will occur. Items 5 and 8 (e.g., “Most people would agree that the Subject’s action is wrong”) formed a subscale measuring social pressure. These survey materials were the same for each condition. The conditions differed only in the additional task presented between the dilemma and the PMIS.

### **Procedure**

Random assignment was used to allocate participants to each condition (control,  $n = 39$ ; four consequence,  $n = 35$ ; eight consequence,  $n = 32$ ; eight detail,  $n = 31$ ). They began by reading the consent document and completing the demographics questionnaire. Next, participants were presented with one randomly selected ethical dilemma out of the three possible scenarios. Each scenario was presented for a minimum of one minute to ensure that the participants read it thoroughly before proceeding to the next step. After participants read the first ethical dilemma scenario the consequence identification section was presented. Participants randomly assigned to either the four consequence or eight consequence conditions were asked to identify the requisite number of possible consequences that could result from the unethical action taken by the protagonist in the dilemma scenario. They were then presented with the PMIS and asked to respond to all nine items. The control condition was not asked to identify any possible consequences but instead simply responded to the scenarios on the PMIS immediately after reading them. The eight detail condition followed a similar procedure to the consequence identification conditions but was instead asked to recall eight details they could remember from the scenario previously read. This task was designed to be similar in time requirement to the experimental conditions without involving the identification of potential consequences. Each condition completed this same procedure for

an additional two scenarios, totaling three. The order of scenario presentation was counterbalanced. Once participants read and responded to all three dilemma scenarios they were debriefed about the nature of the experiment and dismissed.

### Results

A one-way analysis of variance (ANOVA) assessed predictions of harm and found that condition had a significant effect on this composite score,  $F(3, 133) = 3.63, p < .05, \eta^2_p = 0.08$ . Post hoc comparisons using the Tukey's HSD test found that individuals in the eight consequence (8C) condition ( $M = 4.78, SD = 0.75$ ) predicted significantly more harm than the control (C) condition ( $M = 4.21, SD = 0.66$ ) as a result of the unethical actions taken in the scenarios. Individuals in the four consequence (4C) condition ( $M = 4.68, SD = 0.94$ ) also predicted a marginally higher amount of harm as compared to the control condition. The eight detail (8D) condition ( $M = 4.53, SD = 0.75$ ) was not significantly different from any other condition. This confirmed the first hypothesis, that deliberate identification of consequences will result in greater predicted harm for others when compared to the responses of participants in the control condition. However, the 4C and 8C conditions were not significantly different, supporting the hypothesis that predicting a larger number of consequences will not lead to significant increases in predictions of harm. These group mean differences are presented in Figure 1.

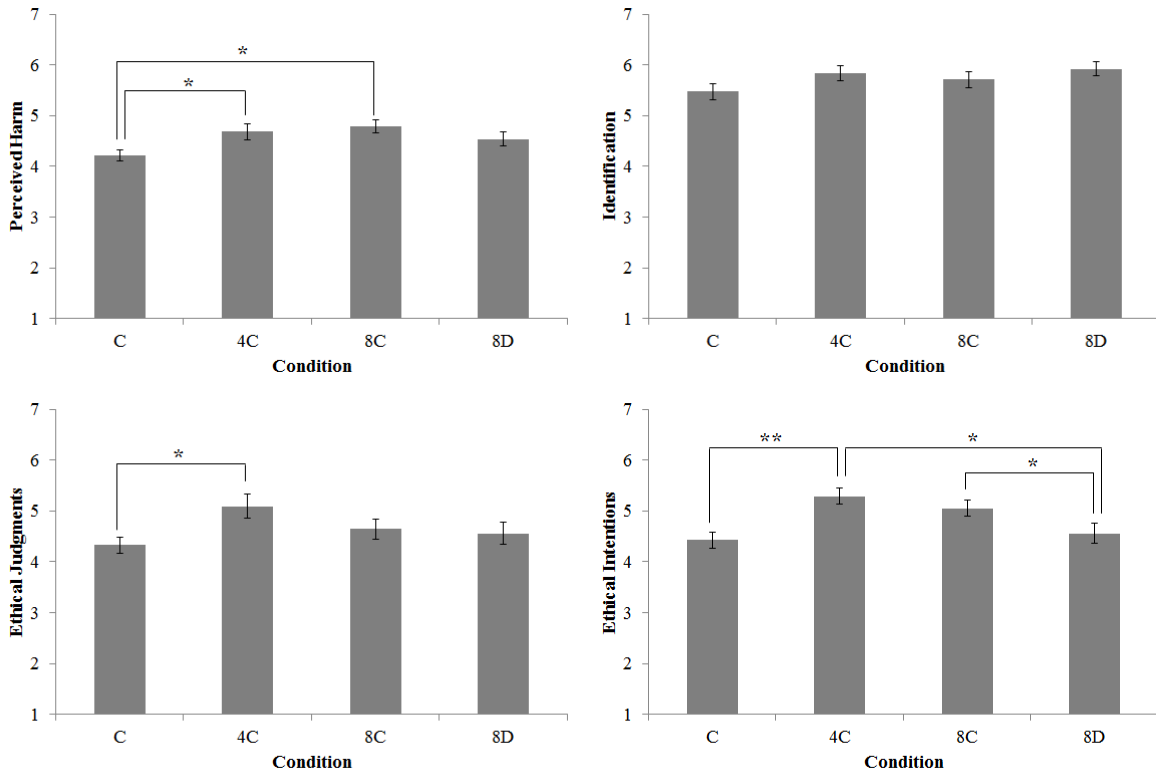
A one-way ANOVA was also used to examine differences on dilemma identification. No significant difference was observed based on condition,  $F(3, 133) = 1.72, p = .17, \eta^2_p = 0.14$ . These group means are presented in Figure 1.

Similar tests were run to examine differences on ethical judgments. A significant effect of condition was observed,  $F(3, 133) = 2.61, p = .05, \eta^2_p = 0.06$ . Those in the 4C

condition ( $M = 5.09$ ,  $SD = 1.39$ ) reported that the subject's action was wrong with significantly more conviction than the C condition ( $M = 4.33$ ,  $SD = 0.98$ ). No other significant differences were observed for either the 8C ( $M = 4.64$ ,  $SD = 1.07$ ) or 8D ( $M = 4.56$ ,  $SD = 1.24$ ) conditions. This works to corroborate previous literature which found that predicting fewer consequences during a consequence identification procedure can lead to better results (Stenmark, et al. 2011) and supports the second hypothesis. These group mean differences are presented in Figure 1.

Finally, a one-way ANOVA was run to examine differences on ethical intentions. A significant effect was observed for condition,  $F(3, 133) = 5.93$ ,  $p \leq .001$ ,  $\eta^2_p = 0.12$ . Those in the 4C ( $M = 5.29$ ,  $SD = 0.93$ ) reported that they would not take the same action as the subject with significantly more conviction than those in both the C condition ( $M = 4.43$ ,  $SD = 1.00$ ) and the 8D condition ( $M = 4.56$ ,  $SD = 1.14$ ). Those in the 8C condition ( $M = 5.05$ ,  $SD = 0.89$ ) also reported that they would not take the same action as the subject with more conviction as compared to the control condition. These two findings support the third hypothesis. These group mean differences are presented in Figure 1.

