

Implicit and Explicit Values as a Predictor of Ethical Decision-Making and Ethical Behavior

Jessica E. Dinh

Robert G. Lord

Rosalie J. Hall

University of Akron

Sean T. Hannah

United States Military Academy

Keith Leavitt

Oregon State University

Sara J. Shondrick

Alycia L. Usher Perez

University of Akron

Contact Information:

Jessica E. Dinh

Department of Psychology

University of Akron

Email: [jd62@zips.uakron.edu](mailto:jd62@zips.uakron.edu)

**Abstract**

The present study uses measures of implicit and explicit values to predict moral behaviors. Implicit value measures based on a word-fragment completion tasks were developed in this study to assess implicit values. Because values and moral processes are believed to operate at both explicit and implicit levels, it was hypothesized that both implicit and explicit values would predict moral behaviors. Results from a laboratory study show that both implicit and explicit values predicted actual moral behavior, consistent with dual process theories of morality. Chronic collective identity moderated the relation of both implicit and explicit values to ethical behavior. Theoretical and practical implications for the use of both explicit and implicit value measures in research and applied settings are discussed.

### Explicit and Implicit Values as a Predictor of Ethical Behavior

Reports of corporate scandals and moral failings of public figures (from famous athletes and coaches to respected elected officials) have recently attracted much attention from the media. Attention to these issues is important given the enormous social and economic costs that are associated with organizational and employee misconduct. For example, employee theft alone is estimated to cost organizations 10 to 120 billions of dollars in annual revenues (Bourke, 1994). Even greater still, recent reports estimate that US corporations lose nearly 1 trillion dollars due to varied corporate malfeasances (Association of Certified Fraud Examiners, 2008).

In reaction to such scandals and other social ills, politicians, religious leaders, and laypersons alike have repeatedly invoked the importance of values for maintaining an ethical society. Tacit in these cries for a value-based society is the assumption that internalizing sets of values will actually produce ethical behavior. Although studies of behavioral ethics have proliferated, with scholars successfully identifying individual, contextual, and institutional factors which predict malfeasance in organizational settings and daily life (see Kish-Gephart, Harrison, & Treviño, 2010, for a recent meta-analysis), studies to date have not yet shown how individuals' values influence their ethical choices. This omission is surprising, given that values represent a relatively mature area of psychological inquiry (e.g., Bardi, Calogero & Mullen, 2008; Bardi & Schwartz, 2003), and are a topic of modern social and political discourse. Further, recent work has implicated reflexive, intuitive processes as critical drivers of moral judgments and behaviors (Haidt, 2001; Reynolds, 2006; Reynolds, Leavitt, & Decelles, 2010), and values have been conceptualized to operate at least partly through automatic processes (Bardi & Schwartz, 2003). We argue that insight into these automatic processes is especially important given that much of ethical research has focused on understanding moral or immoral action as the

consequence of rational, cost-benefit modes of thinking (Bennis, Medin, & Bartels, 2010; Ginges, Atran, Sachdeva, & Medin, 2011). Therefore, investigating how values influence moral choice and behavior at both conscious and non-conscious levels of awareness seems both important and timely.

Although there are multiple ways of referring to automatic phenomena, we will use the term *implicit* to refer to phenomenon that are non-conscious and proceed without deliberate intention. In contrast, we use the term *explicit* to refer to phenomenon that are accessible to conscious thought. In keeping with convention within the moral psychology literature, we will also use the terms moral and ethical interchangeably. In this paper, we present our findings of using a newly developed measure of implicit values based upon Schwartz's (1992) values circumplex with analogous explicit values as predictors of moral and immoral action. We show that values are important determinants of moral actions, but the magnitude of values' influence depended on whether it was implicitly or explicitly represented.

### **Values as Predictors of Ethical Decision-Making and Moral Behavior**

According to Schwartz' value theory (1992), *values* can be defined as relatively stable, motivational constructs that guide people's perceptions, attitudes, and behaviors towards achieving specific higher order goals. Importantly, his work identified ten broad types of values that are both universally endorsed (Schwartz, 1992; Schwartz & Boehnke, 2004; Schwartz & Sagiv, 1995) and remain relatively stable during adulthood (Feather, 1971; Schwartz, 1992). As shown in Figure 1, these ten values can be organized into four higher-order value factors. *Self-enhancement* includes values that emphasize personal achievement and self-interest (e.g., power, achievement, hedonism), whereas *self-transcendence* emphasizes values that promote the welfare of others (e.g., universalism, benevolence, self-direction). *Conservation* represents

values that endorse preserving and maintaining the status quo (e.g., tradition, conformity, security). Finally, *openness to change* reflects values that emphasize “independent thought and actions that favor change” (Schwartz & Sagiv, 1995, p. 94).

Focusing on values in the study of moral thought and behavior is important for several reasons. First, although studies have shown that the activities and behaviors of people within a society can be predicted by the underlining values that define that particular society (Bardi, Calogero, & Mullen, 2008), research that examines how personal values influence ethical behavior of individuals has not been thoroughly explored. This oversight is surprising as values and attitudes have been suggested as being strong antecedents of behavior (Hurtz & Williams, 2009). However, most empirical research has explored how personal values influence moral intentions and judgments (e.g., Finegan, 1994; Fritzsche & Oz, 2007; Glover, Bumpus, Logan, & Ciesla, 1997), rather than actual moral behavior.

