

THE IMPACT OF COGNITIVE STRATEGY, SELF-CONTROL, AND EMOTIONAL  
INTELLIGENCE ON ETHICAL JUDGMENTS AND INTENTIONS

by

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Abstract

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## The Impact of Cognitive Strategy, Self-Control, and Emotional Intelligence on Ethical Judgments and Intentions

The 2012 London Olympics were rocked by an unusual scandal. Eight badminton players from various countries were disqualified from the competition for intentionally losing matches in order to take advantage of the round robin tournament seedings for later tournament pairings. Those Olympians chose to undermine their earlier matches in an attempt set up an easier journey to the final matches; a decision that defied the values and ideals of the Olympics. As a result of their decisions, badminton became a ridiculed spectacle of the games. Unethical decisions do not present themselves only in the realm of athletics; these short sighted actions reside in all facets of our society, from business and political scandals to questionable practices and violations in academic and scientific domains (Gunthorpe, 1997; List et al., 2001).

Ethical dilemmas are situations in which an individual encounters a novel problem framed by an ambiguous context with no clear and simple solution. As such, appropriate ethical decision making should use a strategy that solves multi-faceted problems because the vague parameters of these dilemmas include various, and sometimes opposing, concerns and require novel and complex problem-solving skills (Werhane, 2002; Frederiksen & Ward, 1978). Individuals faced with an ethical dilemma are often forced to consider various alternative solutions and outcomes while comprehending the guidelines, obstacles, and ramifications in both the present and the future (Miner & Petocz, 2003). An understanding of the context of the situation, meaning the various causes, available courses of action, and possible resolutions for all those involved, is thought to be vital in effective ethical decision making (Mumford et al., 2008).

The purpose of the current research is to examine how the use of a cognitive mapping strategy (ACED IT) influences perceptions of the various stages of an ethical decision. Most of



the focus on improving ethics and ethical decision making has been on extensive and exhaustive training programs for older professionals, but there have also been examinations of current ethics training programs in a younger demographic, particularly in undergraduate level business programs (Mumford et al., 2008; Sweeny & Costello, 2007). These programs either involve multiple lengthy blocks of training over an extended period of time that have been developed and structured by collaboration between area professionals and ethics researchers, or are introduced in a classroom setting over the course of a semester. Cognitive mapping strategies could potentially provide a reasonable alternative to these lengthy training procedures in order to facilitate ethical decision making for a single decision, and could be used as structured tool to enhance current ethical training programs.

### **Moral Reasoning**

Rest's (1991) theory of moral reasoning describes an individual's decision making process in an ethical dilemma as beginning with identification of the situation, and then progressing through the steps of ethical judgment and intentions. Specifically, in order to initiate the cognitive processing necessary for formulating an appropriate decision, an individual must identify the situation as an ethical dilemma so that the necessary careful consideration of the situation and possible solutions will occur. Next, depending on the previous identification, an individual will evaluate the qualities of possible solutions to the dilemma presented. This evaluation, or judgment, of the various avenues for resolution of the dilemma involves both the rejection of unethical options and comparison of possible ethical solutions. The appropriate judgment of the various courses of actions available then leads to the selection of a decision concerning a solution, or, in other words, the intentions of the individual regarding their chosen solution. The final stage of the moral reasoning model is the actual action, or the carrying out of

the decision indicated by the intentions present in the third stage. An individual that has successfully completed a stage, however, does not necessarily initiate and complete subsequent steps.

The first three stages of the moral reasoning model (ethical identification, ethical judgment, and ethical intentions) have been shown to predict ethical outcomes in both business and organization situations, and have been shown to reliably predict each other in a linear fashion (Wright et al., 1997; Douglas et al., 2001; Sweeney & Costello, 2009; Singhapakdi, Vitell, & Kraft, 1996). Participants that adequately identified that a scenario contained an ethical dilemma in these studies were more likely to generate and appropriately evaluate possible solutions to the dilemmas (Singhapakdi, Vitell, & Kraft, 1996). Also, participants who evaluated a provided unethical, but reasonable, solution as being unethical were more likely to choose an appropriate solution (Sweeney & Costello, 2009). Further, ethical training programs that have been based on the moral reasoning model have led to improvements in the ethical decision making of university students in both science and business related majors, with participants showing better judgment of possible solutions and better intentions regarding their own decisions (Caughron et al., 2012; Bebeau & Thoma, 1994; Clarkeburn et al., 2002).

### **Sensemaking Model**

The sense-making model has become an accepted extension of Rest's theory, where sensemaking is a form of complex cognition that occurs when individuals are confronted with vague, high-stakes events, such as an individual deciding on the best university to attend (Drazin, Glynn, & Kazanjian, 1999; Walsh, 1989; Weick, 1995). These ambiguous, high-stakes events permit the application of various mental models in comprehending the circumstances, with adaptable evaluation and understanding of the assorted components of the situation leading to

better solutions (Hmelo-Silver & Pfeffer, 2004; Jonson-Laird, 1983). Sensemaking itself is a form of cognition in which an individual attempts to comprehend the components of a novel problem or situation, such as the practical issues involved, how previous experiences apply, and the various perspectives presented. In order to formulate an appropriate response to the novel problem, or action for the unique situation, sensemaking utilizes multiple individual and situational inputs to develop a viable solution. The sensemaking model proposed by Mumford and colleagues, and originally applied to the ethical training of scientists in academic fields, first asserts that there are several components of the situation that apply to initial assessment of the scenario. These components include applicable legal and social rules, such as Responsible Conduct of Research guidelines, the perceived source of the situation, and individual goals, all of which influence whether the situation is identified as involving an ethical dilemma or not.

After identifying a situation as an ethical dilemma, the individual then begins to frame the situation based on their unique inputs, previously discussed goals, protocols, and past experience of both a personal and professional nature (Mumford, Reiter-Palmon, & Redmond, 1994; Tversky & Kahneman, 1974). Identifying the issue as ethical in nature, and also one that affects personal goals, will produce emotions that will be integral in the decision making process by influencing both the decision and the cognitive state of the individual, with research suggesting that females might be better at interpreting and incorporating these emotional inputs (Haidt, 2001, 2003). After this identification, individuals will draw upon previous experience to help frame the current situation with previous precedence (Chen, 2003; Key, 1999). From previous experience the individual will estimate probable outcomes of their potential actions (Dörner & Schaub, 1994; Önköl et al., 2003). This forecasting, in turn, leads to an appraisal of the situation, potential outcomes, and the mental models applied to reach those outcomes in a

self-relevant manner (Oyserman & Markusm 1990; Strange & Mumford, 2005). This self-relevant manner indicates a self-reflective state which can mediate the selection of the mental model utilized in the actual decision making, and establish the framework for the actual sensemaking involved in the decision making process (Walsh, 1989; Mumford et al., 2008).

The entire sensemaking process utilizes effective interpretation and evaluation of the variety of factors presented by an ethical dilemma to produce viable and practical solutions, wherein increased use of sensemaking strategies when confronted with an ethical dilemma has been shown to increase the ethicality of individuals (Caughron et al., 2012). The model has been applied successfully to ethics training for higher level academics in social and hard sciences, with increased use of sensemaking strategies instructed by the program leading to better ethical decisions in roleplaying scenarios immediately after training and six months later (Mumford et al., 2008; Caughron et al., 2012; Bebeau & Thoma, 1994; Clarkeburn et al., 2002).

### **ACED IT**

Current ethics training programs, such as the sensemaking training, require an enormous investment of time and resources on the part of the individual enrolled. Individuals confronted with a single ethical dilemma, or those who lack the time to engage in training before facing an ethical decision could benefit from an alternative to current ethics training. To implement an alternative to the current extensive ethical training programs, two frameworks have been combined in the development of a cognitive mapping tool to assist students in navigating through efficient decision-making and action planning: decision stages (Robbins & Judge, 2007), and multiple perspective taking (Atha-Weldon & Dansereau, 2006). This combination of frameworks provides a structured cognitive strategy which guides individuals to examine various possible solutions, as well as the strengths, weaknesses, and potential outcomes of each solution,

by following a “fill-in-the-space” format to structure the written information (Dansereau, 2005). The tool is based upon a standard decision-making model (Robbins & Judge 2007) that is derived from five broad stages: define the issue, generate options, evaluate, select, and act. For the current mapping strategy, the stages are labeled as Assess the situation, Create choices, Evaluate choices, Decide, Implement, and Test (ACED IT). The tool, ACED IT, also includes alternative and outside perspectives embodied in an internal “Decision Team,” a step in which individuals choose and mentally refer to a select group of influential and familiar people for assistance (e.g., “What would Leonardo da Vinci do?”; Atha-Weldon & Dansereau, 2006). ACED IT has been shown to positively affect both desired personal change and coping with traumatic events in college student populations, with students who used ACED IT reporting greater intentions to engage in a desired personal change, such as exercising or studying more, and better coping strategies when facing a traumatic experience (Kreitler et al., 2012a; Kreitler et al., 2012b).