**Experiment 1 Dependent Outcomes**



*Figure 1.* Group means ( $\pm$  SE) for Experiment 1 on each of the four dependent measures with significant differences between groups denoted by labeled brackets. On perceived harm, groups 4C and 8C predict significantly more harm than C. On dilemma identification, no significant differences were observed. The 4C group displays significantly stronger conviction that unethical actions are wrong compared to C when making ethical judgments. On ethical intentions, the 4C group displays significantly less willingness to take unethical actions compared to both C and 8D. The 8C group displays significantly less willingness to take unethical actions compared to 8D. \*  $p \leq .05$  \*\*  $p \leq .01$  \*\*\*  $p \leq .001$

## Discussion

The results from Study 1 showed that deliberate consequence identification appears to have an effect on multiple aspects of ethical dilemma assessment. This supports the finding of previous research (Stenmark, 2013), although a distinguishing factor between past research and the information presented here is the focus on the actions of others. First, a significant effect was observed on the measure of perceived harm. Both experimental conditions scored significantly higher than the true control. This indicates that undergoing the consequence identification procedure resulted in higher predictions of harm following unethical actions. However, the time control condition, the eight detail group, was not significantly different from the experimental conditions. Study 1 also made comparisons between conditions on measures of ethical dilemma identification, judgment, and intentions. Again, the experimental conditions demonstrated differences as compared to the base control on both judgment and intentions, while the eight detail control did not often differ significantly. This seems to align with the previous findings of Stenmark et al. (2011) as well as the hypothesis that the consequence identification procedure would lead to significant differences on these items. No differences were observed on dilemma identification, as means for all groups approached the scale ceiling. All groups identified the dilemmas as ethical in nature, indicating that this may have been an easier task regardless of condition.

Across all significant measures the eight detail group consistently falls between the true control and experimental conditions. These findings raise questions regarding the use of this second control. However, the lack of results in this condition may be related to an increased level of focused attention given to the task by these participants. Due to this, it is possible that this task is not serving as a control group as was originally intended. The more

generic task may be producing some benefit as compared to the true control, though it was never significantly different.

The final hypothesis proposed in Study 1 was that those in the eight consequence condition would not perform differently on any of the dilemma rating tasks than those in the four consequence condition as was found in previous research (Stenmark et al., 2011). Results showed some measure of support for this hypothesis, as the two experimental conditions were not significantly different on any of the examined measures. Both those who identified four and eight consequences were significantly different from the control on the measure of harm prediction, indicating that this measure does not serve as adequate support to claim that identifying more consequences is beneficial. Additionally, the four consequence group differed significantly from the control on the measure of judgment while the eight consequence group did not. This provides a small amount of support for the work of Stenmark et al. (2011) which argues that identifying too many consequences can be detrimental. In this case, the two consequence experimental conditions did not differ, but the four consequence group procedure seems to have been more beneficial when examining ethical judgments. Finally, the four consequence group differed from both controls on the measure of ethical intentions where the eight consequence group only differed from the true control. Taken together, this seems to indicate that identifying a lower number of consequences produces more significant results as compared to the control, in the form of harsher judgments on those who took unethical actions and less likelihood to do the same.

## **Experiment 2**

Stenmark et al. (2010) and others (Harkrider et al., 2012) concluded that the development of forecasting skills should be a focus in ethics training because it is an

essential component of successfully navigating complex decision-making. This is corroborated by meta-analysis of ethical training programs, which demonstrated the criticality of both forecasting and consequence identification (Watts et al., 2016). Experiment 2 attempted to replicate the findings of Study 1 and identify the usefulness of deliberate consequence identification as a training tool by evaluating whether it has persistent effects on predicting harm. Specifically, it attempted to determine if repeated consequence identification on scenarios could impact the assessment of future scenarios. I hypothesized that the identification of consequences on the first two scenarios (i.e., training) would continue to have an effect on the assessment of a future scenarios in the absence of consequence identification (i.e., testing), that a higher prediction of harm would be seen during test sessions immediately after and one week following training.

## **Method**

### **Participants**

One hundred and fifty-seven undergraduates enrolled in courses in the department of psychology were recruited using an online participant pool. Twenty-three participants were excluded from final analyses for a failure to complete both study sessions. Additionally, seven participants were excluded for failure to follow directions or for submitting an incomplete survey. The remaining participant pool of one hundred and twenty-seven college undergraduates included seventeen (13.4%) males and one hundred and ten (86.6%) females, with an age ranging from 17 to 43 ( $M = 19.17$ ,  $SD = 2.58$ ). Ethnicities of participants were 78.7% Caucasian, 4.7% African American, 10.2% Hispanic, 2.4% Asian, and 3.9% identifying as Other. Informed consent was obtained prior to participation in any experiment

activities. Participants were given extra credit points for a psychology class of their choice as compensation for their time.

### **Design**

This experiment consisted of a four condition (control vs. eight detail vs. four consequence vs. eight consequence) between-subjects design.

### **Materials**

Experiment 2 used the digital survey system Qualtrics for the administration of surveys and collection of data. All experiment sessions were completed in an identical laboratory setting. Participants used laboratory computers to read and respond to three scenarios. These scenarios each included an ethical dilemma, related to research or workplace protocol, faced by a fictional character (i.e., protagonist) and the protagonist's chosen action in response to this dilemma. All given actions were reasonable, though unethical. Participant responses to these decisions were recorded on the Perceived Moral Intensity Scales (PMIS) adapted from Singhapakdi et al. (1996) and Frey (2000). This measure asked participants to indicate their level of agreement with nine statements regarding the unethical actions taken. Responses were recorded on a 7-point Likert-type scale (1 = Strongly disagree; 7 = Strongly agree). Item 1 (i.e., "The Subject's situation involves an ethical dilemma") assessed ethical dilemma identification. Item 2 (i.e., "The Subject should not do the proposed action") assessed ethical judgments regarding the unethical actions. Item 3 (i.e., "If I were the Subject, I would make the same decision") assessed ethical intentions, the participants' willingness to engage in the same action. Scores on this item were reversed so that higher scores indicate less willingness to take the same action. Items 4, 6, 7, and 9 (e.g., "The overall harm (if any) done as a result of the Subject's Action would be very

small”) formed a subscale ( $\alpha = .77$ ) measuring predictions of harm. Scores on this scale were reversed so that higher scores indicate greater agreement that harm will occur. Items 5 and 8 (e.g., “Most people would agree that the Subject’s action is wrong”) formed a subscale measuring social pressure. These survey materials were the same for each condition. The conditions differed only in the additional task presented between the dilemma and the PMIS.

### **Procedure**

Random assignment was used to assign participants to each condition (control,  $n = 33$ ; four consequence,  $n = 32$ ; eight consequence,  $n = 29$ ; eight detail,  $n = 33$ ). In Session 1, the participants began by reading the consent document and completing the demographics questionnaire. Next, participants were presented with one randomly selected ethical dilemma out of three possible scenarios. Each scenario was presented for a minimum of one minute to ensure that the participants read it thoroughly before proceeding to the next step. Participants randomly assigned to one of the experimental conditions were then asked to identify either four or eight possible consequences that could result from the action taken by the protagonist in the written dilemma scenario (i.e., training). Next, the participants were presented with the PMIS and asked to rate their agreement with the nine statements regarding the unethical action taken by the scenario protagonist in response to the dilemma. The control condition was not asked to identify any possible consequences but instead simply responded to the scenarios on the PMIS immediately after reading them. The eight detail condition followed a similar procedure to the consequence identification conditions but was instead asked to recall eight details they could remember from the scenario previously read. This task was designed to be similar in time requirement to the experimental conditions without involving the identification of potential consequences. This procedure was repeated for a second scenario,

completing training. A third and final ethical dilemma scenario was presented in this first session; however, no participants were asked to generate potential consequences or recall details (i.e., testing). All groups read the third scenario and proceeded immediately to the response section. Participants were then asked to return one week after the first session. During Session 2 one additional scenario was presented to all participants. No group was asked to identify potential consequences or recall details on the final scenario during the second testing session. The order of scenario presentation in Session 1 was counterbalanced. Session 2 used the same scenario for all participants. Once all four dilemma scenarios had been read and responses collected using the PMIS participants were debriefed about the nature of the experiment and dismissed.