Second, values can account for moral and immoral actions that cannot be readily explained by cost-benefit decision making paradigms. In fact, this latter perspective posits that moral or immoral actions are the result of calculated attempts at realizing personal objectives and other instrumental gains. Although this approach has dominated much of ethical research (Ginges, Atran, Sachdeva, & Medin, 2011), this cold, calculative approach for understanding moral action experiences difficulty when explaining moral phenomenon that appear to be driven by sacred values or latent social principles (Rai & Fiske, 2011). For example, there is qualitative research to suggest that contrary to popular belief, membership into extremist organizations (e.g., Al-Qaeda, Hezbollah) is not driven by the desire to achieve political or economic gain, but by the desire to protect or uphold fundamental social values (Argo, 2009; Ginges, Atran, Sachdeva, & Medin, 2011). In fact, Argo (2009) demonstrated that the decision to join the Palestinian

resistance increased positively with communal or self-transcendent values, but negatively with self-enhancement values. Consequently, moral or immoral actions that involve violence, suicide, and martyrdom (e.g., Kamikaze, suicide bombers, freedom fighters) may be driven by values that transcend individual outcomes including self-preservation. Hence, it is difficult to fully rationalize these kinds of moral or immoral actions purely from a cost-benefit perspective.

Third, a clearer understanding of the relationship between values and moral action is important as people are motivated to behave in ways that achieve a sense of self-consistency between their values and actions (Rokeach, 1973). However, it is possible that people may rely on different sets of values to guide behavior based on the saliency of different intrapersonal self-structures such as self-identities. Indeed, Verplanken and Holland (2002) demonstrate that while values are important determinants of behavior, their predictive validity depended on the extent to which specific self-identities were currently active. This result suggests that values are closely integrated with one's self-identity and that individuals have multiple self-identities that may become selectively active in response to different contextual cues (Laboeuf, Shaffir, & Bayuk, 2010). Together, these findings imply that different sets of values may guide moral behavior based on the saliency of specific self-identities.

Fourth, the influence of values on behavior may be important to consider as values have affective as well as cognitive components (Williams, 1968) that may guide intuitive decision-making based on cultural learning and more evolutionarily-based principles such as maintaining personal safety or social order. That is, although people are generally aware of the values that are important to them, values may also operate below the level of conscious awareness to influence moral or immoral behavior. . In fact, neurological research has identified a number of cortical areas that reinforce ethical and altruistic behavior based on a person's internalized values and

socialized norms (de Quervain, Fischbacher, Treyer, Schellhammer, Schnyder, et al., 2004; Rilling, Gutman, Zeh, Pagnoni, Berns, et al., 2002). Rilling et al. (2002) and de Quervain et al. (2004) demonstrated for example, that when individuals behave in ways that are altruistic, or when they perceive that defectors (i.e., those not cooperating) are punished, cortical areas associated with the brain's reward systems (e.g., nucleus accumbens, caudate nucleus, dorsal and ventral striatum) became instantaneously active. These results suggest that people feel rewarded when they comply with their internalized social norms and values, which in turn, may be predictive of future prosocial behavior.

### **Values, Implicit Processes and Ethics**

Recent perspectives within the study of moral psychology have greatly expanded upon the view that rational, conscious thought processes precede moral decision making (e.g., Jones, 1991; Kohlberg, 1981; Rest, 1986) by arguing that moral judgments and actions can also be formed implicitly by cognitive systems that do not require conscious attention (Chaiken, 1980; Lieberman, Gaunt, Gilbert, & Trope, 2002; Reynolds, 2006; Reynolds et al., 2010). Research utilizing fMRI for example, demonstrate that moral decisions may be processed subconsciously by cortical areas involved with processing emotional and visceral experiences (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Immordino-Yang, 2011). Other neurological studies suggest that there is an automatic tendency to behave honestly and that it is only when individuals are motivated to lie or engage in deceit that higher cortical structures associated with executive control (e.g., frontal cortical areas) become active (Greene & Paxton, 2009; see also Lieberman, 2007; Lieberman et al., 2002). Thus, honest behavior may be the predominant automatic response to many situations.

In short, neurological research provides compelling evidence that moral and immoral action may be processed subconsciously and that there are distinct cortical systems that enable subtle environmental cues to implicitly influence people's moral perceptions and actions. For example, exposure to dark or dirty environments, wearing dark shades, and observing an attractive face, can implicitly influence ethical behavior as individuals casually interact within their environments (Isanski & West, 2010; Schnall, Benton, & Harvey, 2008; Schnall, Haidt, & Jordan, 2008; Tsukiura & Cabeza, 2010). Recently, Immordino-Yang (2011) used neural and qualitative data to convincingly argue that bodily experiences such as the tightness of breath produced by observing another's misfortunes, automatically precipitates thinking of altruistic intentions. These systems may also contribute to the automaticity of moral or immoral actions when they are repeatedly enacted over time. Such automaticity is demonstrated by Gino and Bazerman (2009) who show that the tendency to overlook (and accept) unethical practices is especially likely if such practices, such as approving another's highly-inflated accounting estimates, occur repeatedly, but gradually over time (i.e., falling off a "slippery slope"), to the point where people become unaware of violating ethical norms.

In sum the previous paragraphs show that ethical decision-making and moral behavior are influenced both by implicit and explicit processes; although some scholars have argued that more automatic processes take precedence in moral decision making (e.g., Haidt & Kesebir, 2010). However, this dual-process approach presents several challenges for values-related empirical inquiry. First, to the best of our knowledge there are no studies that assess how implicit personal values may influence consciously and non-consciously derived moral behavior even though values have been argued to influence behavior at both conscious and non-conscious levels (Bardi & Schwartz, 2003). To fill this void, our primary objective in this study was to develop an



implicit values measure based on Schwartz's (1992) well-replicated values circumplex. Our rationale is based on the idea that it may be inappropriate to predict moral or immoral action using only measures that require respondents to access conscious content, such as their beliefs, when these actions are processed reflexively and automatically.