Individuals are also guided to consider additional ethical perspectives while evaluating the consequences of their potential actions and outcomes while completing ACED IT. These ethical perspectives are common perspectives in many college courses: Virtue, Rights, Justice/Fairness, Common Good, and Utilitarian (Velasquez et al., 1988). The Virtue perspective, for example, focuses on common ideals such as bravery, kindness, forgiveness, humility, and honesty, while the Rights perspective focuses on the consideration of the basic rights of those involved, and the prevention of the violation of those rights. The Justice/Fairness approach suggests human beings should be treated equally or, if unequally, fairly based on some standard that is defensible and the Common Good perspective focuses on societal impacts, such as pollution, healthcare, and public safety, and supports decisions that may infringe on individual

rights in favor of community goals. Finally, the Utilitarian perspective evaluates alternatives in an examination of the costs and benefits of competing options. These five ethical approaches are incorporated into ACED IT, to expand an individual's perception in the development and analysis of alternative courses of action (Velasquez et al., 1988).

ACED IT should provide a physical representation of the entire theoretical sensemaking model, including the framing, problem identification, and self-reflective states. Participants who work through ACED IT, if they do so appropriately, must consider and evaluate all of the components of the sensemaking model. Namely, participants must first identify the problem at the heart of the ethical dilemma, list practical issues that frame the situation, and determine who will be affected by the decision following ACED IT (Atha-Weldon & Dansereau, 2006). Next, participants generate and consider multiple possible solutions and then make sense of those solutions on a variety of criteria, such as the short term positives and negatives, long term consequences, and whether those solutions meet legal standards (Dansereau, 2005). Finally, after deliberating on the best solution available to them, participants employ forecasting in order to think through the implementation of their solution and possible obstacles that could arise. By following these steps through ACED IT, even without significant ethics training, individuals should show better ethical judgment in regards to an ethical dilemma and the viability of possible solutions.

Given the potential value of the ACED IT procedure and the importance of discovering individual factors that influence ethical dilemmas, the objective of the present studies is to compare the effects of ACED IT with a No Treatment Control while examining the influence of emotional intelligence and trait self-control levels on the various stages of the moral reasoning model present in morally intense scenarios. If the dual process model of moral judgments holds

true, then ACED IT should affect the cognitive tract through evaluation of various situational components, perspectives involved, and possible solutions while emotional intelligence and trait self-control should affect the correct processing of emotional and social stimuli evoked through the dilemma. Therefore, for the current studies we hypothesized that participants using ACED IT will report improved perception of a morally intense ethical scenario than those not receiving a treatment. Additionally, we hypothesized that both levels of emotional intelligence and self-control will predict perceptions of morally intense dilemmas, with higher levels of emotional intelligence and self-control predicting improved perceptions. Finally, we propose that there will be significant interactions between cognitive strategy conditions, emotional intelligence, and self-control, with the use of ACED IT interacting with higher levels of emotional intelligence and trait self-control to produce the best responses to the moral reasoning stages.

### **Study 1**

The aim of Study 1 was to first assess the effect of ACED IT, compared to a No Treatment Control, on how participants evaluate two ethical vignettes. We also wanted to explore the possibility that the use of certain ethical filters was preferred by either the ACED IT or No Treatment Control conditions. We hypothesized that participants who used ACED IT would have better responses on the three stages of the moral reasoning model presented: Ethical identification, ethical judgment, and ethical intentions.

### **Method**

#### **Participants**

Sixty seven undergraduate psychology students (27 female and 40 male; average age = 19.88,  $SD = 3.07$ ) from a mid-sized private university in the southwest were recruited. The

sample consisted of 74.6% Caucasians, 10.4% Latino(a)s, 10.4% African Americans, 1.5% Asians, and 3% “Other.” Participants received course credit for their participation.

## Materials

**Descriptive data.** A questionnaire requesting information about each participant’s gender, date of birth, and ethnicity was administered to participants.

**ACED IT.** This tool is a pre-structured map (Kreitler et al., 2009; Kreitler et al., 2012) that utilizes a “fill-in-the-space” format to spatially organize written information. On side one, the map prompts participants to describe a dilemma, note practical issues and individuals affected by the decision dilemma, and generate a decision team. Next, participants are asked to utilize the imagined advice of decision team members to list up to six potential solutions, and then rate each option on a Likert-type scale (0 = *not at all*, 3 = *very much so*), using ethical criteria (e.g., “It protects the rights of those involved”). Participants are then encouraged to eliminate options that score poorly, and consider the ones that are rated most highly. Following selection of the optimal solution, the participant turns to side two, and begins to detail the steps needed to implement his decision.

In the No Treatment Control condition, participants completed the Adult Touch Inventory, which lists 55 phrases concerning use of non-violent and non-sexual touch in everyday life with various groups (e.g., immediate family, romantic partner, friends). Respondents rate their amount of touch use by using a 5-point scale (0 = *never*, 4 = *all the time*). The Adult Touch Inventory was completed by No Treatment Control participants while ACED IT participants completed their maps due to its lack of relatedness to decision making in general.

**Dependent measure.** Perceived moral intensity was measured using 9-item Perceived Moral Intensity Scales (PMIS) adapted from Singhapakdi et al. (1996) and Frey (2000), and



previously used by several investigators (Leitsch, 2006; Sweeney & Costello, 2009) in order to measure the extent to which participants perceived the existence of moral intensity characteristics in the scenario. The scenario detailed a business dilemma (approving a questionable expense report) perceived to be representative of dilemmas found in the workplace. The scenario ended with an ethically questionable action taken in response. After reading the scenario and the action taken, participants were asked to rate the extent of their agreement. Perceptions of each of the nine moral intensity characteristics were measured with two items for each characteristic using a 7 point scale (1 = *strongly disagree* to 7 = *strongly agree*). Item 1 measures ethical dilemma identification, item 2 measures ethical judgment, item 3 measures ethical intentions, items 4, 6, 7, and 9 measure potential harm identification, and items 5 and 8 measure potential social pressure identification. Composite scores were computed by separately averaging items measuring participant identification of potential harm, and participant identification of social pressure.

### **Procedure**

The participants were randomly assigned to one of two groups: ACED IT (n = 34) or a No Treatment Control group (n = 33). Individually numbered folders held experimental materials for each of the three groups. These folders were randomly sorted, and placed in one large pile. As participants entered the large lecture hall, they selected the folder on top of the pile, and were then instructed to sit one seat apart from other participants. After informed consent was obtained, participants were asked to follow the brief instructions in their folders. Next, all participants completed a demographics questionnaire and then were given instructions asking them to read an ethical scenario regarding approval of a questionable expense report, involving a character named Tom.

Participants in the ACED IT group were then given instructions to complete ACED IT in response to the dilemma presented by the scenario they had just read and to imagine themselves in Tom's position when completing ACED IT. For example, "What would I do in Tom's scenario?" was typically written in the dilemma box by participants, followed by the generation of a decision team and potential solutions to this dilemma. Participants were given no training on the components or uses of ACED IT, but were allowed to ask for clarification on how to complete the form. Participants in the No Treatment Control condition were given an unrelated questionnaire as a control task. All groups were allotted 20 min to complete their task. Next, all participants received the dilemma regarding Tom once again, only on the second occasion, they were shown the resulting action taken by Tom, and then asked to rate Tom's decision. Participants then read a second, similar scenario and answered the same nine questions. After completing both scenarios participants rated the extent that they use certain ethical filters on a 7 point scale (1 = *not likely*, 7 = *very likely*) when confronted with an ethical dilemma. Finally, participants were given a full debriefing.