### Results

A one-way ANOVA was run on predictions of harm in attempt to replicate the findings of Study 1. Analyses found that condition had no significant effect on this dependent measures,  $F(3, 123) = 1.11, p > .05, \eta^2_P = 0.03$ . This fails to fully replicate the findings from Study 1 although both consequence identification conditions trended in the expected direction. These group means are presented in Figure 2.

A one-way ANOVA was also used to examine differences on dilemma identification. No significant difference was observed based on condition,  $F(3, 123) = 2.48, p = .07, \eta^2_P = 0.06$ . These group means are presented in Figure 2.

A one-way ANOVA was run on ethical judgments and illustrated that, similar to Study 1, consequence identification condition had a significant effect on this measure,  $F(3, 123) = 6.60, p < .001, \eta^2_P = 0.14$ . Post hoc comparisons using Tukey's HSD test found that those in the 4C condition ( $M = 4.69, SD = 0.90$ ) judged the Subjects' actions as wrong with

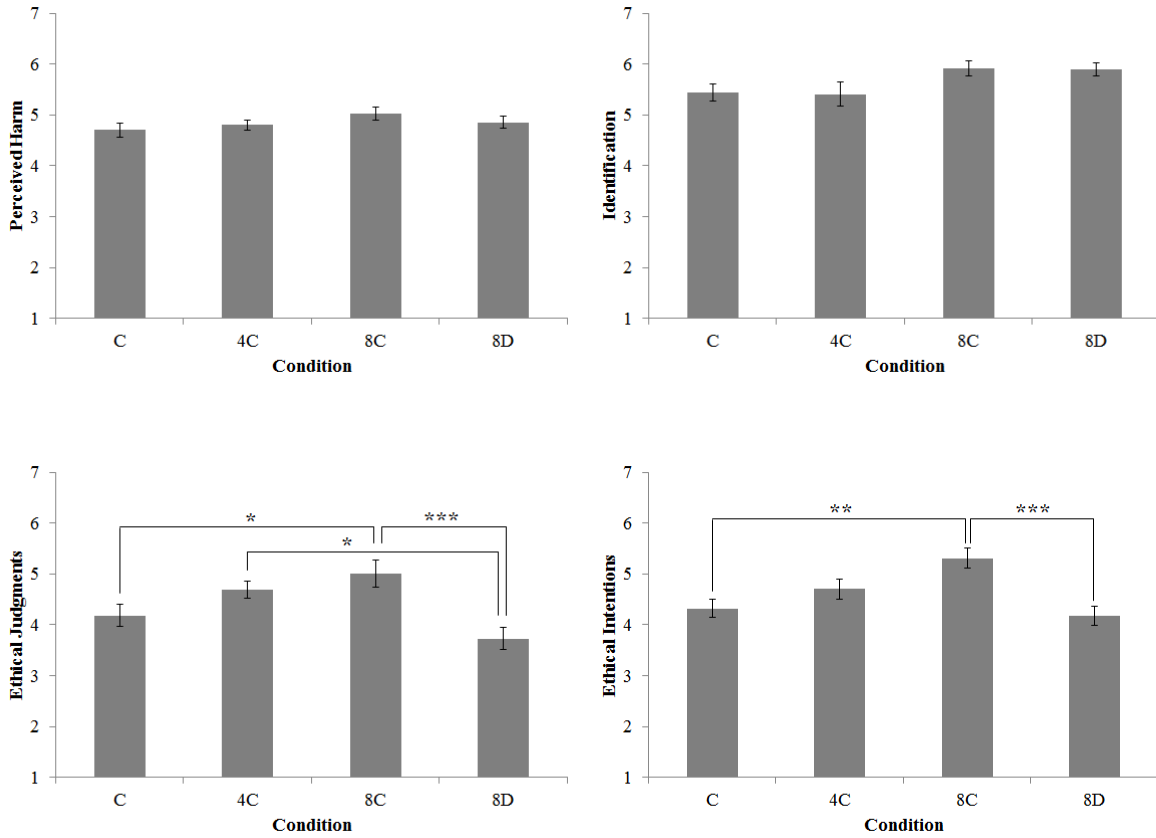
significantly more conviction as compared to the 8D condition ( $M = 3.73$ ,  $SD = 1.21$ ).

Additionally, those in the 8C condition ( $M = 5.00$ ,  $SD = 1.47$ ) judged the actions as wrong with significantly greater conviction as compared to both the C condition ( $M = 4.18$ ,  $SD = 1.24$ ) and 8D condition. These group mean differences are presented in Figure 2.

Finally, a one-way ANOVA was run on ethical intentions and found, again similar to Study 1, consequence identification condition had a similar effect on this measure,  $F(3, 123) = 6.78$ ,  $p < .001$ ,  $\eta^2_p = 0.14$ . Post hoc comparisons using Tukey's HSD test found that those in the 8C condition ( $M = 2.69$ ,  $SD = 1.04$ ) reported that they would not take the same actions as the Subjects with significantly more conviction as compared to both the C ( $M = 3.68$ ,  $SD = 1.04$ ) and 8D ( $M = 3.83$ ,  $SD = 1.08$ ) conditions. No significant effect was found for the 4C condition ( $M = 3.30$ ,  $SD = 1.15$ ), though it trended in the expected direction. These group mean differences are presented in Figure 2.

Similar analyses were run for the first and second testing phases, as well as comparing the training and test phases, though no significant effect of condition was found on any dependent measure. No group differences existed during either testing phase.

**Experiment 2 Dependent Outcomes**



*Figure 2.* Group means ( $\pm$  SE) for Experiment 2 on each of the four dependent measures with significant differences between groups denoted by labeled brackets. On perceived harm and dilemma identification, no significant differences were observed. The 8C group displays significantly stronger conviction that unethical actions are wrong compared to C and 8D when making ethical judgments. The 4C group displays significantly stronger conviction that unethical actions are wrong compared to the 8D group. On ethical intentions, the 8C group displays significantly less willingness to take unethical actions compared to both C and 8D. Dependent measures during testing showed no significant effect of consequence identification and are not depicted. \*  $p \leq .05$  \*\*  $p \leq .01$  \*\*\*  $p \leq .001$

## Discussion

Study 2 attempted to both replicate the results of Study 1 and expand those findings by examining the potential of consequence identification as a training method. The pattern of results show similarities and differences when compared to Study 1. First, responses on the first two dilemmas were examined as a replication. Results demonstrated similar findings on both ethical judgments and intentions. Consequence identification proved an effective tool for increasing participant's conviction that the unethical actions of others were wrong and that they would be unlikely to take the same course of action. This aligns with the findings of Stenmark (2013), which demonstrated how improved forecasting regarding possible consequences can lead to greater decision ethicality. Compared to Study 1, however, the overall effectiveness of each experimental condition on these measures was seemingly reversed, with the 8C condition differing from both control groups. Similar to Study 1, there were no significant differences between the two experimental conditions at any point. However, while the four consequence condition trended in the expected direction as compared to the control groups, it did not reach significance. These findings seem to contrast those of Stenmark (2013) who demonstrated that identifying a larger number of consequences can be detrimental to decision ethicality.