A second challenge with applying values-based research to moral psychology is that implicit and explicit values can each influence the processing of conscious versus non-conscious moral behaviors differently being based in different cognitive systems. Thus, we need methodologies that are sensitive to these different processes. Research demonstrates for example, that implicit values are processed in extensive semantic memory systems that operate independently of conscious thought (Baumann et al., 2005; Johnson, Tolentino, Rodopman, & Cho, 2010). Likewise, there is evidence to show that spontaneously driven moral behaviors are processed using ethical schemas and scripts that allow for the automatic and reflexive processing of ethical behaviors within these subconscious systems (Reynolds, 2006). Broadly, schemas refer to complex associative memory structures consisting of one's learned values, expectations, accumulated knowledge, and memories of past experiences that help guide future actions. Hence, the development of schemas facilitates the processing of social events, and schemas typically increase in depth and complexity as individuals learn new ways of resolving unfamiliar situations (Endicott, Bock, & Narvaez, 2003; Hannah, Avolio, & May, 2011). Importantly, with increased familiarity and exposure to a particular kind of experience (such as moral events), well-developed *ethical* schemas may automatically guide social behavior in terms of broader non-conscious constructs, such as implicit values. Consequently, implicit values may better predict moral or immoral actions when they occur spontaneously or automatically as each are processed within the same cognitive systems.

In contrast, explicit values are processed in memory systems that are accessible to conscious awareness. As such, individuals can actively reflect upon their explicit values when formulating a behavioral choice or decision, and in these cases, explicit values may better predict more deliberate types of behavior (Baumann, Kaschel, & Kuhl, 2005; McClelland, Koestner, & Weinberger, 1986). For example, explicit values are likely used as a standard to guide moral actions when ethical prototypes are not available, such as when individuals confront novel or challenging ethical scenarios (Gino & Bazerman, 2009) or when they are motivated to effortfully engage in moral reasoning (Reynolds, 2006). Demonstrating such reasoning, Gino and Bazerman (2009) showed that abrupt changes in other's ethical behavior were associated with longer decision times than when moral misconduct occurred gradually over time. Longer decision times permit higher-order cognitive systems to guide processing in such novel situations, implying that more explicit processes were used.

To summarize, cognitive approaches (Jones, 1991; Rest, 1986; Rest et al., 1999; Street, Douglas, Geiger, & Martinko, 2001) posit that moral action results from sequential explicit decision-making process that begins with the conscious recognition of a moral issue. However, behavior can also emerge from processes that are more automatic (Bargh & Chartrand, 1999; Chartrand, Dalton, & Cheng, 2008; Shah, 2005) and depend on implicit values. Supporting the distinction between explicit and implicit measures, a recent meta-analysis has demonstrated that implicit and explicit measures represent relatively independent underlying constructs, and consequently, predict unique variance in their target criteria (Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

In our study, unethical behavior was operationalized as engaging in cheating behavior for self-benefit, a common approach in the behavioral ethics literature (e.g.,

Bing, Davison, James, Stewart, Green, et al., 2007; Schweitzer, Ordonez, & Douma, 2004). Specifically, participants performing our experimental task could (a) cheat by viewing the answers during the task (i.e., “peeking”) or they could (b) over-report the total number of problems that they had solved correctly. We argue that cheating to win may be more congruent with certain values sets than others. For instance, self-enhancement values emphasize the need to achieve and to acquire personal power or dominance. Consequently, those with high self-enhancement values may be more open to act upon opportunities that allow one to obtain a competitive edge over others. Thus, *self-enhancement* values are expected to be positively associated with unethical behavior in this task:

Hypothesis 1. Unethical behavior (peeking and over-reporting performance) will be positively predicted by (a) explicit self-enhancement values and (b) activation of implicit self-enhancement values.

On the other hand, cheating by peeking at the answers and overstating one’s performance involves a personal risk of being caught and violates social norms. We expect that *conservation* values, which are associated with a prevention regulatory focus (Kark & van Dijk, 2007; Lord et al., 2005), and with goals related to security, tradition, and conformity, will become especially salient under conditions that evoke fear and anxiety. Under such circumstances, people are often motivated to comply with norms or “oughts” to avoid experiencing uncertainty and associated anxiety (Lord, Hall, Naidoo, Selenta, Medvedeff, & DuBois, 2005). Consequently, individuals who value conformity to social rules and exhibit deference to figures of authority may be less willing to cheat by peeking at the answers and/or to over-report their performance as a

means to win. In other words, their conservation values are expected to restrain self-benefitting, but dishonest, behavior. Indeed, Gino and Margolis (2011) demonstrate just this by showing that those primed with a prevention regulatory focuses were less likely to cheat being concerned with upholding social obligations while avoiding losses.

Hypothesis 2: Unethical behavior (peeking and over-reporting performance) will be negatively predicted by (a) explicit conservation values and (b) the activation of implicit conservation values.

Finally, *self-transcendence* values establish goals that are concerned with demonstrating benevolence and care for others; however, we were uncertain whether these values would inform behavior in a typical ethical behavior paradigm. That is, while self-transcendence values might plausibly increase pro-social motivations, they may be unrelated to behavioral responses such as cheating in which others are not visibly affected. Hence, in our study we examined the relationship between unethical behavior (peeking and over-reporting performance) and self-transcendence values in an exploratory manner.