### Results

The first aim of Study 1 was to examine the difference between conditions on the various stages of the moral reasoning model. After checking Levene's tests for assumptions for normality, all of which were nonsignificant ( $p$ 's > .05), we ran independent samples  $t$ -tests on the ethical identification, ethical judgment, and ethical intention responses for the first scenario, the Tom scenario ( $N = 66$ ;  $p = .05$ ). The only significant finding between conditions was for ethical judgment responses,  $t(64) = 2.42$ ,  $p < .02$ ,  $d = .60$ , with the ACED IT condition ( $M = 5.39$ ,  $SD = 1.94$ ) displaying higher ethical judgment responses compared to the No Treatment Control ( $M = 4.27$ ,  $SD = 1.82$ ). This effect of elevated ethical judgment for the ACED IT condition did not

carry over to the second scenario, the Drew scenario ( $p > .05$ ). There was a significant difference between conditions, however, for their use of the utilitarian ethical filter,  $t(64) = 2.75, p < .01, d = .68$ , with the ACED IT condition ( $M = 4.12, SD = 1.29$ ) utilizing that particular filter less for their ethical contemplation strategy than the No Treatment Control ( $M = 5.00, SD = 1.30$ ). See Table 1 for a full listing of condition t-test results.

**Table 1**  
*Group Means and Standard Deviations for T-Test Results Study 1*

Dependent Variable	ACED IT Participants	No Treatment Control	<i>d</i>
Tom Scenario Judgment	5.39 (1.94)*	4.27 (1.94)	.60
Drew Scenario Judgment	4.79 (1.76)	4.61 (1.39)	.11
Virtue Filter Use	4.12 (1.29)*	5.00 (1.30)	.68

*Note:* Significant difference between group means denoted by \*  $p < .05$

### Gender Confounds

Next, we wanted to investigate possible differences between males and females for their perceptions of the two presented dilemmas. Independent samples *t*-tests were used to examine gender differences for both the Tom and the Drew scenarios ( $p = .05$ ), after checking Levene's tests for assumptions for normality, all of which were nonsignificant ( $p$ 's  $> .05$ ). All Tom scenario responses were non-significant ( $p > .05$ ), but independent samples *t*-tests for gender differences on the Drew scenario revealed significant differences on the three items assessing the moral reasoning stages. For the first stage, ethical identification, the analysis revealed a significant difference between genders,  $t(64) = 2.79, p < .01, d = .72$ , with females ( $M = 6.22, SD = 1.01$ ) showing higher levels of identifying the situation as containing an ethical dilemma than males ( $M = 5.36, SD = 1.37$ ). The analysis of the item assessing ethical judgment for the Drew scenario was also significant,  $t(64) = 3.26, p < .005, d = .81$ , with females ( $M = 5.41, SD = 1.55$ ) displaying higher ethical judgment responses compared to males ( $M = 4.21, SD = 1.42$ ).

An independent samples *t*-test analysis of the third item, assessment of ethical intentions for the Drew scenario, also revealed significant differences,  $t(64) = 2.46, p < .02, d = .61$ , with females ( $M = 3.44, SD = 1.83$ ) showing lower intentions to choose an unethical solution to the dilemma than males ( $M = 4.44, SD = 1.45$ ). So females viewed the Drew scenario as being more serious and entailing a more unethical proposed solution than males. Finally, we utilized independent samples *t*-tests to examine the differences between genders on ethical filter use when considering the scenarios. Only the analysis of the ethical filter of virtue revealed significant differences between genders,  $t(64) = 3.45, p = .001, d = .87$ , with females ( $M = 6.07, SD = 1.04$ ) reporting greater consideration of virtues when evaluating the ethical dilemmas than males ( $M = 5.05, SD = 1.28$ ).

### **Moral Reasoning Stages**

The next goal of the study was to confirm the relationship between the various moral reasoning stages which has been shown in past research (Sweeney & Costello, 2009; Singhapakdi, Vitell, & Kraft, 1996). First, we used a simple linear regression to regress ethical judgment on ethical identification for the Tom scenario ( $p = .05$ ). Ethical identification was a significant predictor of ethical judgment, with higher levels of ethical identification in the Tom scenario leading to higher subsequent ethical judgment responses. Next, we utilized a simple linear regression to regress ethical intentions on ethical judgment for the Tom scenario ( $p = .05$ ), which revealed ethical judgment to be a significant predictor of ethical intentions, with higher levels of ethical judgment leading to a decrease in intentions to choose an unethical solution to the dilemma. The results from the Tom scenario replicate previous research, but we also wanted to replicate these relationships between the moral reasoning stages in the Drew scenario. To begin, a simple linear regression analysis was used to regress ethical judgment on ethical

identification ( $p = .05$ ), which showed that again ethical identification was a significant predictor of ethical judgment responses, with higher ethical identification responses predicting higher ethical judgment responses for the Drew scenario. Finally, a simple linear regression analysis was utilized to regress ethical intentions on ethical judgment ( $p = .05$ ), which showed ethical judgment to be a significant predictor of ethical intentions for the Drew scenario, with higher ethical judgment responses once again predicting decreased intentions to select an unethical solution for the dilemma. Table 2 displays the summary of these simple linear regression analysis results.

**Table 2**  
*Regression Coefficients for Moral Reasoning Stages in Both Scenarios*

Dependent Variable	Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>d</i>
Tom Scenario					
Ethical Judgment	Ethical Identification	.98	.24	4.15***	1.01
Ethical Intentions	Ethical Judgment	-.45	.09	4.74***	1.18
Drew Scenario					
Ethical Judgment	Ethical Identification	.32	.15	2.15*	.50
Ethical Intentions	Ethical Judgment	-.71	.10	4.15***	1.71

Note: \*  $p < .05$ . \*\*\*  $p < .001$

## Discussion

The results from Study 1 both confirmed previous findings concerning the moral reasoning model and presented interesting avenues for the use of ACED IT. First, our simple linear regression analyses of the moral reasoning stages confirmed the theorized relationships between the various stages. According to the moral reasoning model, if an individual is going to make an appropriate ethical decision, they must first identify the situation as being an ethical dilemma (Rest, 1986). The better an individual is at identifying the ethical nature of the situation, the better they should be at evaluating appropriate courses of action. Our results from Study 1

demonstrate that higher responses indicating more identification of the presence of an ethical dilemma led to better judgment responses when considering the proposed action in the target scenarios, replicating results of previous research (Sweeney & Costello, 2009; Singhapakdi, Vitell, & Kraft, 1996). Both the Drew and the Tom scenarios presented the participants with ambiguous situations with an unethical, but not unreasonable, solution. For example, in his scenario, Tom was pressured by his boss at his new job to falsify some business expenditures or risk losing his employment and therefore chose to follow the wishes of his boss and wrote off the expenses. Through higher identification of the ethical nature of the situation, participants showed better judgment in evaluating the unethical solution of falsifying expense reports at the request of your direct superior. As a result of this better judgment, individuals should show a decrease in their intentions to choose an unethical solution to both the Tom and the Drew scenarios.

The relationship between the second and third stages of the moral reasoning model, ethical judgment and ethical intentions, as seen in previous research, was also supported by our analyses (Sweeney & Costello, 2009; Singhapakdi, Vitell, & Kraft, 1996). Participants who displayed better judgment responses in evaluating the unethical solution reported lower intentions to accept the unethical solution as their preferred course of action. The significant relationship between judgment and intention responses was present in both the Tom and the Drew scenario. To sum, in the current experiment, increased identification of the ethical nature of the scenario leads to better judgment of possible solutions, which in turn leads to decreased intentions to choose an unethical solution to the dilemma.

Both of the scenarios in Study 1 displayed the relationship between three of the four stages in the moral reasoning model and the use of the ACED IT mapping strategy for the Tom scenario resulted in better ethical judgment compared to a No Treatment Control. For the Tom

scenario, there was no significant difference in responses between males and females; the Drew scenario, however, displayed significant differences between genders. Women reported better ethical identification, judgment, and intention responses. These findings suggest that this scenario is viewed differently by men compared to women, perhaps due to a difference in the emotional component of the situation, with men perceiving the situation as being less of a dilemma. Therefore, the Drew scenario was dropped from subsequent studies.