Though the findings on ethical judgments and intentions were replicated, those on predictions of harm were not. As compared to Study 1, the control group predicted more harm in Study 2. This change contributed greatly to the lack of significant results. This may be due to a difference in sample for Study 2 compared to Study 1. In Study 2, participants were required to return to the lab a week after their initial training/testing session for the second testing session. As such, only those who returned were included in final analysis.

Twenty-three subjects were dropped from the final analysis for failure to return. This could result in a sample that demonstrates a higher level of responsibility compared to their average peer, leading to reduced effectiveness of consequence identification manipulations. Previous research suggests that individual differences in time perspective, either as present-oriented or future-oriented, can lead to significant differences in meeting time commitments of multi-session studies. Those participants who were future-oriented were more likely to return and complete their obligation (Harber, Zimbardo, & Boyd, 2003). It is possible, then, that this study suffered from selection bias due to a loss of more present-oriented students. Future orientation is characterized by a tendency to relate immediate choices to more distant outcomes while a present orientation is associated with reduced interest in or concern for future consequences (Lewin, 1948). This would help to account for the observation that the mean perceived harm increased in every condition when compared to Study 1. Additionally, this may help to account for the increased effectiveness of the 8C procedure as compared to the 4C procedure in Study 2. The decisions of future-oriented individuals are, generally, more influenced by mental representations of potential consequences as well as concerns for losses and gains (Strathman, Gleicher, Boninger, & Edwards, 1994). This predisposition for the consideration of consequences may be contributing to the relatively lower effectiveness of the 4C procedure. If future-oriented individuals are more likely to consider consequences without instruction to do so, they may require the more extensive 8C procedure to demonstrate differences from controls. The 4C procedure may be redundant due to their natural predisposition for consequence identification.

The second major purpose of Study 2 was to examine if consequence identification could be used as a training method, and effects could be replicated on trials where those who

had used this strategy in the past did not undergo the procedure again. Examinations of these testing trials, both immediately after training trials and a week later, did not produce any significant results on any dependent measure. This seems to indicate that while the consequence identification procedure may be effective it is not supported as useful training method in this study, at least in the short term. It is important to note, only two training instances occurred as a part of this study. More training may be necessary for effects to carry over in time. Ethics training programs that offer more opportunities for practice show significantly larger effects than programs with fewer sessions (Watts et al., 2016). Previous examinations of ethics training which produced positive effects on ethical judgments have included multiple sessions across a period of months (Jones, 2009) to years (Mumford et al., 2008). Additionally, participants were given no additional instruction regarding the use of this procedure in the testing trials. This study's purpose was to understand if the use of the consequence identification procedure in two trials would produce effects in the future without prompting its continued use. In essence, it attempted to understand if it was possible to change the way participant's assessed future dilemmas by simply making them aware of this procedure. Participants who are given instruction regarding the effectiveness of this procedure, as would be given during formal ethics training, may be more motivated to utilize it on their own. Having a personal stake in the ethical dilemma being evaluated may also lead to increases in use of the procedure without formal instruction to do so. Meta-analysis of ethics training programs shows that voluntary programs are significantly more effective than mandatory programs (Watts et al., 2016). Regardless, this study seems to indicate that the consequence identification procedure must be utilized every time an ethical dilemma is assessed in order to produce the differences observed during the training phase.

### **Experiment 3**

Experiment 3 attempted to connect previous research findings regarding consequence identification with those regarding multitasking. Past research from our laboratory suggests that examining multiple scenarios simultaneously can lead to reduced predictions of harm in response to reading about the unethical actions of others (Watts, 2015). Experiment 3 attempted to examine whether or not deliberate consequence identification could be used to attenuate these effects. That is, could consequence identification be used as a strategy to counteract potential negative impacts produced by multitasking? First, I hypothesized that participants who completed the consequence identification task would predict significantly more harm than those in the cognitive load condition. Second, I hypothesized that those placed under cognitive load would predict less harm in response to the ethical dilemma scenarios and the unethical actions of others.

### **Method**

#### **Participants**

Two hundred and ninety-four college undergraduates enrolled in courses in the department of psychology were recruited using an online participant pool. Thirty-seven participants were removed from final analyses due to a failure to follow instructions or for submitting an incomplete survey. Final analyses were performed on the remaining two hundred and fifty-seven participants. This participant pool included fifty-nine (23%) males and one hundred and ninety-eight (77%) females with ages ranging from 17 to 37 ( $M = 19.11$ ,  $SD = 2.06$ ). Ethnicities of participants were 74.2% Caucasian, 2.7% African American, 13.7% Hispanic, 5.0% Asian, and 3.1% identifying as Other. Informed consent

was obtained prior to participation in any experiment activities. Participants were given extra credit points for a psychology class of their choice as compensation for their time.

### **Design**

This experiment consisted of an eight condition 4 (control vs. eight detail vs. four consequence vs. eight consequence) x 2 (no cognitive load vs. cognitive load) between-subjects design.

### **Materials**

Experiment 3 used the digital survey system Qualtrics for the administration of surveys and collection of data. All experiment sessions were completed in an identical laboratory setting. Participants used laboratory computers to read and respond to three scenarios. These scenarios each included an ethical dilemma, related to research or workplace protocol, faced by a fictional character (i.e., protagonist) and the protagonist's chosen action in response to this dilemma. All given actions were reasonable, though unethical. Participant responses to these decisions were recorded on the Perceived Moral Intensity Scales (PMIS) adapted from Singhapakdi et al. (1996) and Frey (2000). This measure asked participants to indicate their level of agreement with nine statements regarding the unethical actions taken. Responses were recorded on a 7-point Likert-type scale (1 = Strongly disagree; 7 = Strongly agree). Item 1 (i.e., "The Subject's situation involves an ethical dilemma") assessed ethical dilemma identification. Item 2 (i.e., "The Subject should not do the proposed action") assessed ethical judgments regarding the unethical actions. Item 3 (i.e., "If I were the Subject, I would make the same decision") assessed ethical intentions, the participants' willingness to engage in the same unethical action. Scores on this item were reversed so that higher scores indicate less willingness to take the same action. Items 4, 6, 7,

and 9 (e.g., “The overall harm (if any) done as a result of the Subject’s Action would be very small”) formed a subscale ( $\alpha = .88$ ) measuring predictions of harm. Scores on this scale were reversed so that higher scores indicate greater agreement that harm will occur. Items 5 and 8 (e.g., “Most people would agree that the Subject’s action is wrong”) formed a subscale measuring social pressure. These survey materials were the same for each condition. The consequence identification conditions differed only in the additional task presented between the dilemma and the PMIS. Cognitive load was induced using a serial memorization task. Sequences of randomly selected consonants are presented one at a time for two seconds each. Participants were asked to report these letter sequences on a separate survey page.