### **Activation of Identity and Values**

Although values are influential determinants of social behavior, there is empirical evidence to suggest that not all values are active at the same time (Verplanken & Holland, 2002). Instead, different sets of values may influence behavior based on whether or not other cognitive constructs, such as self-identities, are also active. According to a number of scholars, self-identities refer to overarching knowledge structures that contain and help organize highly central, self-relevant information such as one's values or goals (Lord & Brown, 2001; Lord, Diefendorff, Schmidt, & Hall, 2010). Importantly, individuals may also have multiple self-identities that can

become selectively active when in different contexts or roles (Hannah, Woolfolk, & Lord, 2009; Laboef et al., 2010), where each contain different sets of values that influence how people process information (Verplanken & Holland, 2002). Here we assert that values will be most strongly related to behavior when they are associated with one's active self-identity. This argument is consistent with the findings of Verplanken and Holland (2002), which show that values] predicted consumer choices and prosocial behaviors best when values were closely integrated with one's self-concept and that this self-concept was also salient.

In this study, we use the identity construal levels framework developed by Brewer and Gardner (1996) to examine the activation of three levels of self-identity (Cross, Hardin, Gercek-Swing, 2011; Johnson & Saboe, 2011; Johnson, Selenta, & Lord, 2006). These levels include *individual*, *relational*, and *collective identities*, with active identities providing a "lens" through which people view themselves, their context, and their behaviors. Whereas those with an active individual identity would define the self as being distinct from others, those with a relational or a collective identity would define the self in terms of the dyadic relationship that they share with a focal other, or in terms of group membership, respectively (Lord & Brown, 2001).

It is important to note that the higher order values on Schwartz's (1992) value circumplex align with specific identities, with self-enhancement value types corresponding to *individual identities*, self-transcendence value types corresponding to *relational identities*, and conservation value types corresponding to *collective identities* (Lord et al., 2005). We expect that when the level of identity that is active is consistent with a given value, self-consistency motives (Lord & Brown, 2001; Verplanken & Holland, 2002) will drive judgments and behaviors to be consistent with that value. In the current study we also collected self-report measures of level of identity and explored their potential moderating effects on the relation of values to moral behavior.

## **Developing the Implicit Value Measure**

To date, a variety of implicit measurement techniques have been developed to assess implicit biases of social judgment (e.g., stereotypes). These range from paper-and-pencil tests, such as word fragment and sentence completion approaches (e.g., Johnson & Lord, 2010; Sekaquatewa, Espinoza, Thompson, Varagas, & von Hippel, 2003), to computerized latency reaction tests (e.g., implicit association test; Greenwald, McGhee, & Schwartz, 1998) and those that emphasize conditional reasoning (Bing et al., 2007). In the current study, we adopted a word fragment approach to measure implicit values because research shows it can be a reliable and valid method for assessing implicit constructs (Vargas, Sekaquatewa, & von Hippel, 2007). For example, Johnson and Saboe (2011) demonstrated in a field setting that implicit word fragment measures of affect predicted organizational citizenship behaviors, counterproductive work behaviors, and job performance. Other empirical works show that implicit word fragment measures can be more sensitive than explicit measures. In fact, Johnson and Lord (2010) found that implicit word fragment completion measures of identity were better than self-reported measures of identity when testing for the mediation of social justice effects on outcomes such as attitudes, theft, and helping behavior.

The current study extends the measurement development efforts of two pilot studies described in Lord, Shondrick, Dinh, and Hall (2010). These studies used Bardi et al.'s (2008) value indicators as a starting point for our implicit values measure. Because Bardi et al. have carefully specified the content domain associated with lexical specification of values, incorporating these words into our implicit measures allows us to be confident that we have appropriately sampled the lexical domain associated with Schwartz's (1992) ten values. These studies found implicit values significantly predicted judgments, and they suggested several

improvements that are reflected in our current implicit value measure. Of these, the most important was that our value word fragments were revised using the English Lexicon Project database (Balota, Yap, Cortese, Hutchison, Kessler, Loftis, et al., 2007) to ensure that the frequency of target value words was equivalent with the distracter word indicators. For example, with a word fragment capturing the value of security (e.g., C\_NTR\_L), a participant could respond with CONTROL (target word) or CENTRAL (non-target word). CONTROL and CENTRAL have equal frequency in terms of use, thus making them a good pair. The value word fragments, salient distracter items, and their word frequencies for our implicit value measures are in Appendix A. Another important result from these pilot studies is that very similar values measurement models were obtained across the preliminary studies, as well as in our focal study, supporting construct validity.

### **Method**

**Participants and procedure.** Undergraduates at a Midwest university were recruited from psychology courses and were offered extra credit and the chance to enter into a \$75 lottery in exchange for their participation in a laboratory study. Of the 181 respondents, 67.5% were female. Most participants identified their ethnicity as Caucasian (71.1%). The average participant age was 23.1 years ( $SD = 7.63$ ).

All tasks and measures were completed in a laboratory setting. To avoid priming effects, participants completed the paper-and-pencil word fragment measure of implicit values first. They then completed a computerized word anagram task designed to provide an opportunity for unethical behavior (i.e., cheating) to occur. Finally, participants completed an online survey that included the explicit values measure, and demographics.

### **Measures**

**Values measures.** *Explicit values* were measured using Schwartz's (1992) Value Survey. Respondents rated the importance of 45 value-related items on a scale with response options ranging from -1 (*opposing my values*), 0 (*not important*), 3 (*important*), to 9 (*of supreme importance*). For this study, we constructed explicit measures of three of four of Schwartz's higher order values, i.e., self-enhancement, self-transcendence, and conservation, by aggregating items related to lower-level values. Reliabilities were  $\alpha = .80$  for self-enhancement (power, achievement, hedonism),  $\alpha = .90$  for self-transcendence (universalism, benevolence, self-direction), and  $\alpha = .87$  for conservation (tradition, security, conformity).

*Implicit values* were assessed using a word fragment measure developed to assess ten values identified by Schwartz and Bardi (2003). Participants were instructed to complete as many word fragments as they could and to skip any word fragment for which the answer did not immediately come to mind. Thirty-nine items with a "correct" response rate (meaning that participants completed the fragment using the target word) of 10% to 85% were retained for analysis in this study.