### **Study 2**

Study 2 was designed to expand on the previous findings from Study 1 through the addition of multiple scenarios with a counterbalanced order. This would allow for the examination of the effects of ACED IT across a variety of scenarios, instead of limiting our results solely to the Tom scenario. Although ACED IT is a valuable tool to look at ethical decision making, there are some possible individual difference variables that might moderate the effect of ACED IT on the moral reasoning model, and perhaps affect stages of the model that ACED IT does not. Therefore, we also included the individual difference measures for trait self-control and emotional intelligence in order to investigate their effects on the first three stages of the moral reasoning model. Finally, the scenarios used for Study 2 included the Tom scenario from Study 1, but excluded the Drew scenario because of the different responses between males and females on the moral reasoning stages. We adapted two ethical dilemmas from an ethics training website that were similar in length and intensity of the situation to the Tom scenario to provide additional comparison scenarios.

#### **Self-Control**

One individual factor that has recently been considered to have a significant impact on ethical decision making is self-control. Self-control is “the ability to override or change one’s

inner responses, as well as to interrupt undesired behavior tendencies (such as impulses) and refrain from acting on them” (Tangney, Baumeister, & Boone, 2004). The concept of self-control is a subcategory drawn from the theory of self-regulation, in which state based self-control has been shown to be a finite resource that can be depleted in the short term (Baumeister & Heatherton, 1996; Muraven, Tice, & Baumeister, 1998). Previous self-control research has found that individuals who have recently exerted self-control have a reduced ability to do so on subsequent tasks, such as refraining from eating sweets (Muraven & Baumeister, 2000). For example, participants who a cognitively taxing task, such as retyping a paragraph without using normal punctuation, persisted in difficult subsequent tasks for a shorter period of time (Baumeister, Bratslavsky, Muraven, & Tice, 1998). Further, research has shown that participants who were asked to eat a radish instead of a piece of chocolate were more likely to consume sweets than participants who were asked to eat the piece of chocolate (Baumeister et al., 1998). Individuals are required to utilize some of their self-control resources to resist the temptation to engage in unethical behavior, and previous depletion of self-control has been shown to predict unethical behavior in the relatively near future (Gino, Schweitzer, Mead, & Ariely, 2011). Additionally, this research has also suggested that this depletion reduces executive cognitive load which prevents the identification of an unethical act (Gino et al., 2011). Appropriate decision making, specifically in paramedics whose decision making carries significant moral impact for the well-being of others, has been linked to quicker responses on a Stroop’s task. Paramedics who displayed better self-control by resisting automatic impulse answers and then quickly responded with the correct answer, demonstrated better decision making in a later role playing task (Pilárik & Sormány-Schuller, 2011).



With respect to the current research, trait self-control has the potential to affect how an individual approaches an ethical dilemma, whether they would actually utilize a sensemaking strategy, and also their ability to resist choosing easy solutions to dilemmas. Trait self-control has been shown to have an impact on the intentions of individuals, especially in hypothetical scenarios, but has not been shown to have a significant impact on planning behaviors (de Ridder et al., 2012). For instance, individuals who are low in trait self-control are less likely to resist undesirable behavior, such as succumbing to temptation, as well as limiting their ability to follow through on desirable behaviors, such as pushing themselves to study sufficiently for a test (de Ridder et al., 2012). This type of individual is more likely to have difficulty regulating their emotions in response to an ethical dilemma and decide on a quick solution without careful scrutiny of the situation; therefore they would be less likely to engage in the cognitively taxing process of sensemaking. The higher trait self-control, or the more natural tendency an individual has to regulate and control their own behavior, the more likely they should be to utilize sensemaking when faced with an ethical dilemma.

### **Emotional Intelligence**

Another individual difference that has the potential to affect ethical decision making is emotional intelligence. According to the dual process model of moral judgments there are two pathways involved in an ethical decision: a cognitive pathway and an emotional pathway (Greene et al., 2001; Greene et al., 2004). The cognitive tract involves a detail oriented perspective, which is driven by effortful examination of the costs and benefits associated with the specifics of a situation and suppression of the negative emotions evoked by ethical dilemmas. The emotional processing pathway, however, emphasizes solutions that follow perceived relevant social roles and responsibilities, and relies upon automatic and intuitive perceptions

(Greene et al., 2001; Greene et al., 2008). These two processes can function compatibly or in competition, and thus both cognitive and emotional activity can affect an ethical decision. Some studies suggest that the immediate use of affective impressions can lead to the selection of superior solutions for complex solutions, such as choosing the best car model out of twelve possibilities, comparable to a cognitively detail oriented approach for the same choice (Mikels et al., 2011). It has even been suggested that morality is based more on perceptions than on logical reasoning, and that reasoning is generated to explain and justify judgments that are reached intuitively through intuitive processing (Haidt, 2001). Even the sensemaking model for ethical decision making accounts for the impact of emotions on the other facets of the decision making process (Mumford et al., 2008).

If emotions affect how individuals frame, process, and eventually solve an ethical dilemma, then the ability to understand and regulate those emotions should facilitate ethical decision making. Emotional intelligence is a relatively novel concept that goes by various names, such as emotional literacy, emotional quotient, and interpersonal intelligence. All of these refer to the ability of an individual to both recognize and interpret the emotions of others in a social situation, and also their ability to understand and regulate their own emotions (Dulewicz & Higgs, 2000). In regards to ethical situations, emotional intelligence applies to the concept of moral sensitivity: The awareness of how our actions affect others, the effects of potential actions and outcomes, and also the ability to conceptually navigate through mentally created possible scenarios through the application of empathy and role-taking skills (Rest, et al., 1999). Individual levels of emotional intelligence have been shown to affect the recognition of the ethical behavior of peers, and research suggests that individuals with higher levels of emotional intelligence are less likely to view unethical behavior in peers as justification for their own unethical behavior

(Joseph, Berry, & Deshpande, 2009). Other literature indicates that perceptions of the ethical behavior of peers are a significant influence on personal ethical decision making, where both individual ethical standards and the belief of the prevalence of wrong-doing in the environment affect decisions (Mesmer-Magnus et al., 2008; Loe et al., 2000; O'Fallon & Butterfield, 2005; Newstrom & Ruch, 1975). Mesmer-Magnus and colleagues (2010) suggest that emotionally intelligent individuals are more adept at interpreting the ethicality of others' actions, and therefore are less likely to participate in unethical behavior themselves.

Based on the results from Study 1 we hypothesized that the use of ACED IT would produce higher ethical judgment responses, regardless of which scenario the participant evaluated with their ACED IT form. We also hypothesized, because of the link between ethical decision making and individual difference variables of trait self-control and emotional intelligence shown in previous research, that both trait self-control and emotional intelligence would be significant predictors of the three stages of the moral reasoning model assessed: ethical identification, ethical judgment, and ethical intentions. Finally, we hypothesized that there would be a significant interaction between ACED IT and both of our individual difference measures of trait self-control and emotional intelligence, with higher levels of these individual differences resulting in better use of the ACED IT strategy and therefore better ethical judgment responses.

## **Method**

### **Participants**

One hundred and fifty seven undergraduate psychology students (81 female and 76 male; average age = 19.52,  $SD = 1.46$ ) from a mid-sized private university in the southwest were recruited. The sample consisted of 81.5% Caucasians, 5.1% Latino(a)s, 6.4% African

Americans, 6.4% Asians, and .6% Other. Participants received course credit for their participation.

## Materials

**Descriptive data.** A questionnaire requesting information about each participant's gender, date of birth, and ethnicity was administered to participants.

**Trait Level Self-Control Scale.** Baumesiter's (2004) Trait Level Self-Control scale is a 36-item questionnaire that measures an individual's average ability and propensity to regulate their behavior, emotions, and thoughts. The items consist of short phrases that a participant is asked to rate on a 5-point scale how much each statement reflects how they typically are, ranging from *Not at all Like Me* (1) to *Very Much Like Me* (5). The items employ different directions in order to avoid a response set bias.

**Self-Report Emotional Intelligence Test (SREIT).** The Self-Report Emotional Intelligence Test (Schutte et al., 1998) is a 33-item self-report scale assessing an individual's level of emotional intelligence. The items consist of short phrases that a participant is asked to rate on a 5-point scale how much they feel the statement applies to themselves, ranging from Not at All (1) to Very Much So (5). The items employ different directions in order to avoid a response set bias.