### **Procedure**

Participants were randomly assigned to each condition (control/no cognitive load,  $n = 34$ ; four consequence/ no cognitive load,  $n = 31$ ; eight consequence/ no cognitive load,  $n = 32$ ; eight detail/ no cognitive load,  $n = 33$ ; control/cognitive load,  $n = 33$ ; four consequence/cognitive load,  $n = 30$ ; eight consequence/cognitive load,  $n = 31$ ; eight detail/cognitive load,  $n = 33$ ) and began the study by reading the consent document. All groups completed a demographics questionnaire and were then given the first randomly selected ethical dilemma. Each scenario was presented for a minimum of one minute to ensure that the participants read it thoroughly before proceeding to the next step. After participants read the first ethical dilemma scenario the consequence identification section was presented. Participants randomly assigned to either the four consequence or eight consequence conditions were asked to identify the requisite number of possible consequences that could result from the unethical action taken by the protagonist in the dilemma scenario. The control condition was not asked to identify any possible consequences but instead

proceeded directly to the next portion of the study. The eight detail condition followed a similar procedure to the consequence identification conditions but was instead asked to recall eight details they could remember from the scenario previously read. This task was designed to be similar in time requirement to the experimental conditions without involving the identification of potential consequences. After this was completed, all groups continued to the PMIS response section. The cognitive load inducing memory task was introduced during this phase of the experiment. All participants were told that they would be participating in a memory challenge and that their performance on this activity could influence the amount of credit they received as compensation. This ensured that they were motivated to fully engage in this task, but were later told during the debriefing that everyone would receive the same amount of credit. Following this instruction, they were presented with a random letter sequence, one letter at a time for two seconds each. Those in the no cognitive load condition were then asked to report the letter sequence they saw, prior to being given a question from the PMIS. Those in the cognitive load condition were asked to respond to a question from the PMIS and then asked to report the letter sequence they saw. This required them to keep the letter sequence in mind while responding, generating cognitive load. This memorization task procedure was repeated with a new sequence of letters for each question on the PMIS. Each condition completed this same procedure for an additional two scenarios, totaling three. The order of scenario presentation was counterbalanced. Once participants read and responded to all three dilemma scenarios they were debriefed about the nature of the experiment and dismissed.

## Results

A 4 (consequence identification) x 2 (cognitive load) between-subjects ANOVA was run on predictions of harm. A significant main effect was found for consequence identification,  $F(3, 249) = 4.51, p < .01, \eta^2_p = .05$ . However, no significant main effect was found for cognitive load,  $F(3, 249) = 0.06, p > .05, \eta^2_p = .00$ , or the interaction between consequence identification and cognitive load,  $F(3, 249) = 1.79, p > .05, \eta^2_p = .02$ . Post hoc tests performed on consequence identification using Tukey's HSD test found that both the 4C ( $M = 5.05, SD = 0.76$ ) and 8C ( $M = 5.04, SD = 0.85$ ) conditions predicted significantly more harm as compared to the 8D condition ( $M = 4.61, SD = 0.79$ ). The C condition ( $M = 4.81, SD = 0.80$ ) was not significantly different from any other group. These group mean differences are presented in Figure 3.

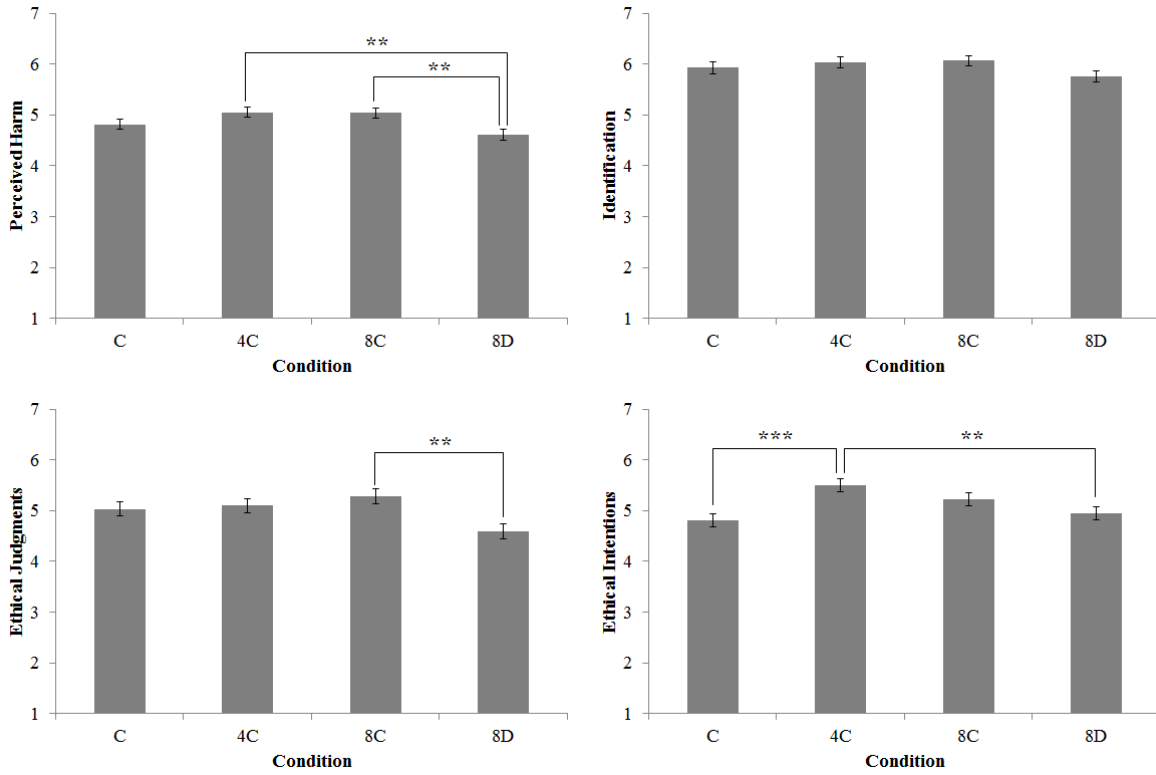
A 4 (consequence identification) x 2 (cognitive load) between-subjects ANOVA was also used to examine differences on dilemma identification. No significant main effect was observed for consequence identification,  $F(3, 249) = 1.72, p = .16, \eta^2_p = 0.20$ . Similarly, no significant main effect was observed for cognitive load,  $F(3, 249) = 0.08, p = .77, \eta^2_p = 0.00$ , or the interaction,  $F(3, 249) = 1.79, p = .15, \eta^2_p = 0.02$ . Group means for consequence identification are presented in Figure 3.

A similar 4 (consequence identification) x 2 (cognitive load) between-subjects ANOVA was run on the measure of ethical judgments. Again, a significant main effect was found for consequence identification,  $F(3, 249) = 4.37, p < .01, \eta^2_p = .05$ . However, no significant main effect was found for cognitive load,  $F(3, 249) = 0.44, p > .05, \eta^2_p = .00$ , or the interaction,  $F(3, 249) = 1.99, p > .05, \eta^2_p = .02$ . Post hoc tests performed on consequence identification using Tukey's HSD test found that the 8C ( $M = 5.28, SD = 1.10$ ) conditions

rated the Subjects' actions as wrong with significantly more conviction as compared to the 8D condition ( $M = 4.59, SD = 1.26$ ). Additionally, the 4C ( $M = 5.10, SD = 1.16$ ) was marginally stronger in their conviction as compared to the 8D condition. The C condition ( $M = 5.04, SD = 0.98$ ) was not significantly different than either experimental condition. These group mean differences are presented in Figure 3.