Because target and alternative words were of equal frequency, we expected them to be equally accessible, unless a particular value or other construct was activated for the participant. Based on this logic, each word fragment item was scored as "1" if the target word was completed, and as "-1" if a non-target word was completed. Non-target words were scored because they convey information about the low accessibility of the focal construct relative to other competing constructs (Hyman, 1953; Moon & Lord, 2006). Word fragments which were not completed were scored as "0." Responses to the word fragments were summed to form ten item parcels corresponding to the ten Schwartz and Bardi values. Each item parcel was an aggregate of three to seven word fragment item responses. These parcels served as measured



indicators (in our tests of latent variable models) of the three higher-order value types of self-enhancement, self-transcendence, and conservation.

**Identity measure.** Chronic or central identities were measured with 15 self-report items from the Levels of Self-Concept Scale (Selenta & Lord, 2005). Participants responded to all items using a 5-point Likert scale anchored by *strongly disagree* (1) and *strongly agree* (5). Reliability for the individual level scale (i.e., *comparative identity*: “I often compete with my friends”) was  $\alpha = .79$ ; the relational level scale (i.e., *concern for others*: “It is important to me that I uphold my commitments to significant people in my life”) had an alpha of .68, and the collective level scale (i.e., *group identity*: “I judge myself by the standards of the organization or groups that I belong to”) alpha was .79.

**Dependent measures: Moral and immoral action.**

To examine actual moral behaviors, participants worked at a word anagram task in which they were instructed to solve as many anagram problems as possible (out of 14) within five minutes. As an incentive, they were informed that the number of words solved correctly determined the number of times they could be entered into a lottery with a prize of \$75.

Participants could potentially cheat on this task in two ways. First, they were informed by the experimenter prior to beginning the task that there was a button next to each problem that would indicate the correct answer, but that the buttons were meant to be disabled for this study and should not be used. Second, after each word, the computer program automatically presented the correct answer, providing participants with feedback on how they were doing. When participants exited the program at the end of the task, they were asked to write the number of anagrams they had solved on a post-it note and attach it to their experimental materials. Thus, they could easily over-report to the experimenter the number of problems they had answered

correctly. Unknown to participants, the computer program recorded the number of correctly solved problems, as well as the number of times that an “answer button” was inappropriately clicked. In sum, the task created a social dilemma in which participants could maximize their own potential rewards by cheating. Each participant thus received two ethical behavior scores consisting of: (a) the number of times he/she peeked at the right answer; and (b) the difference between the participant’s actual score on the task and the self-reported score.

### **Analytical Procedures**

Because the implicit measure of values was newly developed, we tested a confirmatory factor analysis (CFA) measurement model to confirm our hypothesized structure, which was based on Schwartz’s (1992) value dimensions, with one exception. Namely, the pilot results as well as the results from the current study suggested that the self-direction item parcel should be grouped with benevolence and universalism, rather than stimulation, as Schwartz (1992) had originally proposed. Thus, our model specified three latent factors of *self-enhancement*, *self-transcendence*, and *conservation*, each indicated by three measured variables (i.e., item parcels, see Bagozzi & Edwards, 1998; Hall, Snell, & Foust, 1999), as shown in Figure 2. To test our hypotheses, structural equation modeling (SEM) (Mplus 6.0; Muthén & Muthén, 1998-2010) was used to estimate the CFA models, as well as to estimate manifest variable path analysis models specifying relationships of higher-order value dimensions with moral behaviors.

The peeking and over-reporting variables were count data and were highly skewed toward the positive end of the distribution (i.e., the majority of participants did not peek or over-report, but a small number of subjects peeked and/or over-reported substantially). Therefore, a zero-inflated poisson (ZIP) analysis (implemented in Mplus) was used to test Hypotheses 1 and 2 involving these two dependent variables, as well as to explore the relationships of these two

dependent variables with self-transcendence values. We also examined identity as a potential moderator of these relations.

ZIP regression can be employed to simultaneously predict outcomes that may arise from two independent and qualitatively different processes. More specifically, ZIP estimates include logistic parameters indicating the likelihood of membership in a latent zero-count (e.g., non-cheating) group, and poisson-based parameters that predict the extent of cheating (a count variable) if one is in the latent cheating group. Indeed, previous studies suggest processes involved in guiding normative honest behavior (Greene & Paxton, 2009) are likely to be qualitatively different from those that determine the amount of cheating. This reasoning is also consistent with the dual process framework described at the beginning of this paper. Hence, ZIP analysis is consistent with such theory because it models qualitatively different processes simultaneously (see also Famoye & Singh, 2006; Lambert, 1992).

## **Results**

### **Test of the Measurement Model for Implicit Values and Sample Descriptive Statistics**

We began by examining the relations among a set of ten implicit values item parcel scores which corresponded to the ten values in Schwartz's (1992) circumplex model. For example, a Universalism item parcel score was constructed from participants' responses to the four word fragments of "equality," "justice," "liberty," and "unity," scored as previously described in the Methods section. Initial questions were whether the pattern of correlations among these item parcels reflected the underlying circumplex structure implied by Schwartz's theories, and whether the item parcels can be used as indicators of higher-order values.