**ACED IT.** Participants completed the same ACED IT activity described in the first experiment. In the No Treatment Control condition, participants completed twelve easy Sudoku puzzles. Puzzles were obtained from a free online Sudoku puzzle database (<http://www.printable-sudoku-puzzles.com>) and then compiled into a two page packet with six puzzles per page.

**Dependent Measure.** Perceived moral intensity was measured using 9-item Perceived Moral Intensity Scales (PMIS) adapted from Singhapakdi et al. (1996) and Frey (2000), and previously used by several investigators (Leitsch, 2006; Sweeney & Costello, 2009) in order to measure the extent to which participants perceived the existence of moral intensity characteristics in the scenario. The scenarios detailed a business dilemma (Tom), a medical samples dilemma (Judy), and a workplace safety dilemma (Anna). The scenarios ended with an ethically questionable action taken in response. After reading the scenarios and the action taken, participants were asked to rate the extent of their agreement. Perceptions of each of the nine moral intensity characteristics were measured with two items for each characteristic using a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Item 1 measures ethical dilemma identification, item 2 measures ethical judgment, item 3 measures ethical intentions, items 4, 6, 7, and 9 measure potential harm identification, and items 5 and 8 measure potential social pressure identification. Composite scores were computed by separately averaging items measuring participant identification of potential harm, and participant identification of social pressure. The items assessing ethical identification, ethical judgment, and ethical intentions were reliable across all three scenarios (Cronbach's  $\alpha = .88, .79, \text{ and } .72$  respectively).

**Multi-dimensional Ethics Scale.** Adapted from Reidenbach, Robin, & Dawson's 1991 multidimensional ethics scale, this questionnaire contains three of the original eight scenarios, the auto, business, and retail scenarios, in which the situation is described and an action is reported. Participants then use a seven point Likert type scale to represent their agreement to five different statements. The statements are "The action is morally right," "The action is individually acceptable," "The action is unfair," "The action is not selfish," and "The action leads to the most good for the greatest number."

## **Procedure**

Similar to Study 1, participants were randomly assigned to one of two groups: ACED IT ( $n = 80$ ) or a No Treatment Control. Folders for the two conditions were randomly sorted, and placed in one large pile. As participants entered the large lecture hall, they selected the folder on top of the pile, and were then instructed to sit one seat apart from other participants. Participants were then asked to read and complete an informed consent document. Next, all participants completed a demographics questionnaire, after which participants were given instructions asking them to read one of three counterbalanced ethical scenarios (Tom, Judy, or Anna).

Participants in the ACED IT group were then given instructions to complete ACED IT utilizing the dilemma they previously read and to imagine themselves in the scenario's protagonist's position when completing ACED IT. For example, "What would I do in Anna's scenario?" was typically written in the dilemma box by participants who read Anna's situation, and was then followed by the generation of a decision team and potential solutions to this dilemma by the participant. Participants in the no treatment condition were given an unrelated Sudoku packet as a control task. All groups were allotted 20 minutes to complete their task. Next, all participants received the dilemma regarding their corresponding dilemma once again, and then were asked to rate the provided decision. Participants then read the other two scenarios (e.g., Tom and Judy if they first read about Anna) and answered the same nine questions for each action taken in the dilemma. After completing all three scenarios participants completed the Multidimensional Ethics Scale. Finally, participants were given a full debriefing.

## **Results**

To begin our analyses, we first tested the data for assumptions of normality for responses on the moral reasoning stage items and for emotional intelligence and trait self-control scores.

These primary examinations of the data revealed a no significant violations of normality in our dependent variables, but did expose four extreme outliers for total emotional intelligence and trait self-control scores. Removal of these respondents nullified the significant skewness of the data, and therefore their responses were excluded from the remainder of the analyses.

Our first goal for Study 2 was to replicate the results of Study 1 in regards to the effects of ACED IT, so we again utilized independent samples t-tests ( $p = .05$ ) to examine differences between conditions on the ethical judgment item for the three scenarios in the order presented and then each specific scenario regardless of order ( $N = 153$ ), after checking Levene's tests for assumptions for normality, all of which were nonsignificant ( $p$ 's  $> .05$ ). In order to assess the differences between groups for the first scenario presented, the scenario participants were explicitly instructed to use their condition's strategy to solve, we used an independent samples t-test to compare ethical judgment responses from the ACED IT condition participants and the No Treatment Control participants. The analysis revealed a significant difference between groups,  $t(151) = 2.35, p = .02, d = .38$ , with ACED IT participants ( $M = 5.06, SD = 1.72$ ) reporting significantly higher ethical judgment responses than the No Treatment Control participants ( $M = 4.39, SD = 1.84$ ). An independent samples t-test examining the group differences on ethical judgment responses for the second scenario presented also revealed a significant difference,  $t(151) = 2.04, p = .04, d = .33$ , with the ACED IT condition ( $M = 4.91, SD = 1.92$ ) reporting greater ethical judgment responses compared to the No Treatment Control ( $M = 4.29, SD = 1.81$ ) for the second scenario. An independent samples t-test ( $p < .05$ ) examining differences between the responses for the two conditions on the third scenario presented did not reveal any significant differences between ACED IT responses and those of the No Treatment Control ( $p > .05$ ). We

also did not find any significant results for independent samples *t*-tests comparing responses on the three scenarios based on gender.

**Table 3**

*Group Means and Standard Deviations for T-Test Results Study 2*

Dependent Variable	ACED IT Participants	No Treatment Control	<i>d</i>
First Scenario Judgment	5.06 (1.72)*	4.39 (1.84)	.38
Second Scenario Judgment	4.91 (1.92)*	4.29 (1.81)	.33
Third Scenario Judgment	4.53 (1.86)	4.57 (2.01)	.02

*Note:* Significant difference in group means denoted by \*  $p < .05$

### **Ethical Identification**

To further replicate findings from Study 1, we examined the relationships between the stages of the moral reasoning model for the three scenarios based on order presented and then for each specific scenario. To begin, we used a simple linear regression to regress ethical judgment on ethical identification for the first scenario encountered ( $p = .05$ ). The analysis confirmed previous findings of ethical identification being a significant predictor of ethical judgment, with higher ethical identification responses corresponding to higher ethical judgment responses for the first scenario presented. The simple linear regression analyses used to regress ethical judgment on ethical identification for the second and third scenarios, however, did not show ethical identification to be a significant predictor of ethical judgment.

Afterward, paired samples *t*-tests were used to examine differences in ethical identification responses first between the first and second scenario responses and then between the first and third scenario responses, but these analyses did not reveal any significant differences. Next, we examined the same relationship between ethical identification and ethical judgment specifically for the Tom scenario, the Anna scenario, and the Judy scenario. Through a simple linear regression analysis ( $p = .05$ ) we determined that ethical identification was not a



significant predictor of ethical judgment for the Tom scenario, regardless of when the Tom scenario was presented, which was contrary to the results of Study 1. For the Anna scenario though, ethical identification was a significant predictor of ethical judgment as revealed by a simple linear regression, with higher ethical identification responses predicting higher ethical judgment responses. A simple linear regression analysis for the Judy scenario also revealed ethical identification to be a significant predictor of ethical judgment, with higher ethical identification responses leading to higher ethical judgment responses again. Table 4 shows the simple linear regression results for the moral reasoning stages across all scenarios and orders.

### **Ethical Intentions**

In order to assess the relationship between the ethical judgment responses and the ethical intentions responses, simple linear regressions were used to regress ethical intentions on ethical judgment ( $p = .05$ ) for the three scenarios in the order received and for each specific scenario (i.e., the first, second, and third scenario seen and then the Tom, Anna, and Judy scenarios regardless of order respectively). For the first scenario received, ethical judgment was a significant predictor of ethical intentions, with higher responses on the ethical judgment item predicting decreased intentions to choose an unethical solution to the first scenario. Ethical judgment was a significant predictor of intentions for the second scenario as well, with higher ethical judgment responses leading to decreased intentions to choose an unethical solution to the dilemma. In the analysis for the third scenario presented, ethical judgment was once again a significant predictor of ethical intentions, with higher ethical judgment responses corresponding to lower intentions to choose an unethical solution to the third scenario.