Finally, a 4 (consequence identification) x 2 (cognitive load) between-subjects ANOVA was run on the measure of ethical intentions. A significant main effect was found for ethical intentions,  $F(3, 249) = 5.72, p < .001, \eta^2_p = .07$ . However, similar to previous analyses no significant main effect was found for cognitive load,  $F(3, 249) = 0.74, p > .05, \eta^2_p = .00$ , or the interaction,  $F(3, 249) = 0.64, p > .05, \eta^2_p = .01$ . Post hoc tests performed on consequence identification using Tukey's HSD test found that the 4C condition ( $M = 2.50, SD = 0.94$ ) said they would be unlikely to take the same action with significantly more conviction as compared to the C condition ( $M = 3.20, SD = 1.13$ ) and the 8D condition ( $M = 3.06, SD = 1.09$ ). Additionally, the 8C ( $M = 2.78, SD = 0.93$ ) reported being marginally less likely to take the same action as compared to the C condition. These group mean differences are presented in Figure 3.

**Experiment 3 Dependent Outcomes**



*Figure 3.* Group means ( $\pm$  SE) for Experiment 3 on each of the four dependent measures with significant differences between groups denoted by labeled brackets. On perceived harm, groups 4C and 8C predict significantly more harm than C. On dilemma identification, no significant differences were observed. The 8C group displays significantly stronger conviction that unethical actions are wrong compared to 8D when making ethical judgments. The 4C group displays marginally stronger conviction compared to 8D. On ethical intentions, the 4C group displays significantly less willingness to take unethical actions compared to both C and 8D. Non-significant effects for cognitive load are not depicted. \*  $p \leq .05$  \*\*  $p \leq .01$  \*\*\*  $p \leq .001$

## Discussion

Study 3 was designed for two purposes. First, was to again confirm the findings of Study 1, that consequence identification procedures will lead to increased predictions of harm as the result of unethical actions and produce positive changes in ethical judgments and intentions. Second, Study 3 was designed to examine how these findings might interact with previous research which found that cognitive load can lead to lower predictions of harm (Watts, 2015).

Similar to Study 1, results from Study 3 demonstrated that consequence identification procedures do appear to have an effect on the prediction of harm as compared to a control condition. However, in contrast to Study 1, effects on the measure of predicted harm were only observed when compared to the eight detail condition. The mean for the true control condition trended in the expected direction, but did not reach significance. While this raises questions regarding the control conditions, these findings overall continue to provide support for the hypothesis that engaging in consequence identification when assessing the actions of others is beneficial as compared to not doing so, as evidenced by significant differences observed on measures of ethical judgments and intentions. However, it fails to provide clarity on the optimal number of consequences that should be identified. Similar to Study 1, no significant differences were found between the two experimental conditions and both groups differed from the eight detail control.

Study 3 also observed effects on measures of ethical judgments and intentions, similar to Study 1. However, which groups differed from one another was again, unexpected. While both experimental groups displayed significant differences compared to the eight detail control on ethical judgments, neither was significantly different from the true control.

Only the four consequence group was significantly different from the control conditions on ethical intentions. The eight consequence group trended in the expected direction but was only marginally different from the eight detail condition. Once again, this seems to confirm that some amount of consequence identification can improve dilemma assessment as compared to no identification but raises questions regarding the optimal number of consequences. This does, however, seem to support findings from previous work (Stenmark et al., 2010; Stenmark et al., 2011; Stenmark, 2013) as well as the findings of Study 1, suggesting that listing only four consequences may be most beneficial.

Examinations of the cognitive load conditions yielded no significant results. This finding conflicts previous research in this area (Watts, 2015) and refutes the first new hypothesis of this study. The lack of effect for cognitive load also resulted in no significant interaction between the two independent variables, meaning that we cannot examine the effect consequence identification may or may not have on cognitive load and its influence on ethical dilemma assessment, leaving the second new hypothesis unanswered. A potential explanation for the lack of results is considered below in study limitations.

### **General Discussion**

Previous work examining ethical dilemma assessment has found that consequence identification is associated with improved forecasting and decision ethicality (Stenmark, 2013) but suggested that the number of consequences identified may not matter (Stenmark et al., 2010; Stenmark et al., 2011). In fact, identifying more consequences has found to be detrimental in some cases (Stenmark, 2013). The studies presented here attempted better understand how the identification of consequences influences these effects by manipulating this variable. This was done by specifying the number of consequences that should be

considered when assessing the dilemmas rather than leaving the task open-ended. It was hypothesized that similar effects would be observed. Specifically, increased consequence identification would not necessarily be associated with improved ethical judgments. Additionally, the studies presented here sought to expand on these results by altering the context in which the assessment occurred. One key variation from past research on consequence identification is that these studies focus on an individual assessment of the actions of another, rather than the self.

The first goal, confirming the findings of previous work (Stenmark et al., 2010; Stenmark et al., 2011; Stenmark, 2013) on the impact of consequence identification, was mostly successful. In all studies, consequence identification procedures had some degree of success in producing improved ethical judgments and intentions as compared to a control group. These measures are representative of the second and third stages of Rest's Moral Reasoning Model and are crucial for making appropriate ethical decisions (Rest, 1986; Rest, Bebeau, & Thoma, 1999). In both Studies 1 and 3 consequence identification also led to increases in predicted harm caused by unethical choices, the measure of forecasting used in these studies. Improved forecasting has been shown to lead to greater decision ethicality in previous work (Stenmark, 2013). Taken together this data seems to confirm the effectiveness of the procedure as a whole. Although Study 2 produced no significant results to support claims regarding forecasting, it is possible that the removal of participants who did not attend the second session led to a sample that is not representative of the population, and influenced these findings. This possibility should be considered in the future when attempting to conduct similar studies across multiple sessions.

Attempts to determine an optimal number of consequences to identify, the second goal, produced mixed results. The three studies presented here failed to show a consistent pattern of results when comparing the effects of identifying four and eight consequences. While the two experimental conditions were never significantly different, they did differ when compared to control conditions. In Study 1 it appeared that identification of a lower number of consequences was the more effective strategy, Study 2 promoted a larger number, and results from Study 3 were mixed. It should be noted that, overall, fewer recruited participants completed the eight consequence condition to a standard meeting inclusion criteria. This may indicate that the eight consequence task is more difficult, tiring, or requires greater motivation to complete. Future studies should continue to examine the optimal format for this procedure as the studies presented here were unable to confirm the superiority of one or the other.

Finally, these studies attempted to examine the effect of a consequence identification procedure on previously observed effects of cognitive load. Study 3 was unable to reproduce any previously observed effects, making interpretations of this interaction impossible, and rendering the final goal moot. The consequence identification activity may have acted as a mitigating factor.

### **Limitations**

The limitations of these studies should be considered when interpreting the results and attempting to understand their impact. First, the sample population for these studies was made up of exclusively college students from a small private university, resulting in limited distribution of age among participants and an average near 19 in all studies. This should be taken into consideration when attempting to generalize the findings of this study as areas of

the frontal lobe have been found to be critically important for ethical decision making (Greene et al., 2004; Greene, 2014). This is particularly important because many college age students have not completed brain development in these areas; a process that has been found to continue into the twenties (Giedd, Blumenthal, Jeffries, Castellanos, Liu, et al., 1999). Participants of this age range may therefore produce results different from older adults given the same conditions. Older adults may be more prepared to benefit from instruction involving complex problem solving, including ethics training programs, as compared to younger individuals, such as college undergraduates (Watts et al., 2016). With this in mind, future studies should attempt to conduct similar tests with population samples of different age ranges, particularly with older samples.