To examine the first issue, we inspected the correlations of item parcels that correspond to values with adjacent positions on Schwartz's circumplex structure (see Figure 1). The mean

correlation among these adjacent pairs was .14, with 11 of the 12 correlations being positive and eight being statistically significant. As implied by a circumplex structure, the mean correlation was lower for non-adjacent value pairs that were once removed from each other (.064) and only three of these 11 correlations were significant. In addition, correlations between adjacent values parcels within a value type were all statistically significant and tended to be higher ( $M = .22$ ) than for the correlations between adjacent values that fell into different value types ( $M = .02$ ). Given these initial results, the implicit value parcels demonstrated relationships that were fairly consistent with a circumplex structure. Therefore, it seemed reasonable to proceed to create latent variables representing Schwartz's (1992) higher-order value types using the item parcel scores as measured indicators, to determine whether it made sense to aggregate the lower level values into higher-order value constructs.

Figure 2 presents the standardized estimates of the factor loadings and the correlations among the latent constructs for a higher-order values measurement model. The factor loadings ranged in value from .29 to .75, and all were statistically significant at  $p < .05$ . As desired, the goodness-fit-statistic for the overall model was not significant,  $\chi^2(24) = 18.22, p = .79$ , and multiple fit indexes indicated that the model fit well,  $CFI = 1.0, RMSEA = .01, SRMR = .04$ . As shown in Figure 2, correlations among the three higher-order value latent variables were modest, and only the relationship between self-transcendence and conservation values was statistically significant,  $r = .47$ .

Table 1 presents the means, standard deviations, and inter-correlations of the measured variables. For this table and subsequent analyses, a composite score was constructed for each of the three higher-order implicit values by summing the relevant item parcel scores. As can also be seen in this table, the higher-order implicit value measures had very low correlations with their

explicit value counterparts: (a) self-enhancement,  $r = .09$ ; (b) self-transcendence,  $r = .08$ ; (c) conservation,  $r = -.21$ , suggesting that the implicit and explicit measures were not redundant, making this a desirable outcome.

### **Values with Moral Behaviors**

Roughly half of participants peeked at an answer (45%) and a smaller percent over-reported the number of problems they had correctly solved (10.5%). The number of times peeking occurred for a given participant ranged from 0 to 14, and the extent of over-reporting for a given participant ranged from 0 to 11, with only a small minority of participants peeking extensively. This pattern of results, with many participants having zero values for peeking or over-reporting, while a few had positive integer values (i.e., counts), drove our choice of the ZIP model as an appropriate analytic procedure.

For example, consider the pattern of our observed data shown in the scatterplot of Figure 3. This figure illustrates the problems that might be encountered in predicting unethical behavior, such as peeking, from a measure of values. The x-axis represents explicit conservation values, and the y-axis (labeled “peeking”) is a count of the number of times that a participant peeked at the correct answer. As can be seen, there are many dots along the x-axis at peeking = 0. Many of these zero peeking values could potentially result from participants who would not peek, whatever the circumstance. However, there is also a noticeable positive relationship between the explicit conservation scores and the amount of peeking, suggesting that for at least some people, as conservation values increase, so does peeking. The ZIP analysis (Long & Freese, 2006) allows one to independently estimate both: (a) logistic parameters for the implicit or explicit value predictors that indicate whether the value influences the probability of being a member of the “non-peeking” group; and (b) poisson (count) parameters for the implicit or explicit values

predictors of the extent of peeking for members of the “cheating” group (members of this group can potentially also have zero values). An analysis that doesn’t allow one to separate members of these two (latent) groups and independently model the two processes would not accurately model the effects of values on cheating.

The ZIP analysis results for predicting the two unethical behaviors of peeking and over-reporting from implicit and explicit values are shown in Table 2. Results for predicting the likelihood of belonging in the normative, non-cheating group are listed under the “Logistic Parameters” headings in Table 2. Positive values for these parameter estimates indicate as the value of a predictor increases, membership in the normative, non-cheating group becomes more likely, whereas negative parameter estimates indicate that as the value of the predictor increases, membership in the cheating group is more likely. Results showing the relationship of values to a *count* of peeks or over-reports are listed under the “Count Parameters” headings in Table 2.

**Self-enhancement values.** The models in the top section of Table 2 addressed Hypothesis 1, which proposed that explicit (1a) and implicit (1b) *self-enhancement values* would positively predict peeking and over-reporting. As shown in the peeking results reported in the left-hand columns of this section of the table, none of the two logistic parameters (i.e., explicit or implicit self-enhancement values) was statistically significant. This suggests that these variables do not influence the probability of being a member of the “non-peeking” group. However, the count parameters for both explicit ( $B = .096$ ) and implicit ( $B = -.115$ ) self-enhancement values were statistically significant. Consistent with Hypothesis 1a, results indicate that for a one-unit increase in explicit values, the expected number of peeks increased by a factor of 1.10 (calculated as  $e^B$ ). However, although statistically significant, the direction of the result for implicit self-enhancement values was opposite to Hypothesis 1b, indicating that a one-unit

increase in implicit values was associated with a decrease in the expected number of peeks by a factor of .89.

The results for over-reporting shown in the right-hand columns of the top section of Table 2 indicate statistically significant logistic effects for explicit self-enhancement values ( $B = -.371$ ). The negative sign of the explicit self-enhancement values coefficient indicates that a one-unit increase in values is associated with a decrease in the odds of being in the non-cheating group by a factor of .71, which is consistent with Hypothesis 1a. For the count parameters, explicit self-enhancement values were negatively related to the extent of over-reporting ( $B = -.407$ ), specifically, a one-unit increase in explicit self-enhancement values was associated with a decrease in the expected amount of over-reporting by a factor of .66, which is opposite from the predicted direction. These results also illustrate that the sign of a parameter estimate has opposite meanings for the logistic and count parameters. We expected self-enhancement values to be positively related to cheating, which would be indicated by a positive sign for the count parameter; but self-enhancement values should have a negative sign for the logistic parameter because positive values for the logistic function are associated with increased odds of being in the non-cheating group.