The same trend of ethical judgment being a significant predictor of ethical intentions was present in analyses for the three scenarios regardless of their order. For example, the simple

linear regression analysis of the Tom scenario regressing ethical intentions on ethical judgment revealed ethical judgment to be a significant predictor of ethical intentions, with higher responses on the ethical judgment item predicting lower responses on the item reporting intentions to choose an unethical solution to the Tom dilemma. The simple linear regression analyses regressing ethical intentions on ethical judgment for both the Anna scenario and the Judy scenario revealed ethical judgment to be a significant predictor of ethical intentions in which higher ethical judgment responses predicted lower unethical intention responses for both the scenarios.

**Table 4**  
*Regression Coefficients for Moral Reasoning Stages across Scenarios*

Dependent Variable	Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>d</i>
First Scenario					
Ethical Judgment	Ethical Identification	.38	.11	3.60***	.58
Ethical Intentions	Ethical Judgment	-.46	.07	6.94***	1.13
Second Scenario					
Ethical Judgment	Ethical Identification	.11	.11	0.96	.16
Ethical Intentions	Ethical Judgment	-.52	.07	7.67***	1.24
Third Scenario					
Ethical Judgment	Ethical Identification	.08	.12	0.68	.11
Ethical Intentions	Ethical Judgment	-.29	.07	4.32***	.70
Tom Scenario					
Ethical Judgment	Ethical Identification	-.10	.11	0.91	.15
Ethical Intentions	Ethical Judgment	-.27	.07	3.85***	.62
Anna Scenario					
Ethical Judgment	Ethical Identification	.33	.11	2.94**	.48
Ethical Intentions	Ethical Judgment	-.37	.07	5.65***	.92
Judy Scenario					
Ethical Judgment	Ethical Identification	.38	.11	3.40***	.55
Ethical Intentions	Ethical Judgment	-.64	.06	10.41***	1.69

Note: \*\*  $p < .01$ . \*\*\*  $p < .001$ .

### Emotional Intelligence

Next, we wanted to examine the relationship between emotional intelligence scores and the different stages of the moral reasoning model. First, emotional intelligence scores were a composite score of all 33 items after reverse coding the negatively worded statements ( $M = 128.69$ ,  $SD = 14.07$ ). We then examined gender and condition differences for emotional intelligence scores using independent samples  $t$ -tests ( $p = .05$ ), after checking Levene's tests for assumptions for normality, all of which were nonsignificant ( $p$ 's  $> .05$ ). There were no significant differences between conditions on emotional intelligence scores, but there were significant differences between male and female emotional intelligence scores,  $t(153) = 2.20$ ,  $p = .03$ ,  $d = .35$ , with females ( $M = 131.11$ ,  $SD = 14.77$ ) having significantly higher emotional intelligence scores compared to males ( $M = 126.18$ ,  $SD = 13.02$ ). Next, we used a simple linear regression analysis to regress ethical identification on emotional intelligence scores for the first scenario presented ( $p = .05$ ). The analysis revealed emotional intelligence to be a significant predictor of ethical identification for the first scenario,  $b = .02(.01)$ ,  $\beta = .17$ ,  $t(152) = 2.09$ ,  $p = .04$ ,  $d = .34$ , with higher emotional intelligence scores predicting higher ethical identification responses for the first scenario. The same relationship between emotional intelligence and ethical identification was present for the second scenario presented,  $b = .02(.01)$ ,  $\beta = .22$ ,  $t(152) = 2.74$ ,  $p < .01$ ,  $d = .44$ , and the third scenario presented,  $b = .03(.01)$ ,  $\beta = .31$ ,  $t(152) = 4.00$ ,  $p < .001$ ,  $d = .65$ , with higher emotional intelligence scores resulting in higher predicted identification of the ethical component present in the second and third scenarios. In order to examine this relationship between emotional intelligence scores and ethical identification responses for each scenario, we performed simple linear regression analyses to regress ethical identification on emotional intelligence for the Tom, Anna, and Judy scenarios. The analyses showed emotional intelligence

to be a significant predictor of ethical identification responses for the Tom scenario,  $b = .02(.01)$ ,  $\beta = .25$ ,  $t(152) = 3.17$ ,  $p < .01$ ,  $d = .51$ , the Anna scenario,  $b = .03(.01)$ ,  $\beta = .26$ ,  $t(152) = 3.33$ ,  $p = .001$ ,  $d = .54$ , and the Judy scenario as well,  $b = .02(.01)$ ,  $\beta = .17$ ,  $t(152) = 2.18$ ,  $p = .03$ ,  $d = .35$ , with higher emotional intelligence scores predicting higher responses on the ethical identification item for all three scenarios regardless of their placement in the order presented.

In regards to the second stage of the moral reasoning model, simple linear regression analyses regressing ethical judgment responses on emotional intelligence scores were all non-significant ( $p$ 's  $> .05$ ) when examining the relationship for the scenarios both in the order presented and each specifically regardless of order. Investigation of emotional intelligence's influence on the third stage of the moral reasoning model, ethical intentions, revealed significant findings. The simple linear regression used to regress ethical intentions on emotional intelligence in the first scenario ( $p = .05$ ) presented indicated that emotional intelligence was a significant predictor of ethical intention responses, with higher levels of emotional intelligence resulting in lower reported intentions to choose an unethical solution to the scenario. This relationship was also present in the simple linear regression analyses of the second and third scenarios presented, with higher emotional intelligence scores predicting lower intentions to choose an unethical solution to the second scenario and also the third scenario.

Simple linear regression analyses were also utilized to regress ethical intention responses on emotional intelligence scores for the three specific scenarios regardless of their order of presentation ( $p = .05$ ). Emotional intelligence scores were shown to be a significant predictor of ethical intention responses for the Tom scenario, the Anna scenario, and the Judy scenario, with higher emotional intelligence scores predicting decreased intentions to choose on unethical

solution to any of the three dilemmas regardless of when they were examined by the participant.

These regression findings for all scenarios and orders are displayed in Table 5.

**Table 5**  
*Simple Linear Regression Coefficients for Individual Difference Effects on Intentions*

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>d</i>
First Scenario				
Trait Self-Control	-.02	.01	2.24*	.36
Emotional Intelligence	-.02	.01	2.29*	.37
Second Scenario				
Trait Self-Control	-.01	.01	1.18	.19
Emotional Intelligence	-.02	.01	2.28*	.37
Third Scenario				
Trait Self-Control	-.01	.01	1.49	.24
Emotional Intelligence	-.03	.01	2.82**	.46
Tom Scenario				
Trait Self-Control	-.02	.01	1.87	.30
Emotional Intelligence	-.03	.01	2.75**	.45
Anna Scenario				
Trait Self-Control	-.01	.01	1.50	.24
Emotional Intelligence	-.02	.01	2.16*	.35
Judy Scenario				
Trait Self-Control	-.01	.01	1.49	.24
Emotional Intelligence	-.02	.01	2.44*	.40

Note: \*  $p < .05$ . \*\*  $p < .01$

### Self-Control

Next, we were interested in examining the influence of trait self-control scores and the stages of the moral reasoning model. Composite scores from responses on the Trait Level Self-Control Scale were compiled after reverse coding the negatively framed statements ( $M = 115.79$ ,  $SD = 17.81$ ) In order to examine the relationship we utilized simple linear regression analyses

regressing the three stages, identification, judgment, and intentions, on trait self-control scores ( $p = .05$ ). Our analyses revealed only one significant relationship between trait self-control and a moral reasoning stage. The simple linear regression used to regress ethical intentions on trait self-control for the first scenario indicated that trait self-control was a significant predictor of ethical intention responses, with higher trait self-control scores predicting decreased intentions to choose an unethical solution to the first scenario presented. All other simple linear regression analyses used for regressing any of the moral reasoning stages for the other scenarios in order and regardless of order did not show any significant results. A summary of the simple linear regression analyses for both emotional intelligence and trait self-control are available in Table 5.