Additionally, as a consequence of a gender skewed subject pool, a larger proportion of females participated in these studies. This is particularly relevant as previous research has shown that women, on average, tend to score higher than men on measures of ethical judgment and reasoning (O'Fallon & Butterfield, 2005). Additionally, men seem to benefit more from ethics training as compared to females (Watts et al., 2016). Future studies should examine gender differences in the context of these studies, or control for gender during participant recruitment.

The second limitation of these studies lies in the nature of the dilemmas. All ethical dilemma scenarios used in these studies are business or research related. While this makes them appropriate for our purposes, it makes generalization to dilemmas of a more emotional nature questionable. Additionally, this is a potential explanation for the lack of results observed from the cognitive load manipulation in Study 3. It was hypothesized that this manipulation would interfere with System 2 of the Dual-Process Model and lead to a more

emotional approach to the dilemmas based on System 1. However, these dilemmas are relatively unemotional in nature and involve another, unknown individual making the decision. This may have led to participants relying on a utilitarian judgment strategy regardless of condition, thereby leading to the lack of results observed. Previous work has observed that decreased personal involvement and increased emotional distance from dilemmas can lead to greater use of these utilitarian strategies (Greene et al., 2001). Many of the students that participate in these studies may have not had the life experiences necessary to relate to the given business scenarios. Future studies should consider using dilemmas of a more emotional nature when investigating the potential effects of cognitive load and its interaction with consequence identification.

### **Conclusions**

The complex nature of ethical dilemmas demands the consideration and analysis of a wide range of variables. Prominent among these are potential consequences that could occur as a result of various courses of actions. Previous work has found that the ability to consider these consequences is critical for resolving ethical dilemmas. The studies presented here attempted to investigate how deliberately listing consequences could impact an individual's views regarding unethical actions of others as opposed to self. Specifically, they examined ethical judgments, ethical intentions, and predictions of harm. The results support previous work, demonstrating that consequence identification is beneficial to almost every stage of the assessment process described in Rest's Moral Reasoning Model. These findings are particularly relevant for individuals who must assess the actions and dilemmas faced by others on a daily basis. Those who work in human resources and business management

positions should be particularly aware of the important benefits consequences identification can play when attempting to assess dilemmas such as those presented in these studies.

APPENDIX

**Appendix A**

Demographics

What is your age? \_\_\_\_\_

What is your gender? (Please Circle)      Male      Female

What is your racial/ethnic background? (Please Circle One)

1 = White/Caucasian

2 = Black/African American

3 = Hispanic/Latino(a)

4 = Asian/Asian American

5 = Native American/Alaskan Native

6 = Pacific Islander

7 = Other; Please explain \_\_\_\_\_

**Appendix B**

Ethical Scenarios/PMIS

Tom Waterman is a young management accountant at a large, diversified company. After some experience in accounting at headquarters, he has been transferred to one of the company’s recently acquired divisions run by its previous owner and president, Howard Heller. Howard has been retained as vice-president of this new division, and Tom is his accountant. With a marketing background and a practice of calling his own shots, Howard seems to play by a different set of rules than those to which Tom is accustomed. So far it is working, as earnings are up and sales projections are high. The main area of concern to Tom is Howard’s expense reports. Howard’s boss, the division president, approves the expense reports without review, and expects Tom to check the details and work out any discrepancies with Howard. After a series of large and questionable expense reports, Tom challenges Howard directly about charges to the company for typing that Howard’s wife did at home. Although company policy prohibits such charges, Howard’s boss again signed off the expense. Tom feels uncomfortable with this and tells Howard that he is considering taking the matter to the Board Audit Committee for review. Howard reacts sharply, reminding Tom that ‘the Board will back me anyway’ and that Tom’s position in the company would be in jeopardy.

**ACTION:** Tom decides not to report the expense charge to the Audit Committee.

Please evaluate this action of Tom by circling the extent of your agreement with each of the following statements:

1. Tom's situation involves an ethical dilemma

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

2. Tom should not do the proposed Action

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

3. If I were Tom, I would make the same decision

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

4. The overall harm (if any) done as a result of Tom’s Action would be very small

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

5. Most people would agree that Tom’s Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

6. There is a very small likelihood that Tom’s Action will actually cause any harm

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

7. Tom’s Action will not cause any harm in the immediate future

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

8. If Tom is a personal friend of the ‘Victim’, the Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

9. Tom’s Action will harm very few people (if any)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

Anna and several other graduate students at State U are employed in a laboratory as research assistants to Professor Creasin while working on their degrees. Dr. Creasin's material science laboratory is involved in manufacturing and casting metals and composites. Since Anna is new to the lab, she is required to attend a day-long seminar on hazardous material handling given by Dr. Daniels, who heads the Materials Safety and Policy Department. During the seminar, safe uses of many chemicals are discussed, including one arsenic based compound that is being used by a fellow graduate student, Bryan. Bryan is employing several safe uses of the compound, but drilling into the solid form and heating above 400 F are specifically mentioned as unacceptable, because these procedures cause poisonous particles to become airborne. Anna knows that Bryan is drilling and heating the lead compound up in a conventional oven to about 405 F. Anna then discusses the situation with Dr. Creasin alone in his office. At first Dr. Creasin is very upset. He explains that he is aware of the situation and that 5 degrees is not a significant increase from the recommended level. Furthermore, drilling and using a temperature over the recommended limit is the only way to carry out this ground-breaking research. He also says that it would be too expensive to modify the lab and the additional expense would mean firing several graduate students, possibly Bryan. He suggests that they not discuss this matter further.

**ACTION:** Anna decides not to report the hazardous laboratory practices to Dr. Daniels and the Materials Safety and Policy Department.

Please evaluate this action of Anna by circling the extent of your agreement with each of the following statements:

1. Anna's situation involves an ethical dilemma

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

2. Anna should not do the proposed Action

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

3. If I were Anna, I would make the same decision

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

4. The overall harm (if any) done as a result of Anna's Action would be very small

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

5. Most people would agree that Anna's Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

6. There is a very small likelihood that Anna's Action will actually cause any harm

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

7. Anna's Action will not cause any harm in the immediate future

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

8. If Anna is a personal friend of the 'Victim', the Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

9. Anna's Action will harm very few people (if any)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

Dr. Judy Brewster, long interested in the effects of exposure to maladaptive environments on development, plans to design a study to examine resilience. She wants to investigate why only some individuals are able to fend off the negative consequences associated with stressful environments and adverse circumstances, and which characteristics are associated with adaptation to such environments. To learn more about the characteristics associated with this resilience, Judy will study fourth, sixth, and eighth graders who have been exposed to violence within their communities. Youths will be assessed at six-month intervals for a period of four years. The amount and frequency of exposure to community violence will be measured, as well as short- and long-term psychological, behavioral and adaptational responses. Approximately two years into her study, Judy notices two distinct patterns of adaptation. Some of the children exhibit signs of distress, anxiety and depression, and report that they have begun to engage in substance use, delinquency, violence and sexual promiscuity. Other children show no signs of distress, or have outgrown and discontinued such behaviors. Judy is concerned about the acting-out youth. Although Judy is not clinically trained in diagnosing or treating distressed participants, she is competent enough to teach students adaptive skills such as anger management and conflict resolution. However, intervening in this way may invalidate her results. After deliberation, Judy decides to not intervene with the children, or inform outside authorities about their situation, in order to protect the results of her study.