**Conservation values.** The models in the middle section of Table 2 addressed Hypothesis 2, which proposed that higher levels of explicit (2a) and implicit (2b) *conservation values* would be associated with reduced peeking and over-reporting. The only significant logistic parameter in the prediction of peeking was for implicit conservation values ( $B = -.100$ ). Contrary to expectations from Hypothesis 2a, results indicate that for a one-unit increase in implicit conservation values, the expected odds of being in the non-peeking group decreased by a factor of .90. Results for the count parameter were also opposite to Hypothesis 2a, as explicit

conservation values were positively related to peeking ( $B = .114$ ), indicating that for a one-unit increase in explicit values, the expected number of peeks increased by a factor of 1.12.

Hypothesis 2b was not supported as implicit conservation values were unrelated to the amount of peeking.

For the prediction of over-reporting, Table 2 logistic results show that explicit ( $B = -.408$ ) conservation values were negatively related to being in the non-over-reporting group, with respective expected odds decreases being .66 for every one-unit increase in conservation values. These results are opposite to the predicted directions for Hypotheses 2a. However, for the count variable, implicit conservation values showed the predicted negative relation to over-reporting ( $B = -.245$ ), indicating that a one-unit increase in conservation values was associated with an expected decrease in the amount of over-reporting by a factor of .78.

**Self-transcendence values.** Although no hypothesis was made relating *self-transcendence values* to either the peeking or over-reporting measures, exploratory results are reported in the bottom third of Table 2. None of the logistic parameters for peeking were statistically significant. However, the count parameter for explicit self-transcendence values was significant,  $B = .128$ , indicating that for a one-unit increase in explicit self-transcendence values, the expected amount of peaking increased by a factor of 1.14. For over-reporting, the logistic parameter for explicit self-transcendence values was significant,  $B = -.325$ , indicating that a one-unit increase in self-transcendence values decreased the odds of being in the non-cheating group by a factor of .72. Both count parameters were statistically significant for over-reporting. For both explicit ( $B = -.305$ ) and implicit ( $B = -.188$ ) self-transcendence values, the expected amount of over-reporting decreased by factors of .74 and .83, respectively for every one-unit increase in this value.



In sum, both explicit and implicit values significantly predicted select logistic and count components of the ZIP analysis. Although there was variability across the three value types, the general pattern for logistic parameters was consistent: all four significant parameters for values (three for explicit values, one for implicit values) had negative signs. This pattern of results indicates that as values were more strongly endorsed or became more accessible, membership in the non-cheating group *decreased*. This result was supportive of the hypothesized direction for self-enhancement values but not for conservation values. Results predicting the count component of the ZIP analysis showed strong support for explicit values effects, with five of the six parameters being significant. In separate models, all three explicit values types were positively related to expected amount of peeking. For over-reporting, explicit self-enhancement and self-transcendence values showed negative relations. For implicit values, relations were negative for both peeking (self-enhancement values were significant) and over-reporting (conservation and self-transcendent values were significant).

### **Moderating Role of Self-Identity**

Given the close correspondence between values and identities (Lord & Brown, 2001; Lord et al., 2005), and the literature demonstrating that identities moderate the relation of values to behavior (Verplanken & Holland, 2002), we examined the interaction of self-reported identity with values in predicting moral behavior. Because this aspect of our research was exploratory, we will briefly highlight key findings. More complete analyses can be obtained from the first author. First, we centered both the values (implicit and explicit) and self-reported identity measures, as well as created a product term to reflect the appropriate interaction (e.g., self-enhancement values x individual identities, self-transcendence values x relational identity, and conservation value x collective identity). Then we repeated the ZIP analyses in Table 2 including

the relevant main and interaction effects. We found only suggestive evidence for the interaction of relational or individual identities with its corresponding values, as indicated by a few marginally significant interactions. However, the interaction between conservation values and collective identity was strong and consistent. As shown in Table 3, collective identity moderated the effects of both explicit and implicit values in predicting both peeking and over-reporting behaviors. (We estimated the explicit value interaction using the mean for implicit values and vice versa). Figure 4 shows the patterns of these interactions for values one SD above or below the mean for both collective identity and conservation values in predicting counts of peeking and over-reporting. The expected counts reflect both the parameter estimates for the collective identity and conservation values shown in Table 3 for the count analysis, and a weighting by the probability of being in the “not always zero group” based on the logit analysis. As one would expect based on Verplanken and Holland’s (2002) research, the expected effects of explicit values were clearly strongest for the high collective identity subjects. For implicit values, a very different pattern was evident – identity did not create dramatic moderating effects for the peeking task. For the over-reporting task, identity was again a strong moderator, but high over-reporting occurred with low rather than high implicit conservation values coupled with low collective identity.

### **Discussion**

Although a great deal of attention has focused on the importance of values over the past decades, there was little knowledge of how values influence ethical decision-making and moral behavior. Additionally, no prior research has examined differences in predicting moral behavior when values were assessed at both conscious and non-conscious levels. This state of the extant literature was surprising given that values appear to be influential determinants of social

behavior. To help fill this gap, the current study developed implicit value measures to predict actual moral behavior in a laboratory setting. It also adopted an integrative approach to investigating dual processing theories of ethical behavior by examining the effects of implicit and explicit values on cheating behavior with a ZIP analysis allowing simultaneous prediction of two qualitatively different processes (Lambert, 1992).