### **Multiple Linear Regressions**

Our final research goal was to examine the influence of ethical judgment, emotional intelligence, and trait self-control on ethical intentions. Based on previous analyses, these three variables were significant predictors of ethical intentions and could affect each other's influence on ethical intentions. In order to address this question, we utilized multiple linear regression analyses to regress ethical intentions on ethical judgment, emotional intelligence, and trait self-control for the three scenarios in order presented and then for each specific scenario ( $p = .05$ ).

For the first scenario presented, the multiple linear regression analysis revealed ethical judgment to be a significant predictor still while controlling for emotional intelligence and trait self-control scores, with higher ethical judgment responses predicting diminished intentions to choose an unethical solution to the first dilemma. Emotional intelligence was also a significant predictor of ethical intentions while controlling for ethical judgment and trait self-control, with higher emotional intelligence scores leading to decreased responses indicating lower intentions to choose an unethical solution. While controlling for the other two variables however, trait self-

control was no longer a significant predictor of ethical intentions ( $p > .05$ ). The multiple linear regression analysis for the second scenario revealed similar relationships between the predictor variables and ethical intentions. Ethical judgment was a significant predictor of ethical intention responses while controlling for trait self-control and emotional intelligence, with higher ethical judgment responses predicting lower intentions to select an unethical action in response to the second scenario. Again, trait self-control was not a significant predictor of ethical intentions while controlling for the other variables ( $p > .05$ ). Emotional intelligence, however, was still a significant predictor of ethical intentions for the second scenario while controlling for trait self-control and ethical judgment responses, with higher emotional intelligence scores predicting decreased intentions to choose an unethical solution to the second dilemma. For the third scenario presented, the same multiple linear regression analysis regressing ethical intentions on ethical judgment, emotional intelligence, and trait self-control showed the same results of the two previous analyses. Trait self-control scores were not a significant predictor of ethical intentions ( $p > .05$ ), but both ethical judgment and emotional intelligence were significant predictors of ethical intentions while controlling for the other variables, with higher ethical judgment responses and emotional intelligence scores predicting decreased intentions to choose an unethical solution to the third scenario.

Multiple linear regression analyses of the three scenarios regardless of order presented (i.e., the Tom, Anna, and Judy scenario response) regressing ethical intentions on ethical judgment, emotional intelligence scores, and trait self-control scores ( $p = .05$ ) revealed the same pattern of variable relationships as the previous three multiple linear regression models. Trait self-control was again not a significant predictor of ethical intentions for all three scenarios while controlling for ethical judgment and emotional intelligence ( $p$ 's  $> .05$ ). Ethical judgment,

however, was a significant predictor of ethical intentions, while controlling for emotional intelligence and trait self-control, for the Tom scenario, the Anna scenario, and the Judy scenario, with higher ethical judgment responses predicting decreased intentions to choose an unethical solution to any of the three scenarios. Finally, emotional intelligence was also a significant predictor of ethical intentions, while controlling for ethical judgment responses and trait self-control scores, in the Tom scenario, the Anna scenario, and the Judy scenario, with higher levels of emotional intelligence predicting decreased intentions to choose an unethical solution for the Tom, Anna, and Judy dilemmas. A summary of the multiple linear regression analyses is presented in Table 6.

Examination of the participant responses to the multidimensional ethics scale encountered after the three scenarios revealed dependent variables that significantly violated assumptions of normality diagnosed with Levene's tests ( $p$ 's < .05). After transforming the data with a log transformation, these dependent variables did not reveal any significant effect for both independent samples t-tests for condition differences and simple linear regression analyses examining the effects of emotional intelligence and trait self-control. As such, these extra measures of ethicality were disregarded in the final discussion of results.

### **Discussion**

Study 2 results extended the findings from Study 1 in two important ways. First, we explored both the relationship between ethical identification and judgment, and the relationship between ethical judgment and intentions for three separate, counterbalanced scenarios. Secondly, we also examined the effect of ACED IT across all three of those scenarios. Results for the various moral reasoning stages for Study 2 were mixed. In terms of order encountered, ethical identification was only a significant predictor of ethical judgment responses for the first scenario



presented. For each specific scenario, ethical identification was a significant predictor of ethical judgment responses for the Judy and the Anna scenarios, but not for the Tom scenario.

**Table 6**  
*Simultaneous Multiple Linear Regression Coefficients for Relevant Effects on Intentions*

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>d</i>
First Scenario				
Trait Self-Control	-.01	.01	1.02	.17
Emotional Intelligence	-.02	.01	2.04*	.33
Ethical Judgment	-.42	.07	6.28***	1.10
Second Scenario				
Trait Self-Control	-.002	.01	0.23	.04
Emotional Intelligence	-.03	.01	2.70**	.44
Ethical Judgment	-.53	.07	7.80***	1.27
Third Scenario				
Trait Self-Control	-.01	.01	0.65	.11
Emotional Intelligence	-.03	.01	2.82**	.46
Ethical Judgment	-.29	.07	4.48***	.73
Tom Scenario				
Trait Self-Control	-.01	.01	0.86	.14
Emotional Intelligence	-.02	.01	2.39*	.39
Ethical Judgment	-.26	.07	3.69***	.60
Anna Scenario				
Trait Self-Control	-.001	.01	0.09	.01
Emotional Intelligence	-.03	.01	2.74**	.44
Ethical Judgment	-.39	.07	5.89***	.96
Judy Scenario				
Trait Self-Control	-.01	.01	0.95	.15
Emotional Intelligence	-.02	.01	2.40*	.39
Ethical Judgment	-.63	.07	10.48***	1.70

*Note:* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

Results for the relationship between ethical judgment and ethical intentions and for the use of ACED IT from Study 2 were entirely consistent with those present in Study 1. For all participants, the first, second, and third scenarios all displayed the significant prediction of better ethical intention responses from higher ethical judgment responses. The same relationship was seen in the Tom, Anna, and Judy scenarios regardless of when they were evaluated by the participant. The strength and consistency of these results indicate that the better an individual is at examining and judging the appropriateness of various solutions available to them in an ethical dilemma, the better their intentions and hopefully final behavior will be. Improving the ability to effectively judge various courses of action available to individuals is an important, if not the main goal of ethical training programs and ethics courses. Participants who used ACED IT to evaluate their first scenario achieved this goal of better ethical judgment. ACED IT provided a process for the individual to utilize appropriate sensemaking in the situation to judge and evaluate possible courses of action effectively. Whether this elevated judgment can affect subsequent behavior has yet to be determined, but showing the effect ACED IT has on ethical judgment is an important first step.

Trait self-control scores did not play as important a role in the stages of moral reasoning and sensemaking as originally hypothesized. Trait self-control appeared to only affect an individual's ability to control their intentions for the first scenario encountered, as shown in its small effect on ethical intentions for the first scenario presented. This effect even faded when controlling for other important factors (i.e., emotional intelligence scores and ethical judgment responses). The lack of effect past the first scenario is not entirely surprising. Careful consideration of the scenarios could easily induce a state of ego-depletion in which a lack of state self-control resources would override trait tendencies to exert self-control in evaluation of

subsequent scenarios. These results suggest that an individual with a natural tendency or habit to control their attention and behavior is more effective at controlling their intentions when first encountering a scenario, but the effect is over-shadowed by the individual's state self-control, ethical judgment scores, and emotional intelligence. Past research has suggested that trait self-control relates more to life domains that emphasize the formation and retention of healthy habits rather than a single act of magnified will power (de Ridder et al., 2012). As such, trait self-control might be a more relevant variable in determining outcomes from an ethics training program than from a single study, while state levels of self-control would have more of an impact on ethical decision making in a single situation.

The effect of higher emotional intelligence appeared to be beneficial for both ethical identification and ethical intentions. These effects, however, could have been boosted by the completion of the easy Sudoku puzzles for the filler task in the No Treatment Control condition. Emotional intelligence has been shown to be a construct independent of general intelligence and intellectual performance, but the two domains have been shown to be influenced by each other, such as how emotional intelligence has been linked to playing a role in the academic performance of adolescents (Laborde, Dosseville, & Scelles, 2010). Nonetheless, emotional intelligence was an important factor in half of the moral reasoning stages in our results. Higher than average emotional intelligence led to better identification of the ethical nature of all of the situations and more appropriate intentions regarding possible solutions to those dilemmas, yet did not seem to affect the ethical judgment step. The lack of effect for ethical judgment responses was not entirely surprising because that step of the moral reasoning model emphasizes cognitive appraisal and evaluation of the possible solutions afforded by the situation. Emotional intelligence does, however, seem to extend the ability to understand the ambiguous nature of an

ethical situation and to not use examples of unethical behavior of others as justification for their own choices. Individuals who possess higher emotional intelligence seem to be more aware of the nature of the unconventional scenarios and emotions presented by ethical dilemmas.