**ACTION:** Judy decides not to intervene with the children in her study, keeping her findings so far for herself in order to protect the rest of her experiment and data.

Please evaluate this action of Judy by circling the extent of your agreement with each of the following statements:

1. Judy's situation involves an ethical dilemma

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

2. Judy should not do the proposed Action

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

3. If I were Judy, I would make the same decision

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

4. The overall harm (if any) done as a result of Judy's Action would be very small

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

5. Most people would agree that Judy's Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

6. There is a very small likelihood that Judy's Action will actually cause any harm

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

7. Judy's Action will not cause any harm in the immediate future

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

8. If Judy is a personal friend of the 'Victim', the Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

9. Judy's Action will harm very few people (if any)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

Dr. Smith and Dr. Jones have collaborated on a study to identify determinants of preterm birth, and over five years, the project team recruited 10,000 women into the study. The study participants provided multiple cell samples, all of which were frozen and stored. All study forms and specimens were coded with identification numbers rather than the women's names. The links between the identification numbers and names were kept locked up and separate from all other study materials. It has now been five years since the end of data collection for the study, and Smith has become very interested in studying potential genetic causes of preterm delivery. She is eager to proceed with a genetic analysis using the participants' stored blood specimens. However, Jones is concerned, mentioning that the consent form the women signed did not mention the possibility that they might do this genetic analysis, and that they need to contact them again to ask for their permission. Smith thinks that contacting the women would be too difficult, and that the five year time lapse complicates the matter too much, so she decides to perform the genetic analysis without contacting the participants.

**ACTION:** Dr. Smith decides not to contact the women from the previous study to request new signed forms of consent, and runs her studies on the stored cellular samples.

Please evaluate this action of Dr. Smith by circling the extent of your agreement with each of the following statements:

1. Dr. Smith's situation involves an ethical dilemma

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

2. Dr. Smith should not do the proposed Action

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

3. If I were Dr. Smith, I would make the same decision

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

4. The overall harm (if any) done as a result of Dr. Smith's Action would be very small

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

5. Most people would agree that Dr. Smith's Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

6. There is a very small likelihood that Dr. Smith's Action will actually cause any harm

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

7. Dr. Smith's Action will not cause any harm in the immediate future

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

8. If Dr. Smith is a personal friend of the 'Victim', the Action is wrong

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

9. Dr. Smith's Action will harm very few people (if any)

1	2	3	4	5	6	7
Strongly disagree	Disagree	Disagree slightly	Neither agree/disagree	Slightly agree	Agree	Strongly agree

**Appendix C**

## Consequence Identification

Please identify four/eight potential consequences of the Subject's Action from the scenario you read previously, for either the Subject or others involved. Write one consequence in each box below.

**Appendix D**

Detail Identification

Please identify eight details you recall from the scenario you read previously, regarding either the Subject or others involved. Write one detail in each box below.

**Appendix E****Cognitive Load Manipulation**

As part of this study your memory will be tested. You will need to memorize the following letter sequence and be able to reproduce it later. How well you perform on this memory task will impact the amount of credit you receive for this study.

No Cognitive Load Condition:

HFTR

Please reproduce the previous letter set: \_\_\_\_\_

You will not be asked to remember this set again.

PMIS QUESTION

Cognitive Load Condition:

HFTR

PMIS QUESTION

Please reproduce the previous letter set: \_\_\_\_\_

You will not be asked to remember this set again.

Sample Letter Sequences:

YGDB  
NJPM  
CRTK  
THBQ  
JMZH  
TCVF  
SHLG  
VPTF

JLXT  
KSMD  
GSYP  
CXLN  
DLYM  
GBRC  
DCKB  
KRWJ

**Appendix F**

## Sample Debriefing

Thank you for your time and participation. This study was interested in examining how consequence identification can affect perceptions of the ethical behavior of others. We wanted to see if asking students to consider and list the possible consequences of an unethical action would alter their assessment of the ethical dilemma, specifically subsequent predictions of harm. Some students were asked to list four consequences, others were asked to list eight, and finally some were not required to list any. We hypothesize that listing out possible consequences by writing or typing them will lead to greater predictions of harm. All given scenarios were fictitious. If you have further questions feel free to e-mail me (j.l.watts@tcu.edu). Thank you again for your participation.

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## CONSEQUENCE IDENTIFICATION AND DILEMMA ASSESSMENT

### VITA

Jordan Lee Watts was born August 2, 1990 in Dallas, Texas. He is the son of E. Michelle Watts and Lee A. Watts. He graduated with a Bachelor of Science degree in Psychology from Texas Christian University of Fort Worth, Texas in 2012.

Following this, he enrolled in the graduate program at Texas Christian University where he earned a Master of Science degree in Psychology in 2014. While working toward a Doctorate of Philosophy degree in Experimental Psychology with a minor in Quantitative Psychology he held a Teaching Assistantship from 2013 to 2016. From 2016 to 2017 he held a Graduate Assistantship, serving as the Experimental Design and Statistics Consultant for Texas Christian University.

ABSTRACT

PREDICTING POTENTIAL PITFALLS: THE IMPACT OF CONSEQUENCE  
IDENTIFICATION ON ETHICAL DILEMMA ASSESSMENT

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Evidence shows that identifying potential consequences as a part of ethical dilemma assessment leads to improved forecasting and greater decision ethicality when one is deciding which actions to pursue. The present experiments attempt to expand upon past research and examine the potential impact deliberate identification of consequences has on the assessment of another individual's unethical response to a dilemma. The usefulness of this strategy as a training tool is assessed. Finally, the experiments examine how deliberate consequence identification may interact with previously reported effects of cognitive load.

In Study 1, the deliberate identification of consequences was found to result in significant differences on ethical dilemma assessment. Those who were asked to identify consequences that could occur from unethical actions predicted significantly more harm as a result of those actions compared to controls. Additionally, these participants reported that the unethical actions were wrong and indicated an unwillingness to take the same actions with significantly more conviction compared to controls. Study 2 attempted to examine whether or not participants who successfully used the consequence identification procedure previously would display persistent positive effects on future dilemma assessment when they were not required to deliberately identify consequences. In the initial training session, participants were asked to identify either four or eight consequences on two scenarios. Significant

## CONSEQUENCE IDENTIFICATION AND DILEMMA ASSESSMENT

differences were observed compared to controls on measures of ethical judgment and ethical intentions. Those asked to identify consequences displayed stronger conviction that unethical actions were wrong and reported less willingness to take the same actions. No significant differences were observed between those who underwent consequence identification training and those who did not on measures of harm prediction, ethical judgments, or ethical intentions when assessing dilemma scenarios immediately after practice or one week later. Study 3 attempted to further expand these findings by combining consequence identification with previous research on cognitive load. Significant differences were observed between those asked to identify consequences and controls on measures of predicted harm, ethical judgments, and ethical intentions. However, no significant differences were observed as a result of the cognitive load manipulation. Implications of these findings and future directions are discussed.