### **General Discussion**

The results from both Study 1 and Study 2 indicate that both the moral reasoning model and the dual process model of moral reasoning affect ethical decision making. The effect of ACED IT on cognitive heavy evaluation step of moral judgments, combined with the effect of emotional intelligence on the more intuitive perceptions and understanding of context for moral identification and moral intentions, support the inclusion of both a cognitive pathway and an emotional pathway in moral reasoning (Greene et al., 2004). These findings also give extra support to the effectiveness of the sensemaking ethical training model because of its inclusion of both cognitive reasoning and emotional framing components in the program. However, the inclusion of ACED IT and emotional intelligence practice, such as the emotional intelligence and emotional self-efficacy intervention of Dacre Pool and Qualter's (2012) procedure, to existing ethical training programs could help to increase the effectiveness of these programs by improving the ability of individuals to successfully initiate and complete the first three steps of the moral reasoning model.

The lack of a significant link between the first and second stages of the moral reasoning model in Study 2, and the diminishing significance of the relationship presented in Study 1, could be due to an exposure effect; participants were merely expecting the second and third scenarios to contain an ethical component. Also, the Tom scenario has been used in previous, unrelated studies so participants might have encountered or heard about the scenario before participating in the present studies. With all participants already being exposed to an ethical

dilemma, the relationship between identification could have been affected. In Study 1, the second scenario presented, the Drew scenario, showed a relationship between identification and judgment that was similar to the results of the second and third scenarios for Study 1. The relationship for the Drew scenario just reached significance, at exactly  $p = .05$ , which, compared to the highly significant relationship presented in the Tom scenario, hinted at a similar trend as to the results of Study 2. These trends could also be the result of a state of ego-depletion caused by the use of a cognitive strategy and careful deliberation on the first scenario presented. When the scenarios were examined independent of order presented, both the Judy and Anna scenarios displayed the expected relationship between identification and judgment; The Tom scenario, however, did not replicate the results seen in Study 1. Taken together, the results from the order the scenarios were presented and independent of order indicate that identification of the ethical nature of a situation leads to better ethical judgment generally, but this relationship could be affected by other factors such as an ego-depleted state or pre-exposure to similar situations. In both experiments, however, the ability to appropriately judge available courses of action in the situations presented led to more appropriate ethical intentions, specifically choosing to not accept a presented unethical solution to the dilemma.

In addition, the establishment of relationships between the moral reasoning stages in our scenarios for both Study 1 and Study 2 enhances the ACED IT results. Use of ACED IT, compared to the No Treatment Control condition, led to higher ethical judgment responses for the Tom scenario but not the Drew scenario. The lack of effect for the Drew scenario is most likely due to the participants completing their ACED IT mapping over the Tom scenario alone. Therefore, one can draw the conclusion that the use of ACED IT improved the ability of participants to evaluate the possible courses of action, but only if they have used the mapping to

address the problem presented. Without further instruction or use of ACED IT, participants did not differ in ethical judgment scores for the Drew scenario. Also, ACED IT participants did not have significantly different intention responses, but the previous regression analyses lend support to the notion that the increased ethical judgment of the ACED IT participants should facilitate appropriate intentions. Whether the use of ACED IT would affect actual behavior and judgment in an actual ethical dilemma has yet to be seen though.

The addition of ACED IT and emotional intelligence practice to existing training programs would also address both the cognitive and emotional tracts proposed by the dual process model of moral reasoning. Inclusion of ACED IT would improve the evaluation of various courses of action available to an individual in an ethical dilemma, and perhaps even provide a structured example for the effective use of sensemaking strategies, thus addressing the evaluative and detail oriented cognitive pathway. The use of outside perspectives, multiple possible solutions, and the evaluation of those solutions on a variety of criterion all contribute to the effective application of sensemaking, and thus the improved judgment exhibited by ACED IT participants. Also, the addition of an emotional intelligence section to an ethics training program would serve to improve the ethical ability those enrolled in the program by addressing the automatic and intuitive processing by the emotional pathway. Improving the emotional intelligence of the trainees could improve their ability to first assess the situation or dilemma at hand, and then their ability to use examples of appropriate ethical behavior and ignore prevalent examples of unethical behavior in forming their own intentions for their ethical choices. Both of these additions could potentially increase the efficaciousness of current training programs and provide those programs, through ACED IT, with a structured example for how to utilize sensemaking cognitive strategies.

The sensemaking ethics training introduced by Mumford and colleagues (2008) has been shown to be effective, even up to six months after the training. This type of ethics training, however, is quite lengthy and requires a large investment of time and attention. As such, ethics training courses only benefit decisions that are made after the course. Based on the current results, ACED IT could provide a positive boost to ethical judgment skills with minimal instruction and training for an individual who is confronted with a dilemma and does not have the time or the resources to attend a lengthy ethics training course. Individuals who used ACED IT with minimal training have already been shown to have better decision making skills when it comes to coping and making a personal change, and the current results indicated that ACED IT can enhance ethical decision making skills with a small investment of about 20 minutes.

These results inspire a variety of future avenues for possible research. First, even though the moral reasoning stages, and the effects of ACED IT and emotional intelligence, have been exhibited through hypothetical scenarios, showing their presence in real time decision making would be the next logical step. For the current studies, ACED IT was given to participants without a significant amount of instruction or training, so the addition of a brief training session could help extend the benefits to ethical judgment. Also, ACED IT could have potential long term benefits if it was used as a mapping strategy across a semester through multiple short workshops or classes. If ACED IT produced an increase in effective ethical decision making from the beginning of the semester to the end, as measured by both the moral reasoning model and the quality of solutions generated for novel ethical dilemmas, it would add support to the claim that ACED IT would be a helpful addition to existing training programs. Finally, examining the possibility of boosting emotional intelligence scores through a simple but engaging cognitive task, such as Sudoku, could provide a path to positively affecting the ethical

identification and intentions of individuals. ACED IT and emotional intelligence represent two promising possibilities for improving the ethical decision making of individuals in the immediate, and possibly in the long term as well.



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### Publications

Kreitler, C.M, Dansereau, D.F., Barth, T.M., Repasky, G., Miller, J. (2012). Evaluation of a tool for enhanced decision-making and personal change among college students. *The Journal of the National Academic Advising Association*, 32, 18-29.

Kreitler, C.M, Dansereau, D.F., Barth, T.M., Repasky, G., Travis, K. (2012). Strategies for enhancing coping. An exploratory study utilizing expressive writing and a novel cognitive tool as strategies for enhanced moral perception. *International Journal of Business, Humanities and Technology*, 2, 112-118.

### Conference Presentations

Repasky, G., Miller, J., & Kreitler, C. (2009). Evaluation of a novel tool for enhanced decision-making and personal change among college students. Poster presentation at the TCU Student Research Symposium, Fort Worth, TX.

Pappas, N., Cahalan, E., Rios, V., Repasky, G. (2011). Evaluation of cognitive strategies for enhanced coping among college students. Poster presentation at the TCU Student Research Symposium, Fort Worth, TX.

## ABSTRACT

### THE IMPACT OF COGNITIVE STRATEGY, SELF-CONTROL, AND EMOTIONAL INTELLIGENCE ON ETHICAL JUDGMENTS AND INTENTIONS

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Increased awareness to the repercussions of unethical behavior in recent years has led to the development of various ethics training programs and studies examining the factors that influence ethical behavior. Although effective training programs have been established, these programs are lengthy, time intensive, and require sacrifices on the part of the participant. Further, multiple factors have been shown to impact ethical behavior, but research on factors that affect the perception of ethical dilemmas has been limited. The present studies examine of the effect of a cognitive guide map (ACED IT) and two individual factors, trait self-control and emotional intelligence, on participant perceptions of ethical dilemmas. Results indicate that the use of ACED IT positively affects ethical judgments, while emotional intelligence positively affects ethical identifications and intentions.