This study contributes to the literature in several ways. First, we were able to build on Bardi et al.'s (2008) value lexicon by developing our own implicit measure of values. Because Bardi et al.'s value lexicon was based on an extensive analysis of written text from numerous archives, using their lexicon helped ensure that our measure was content valid. In addition, our initial analysis of the pattern of correlations among implicit values provided support both for a circumplex model and for higher correlations of values within each value type. This agrees with the extensive work of Schwartz and colleagues (Bardi et al., 2008; Bardi & Schwartz, 2003; Schwartz, 1992). Equally important, we obtained good measurement model when we aggregated value parcels to create value-type measures. Along with encouraging pilot study results, these findings indicate that this approach to measuring implicit values is reasonable.

Second, consistent with dual-process models of ethical behavior, both explicit and implicit values predicted cheating (peeking and over-reporting) that occurred on a competitive anagram task. However, for peeking, the observed significant effects were generally opposite in sign to the hypothesized direction. All three explicit values types exhibited positive associations with the amount of peeking, but the positive direction was only as predicted for self-enhancement values. Further, implicit self-enhancement values exhibited a significant negative association with amount of peeking rather than the predicted positive relationship. Amount of

over-reporting showed significant negative relations to both explicit and implicit values. This was contrary to prediction for self-enhancement values but consistent for conservation values.

The different pattern of results for the peeking and over-reporting measures suggests that they involved two different types of unethical behaviors. Indeed, engaging in these two activities had a low correlation ( $r(181) = .06, p > .40$ ). One difference between them may be the level of risk involved for each behavior. For over-reporting, participants believed that their final performance score could not be verified by the experimenter, suggesting the risk of detection was quite low. Furthermore, the opportunity to over-report occurred just prior to leaving the experimental lab. However, peeking at the answers was riskier because it required repeated unethical behavior during the task. Overall, explicit value measures better predicted peeking, as all explicit value measures positively related to the amount of peeking, whereas only implicit self-enhancement values predicted peeking. Results were more balanced for over-reporting, which was significantly related to two explicit and two implicit values. Implicit self-transcendence and implicit conservation values predicted this unethical behavior in directions consistent with hypotheses. In contrast, explicit self-enhancement predicted this measure in a direction that was inconsistent with hypotheses.

A third contribution is that we showed that conservation values and collective identities interacted in predicting cheating behavior. These results were consistent with Verplanken and Holland's (2002) argument that values would have the greatest effects if they were central to one's identity. These results are also consistent with recent work on self-regulation, which argues that identities create an over-arching framework for self-regulation (Lord, Diefendorff, Schmidt, & Hall, 2010) that organizes and constrains motivational, cognitive, and affective processes to shape emerging goals and behaviors. Accordingly, our results suggest that strong

collective identities may create networks of constraints that facilitate the activation of conservation values more than weak collective identities, enhancing the potential of values to activate associated goals and behaviors.

### **Theoretical Implications**

Consistent with Schwartz's (1992) theory of values and recent empirical research demonstrating the relationship between values and social behavior (e.g., Bardi et al., 2008; Bardi & Schwartz, 2003), we found that values were influential in predicting moral behavior, but that the patterns of these findings across types of values and outcomes were complex. By using both implicit and explicit value measures, we predicted moral outcomes that have been primarily explored from more rational and deliberative information processing perspectives (e.g., Kohlberg, 1981; Rest, 1986; Rest et al., 1999). Importantly, implicit values added significant incremental variance in predicting actual moral behavior. Our findings present several theoretical implications.

First, we found low, non-significant correlations between explicit and implicit values, and these measures generally predicted different moral outcomes. Finding low correlations between explicit and implicit measures is consistent with prior research (e.g., Greenwald et al., 1998; McClelland et al., 1989) and suggests that these measures assess different underlying constructs. Indeed, our results indicated that some kinds of moral behavior (i.e., over-reporting) were predicted equally well by explicit and implicit value measures, whereas other moral behavior (i.e., peeking) was generally predicted better by explicit value measures. Dual processes theory maintains that more automatic and spontaneously-driven types of behaviors are better predicted by values when accessed implicitly. We believe that over-reporting reflects this one-time, spontaneous type of behavior. Repetitive peeking in an open room, however, seems to involve

more strategic and deliberative efforts in part due to its level of risk, and thus, was better predicted by explicit measures.

In addition, we showed that ZIP analyses, which can predict the likelihood of behaving in normatively appropriate ways versus the extent of engaging in unethical conduct, were useful as these two types of acts seemed to involve qualitatively different states and underlying processes. Whereas behaving honestly may reflect habitual or normative tendencies that operate using automatic processes (Greene & Paxton, 2009), unethical behavior may involve a different kind of underlying process that involves stronger value activation, and results in greater deviation from normative tendencies. Interestingly, results for the logistic parameter estimates showed that all significant implicit and explicit values were negatively associated with membership in the non-cheating group. Although this appears contrary to conventional wisdom that suggests honest behavior reflects underlying values, it may be that honest behavior is habitual and reflects an outward, situational orientation (e.g., being a good subject). Instead, basing behavior on internal values was associated with likely membership in the cheating, rather than the non-cheating group; yet given membership in this group, the amount of over-reporting was negatively related to both explicit and implicit values, whereas the amount of peeking was positively related to all three explicit values.

Although speculative, these results suggest that the direction in which values influence moral decision making and behavior may hinge upon the context or the nature of a particular task at hand. This perspective is consistent with arguments presented by Rai and Fiske (2011) who emphasize that moral (or immoral) actions should not be understood independent of context. In fact, it is important to acknowledge that although complying with situational norms rather than internal values was associated with a lower probability of being in the non-cheating group,

history is replete with instances where conformity and unquestioning deference to authority resulted in moral atrocities (e.g., WWII, Nazi leaders). Similarly, values that prioritize the well-being of others can lead to the sanctioning of unethical practices when such values are narrowly directed towards in-group members (e.g., ethnic segregation; see Rai & Fiske, 2011).

Consequently, whether values result in positive moral outcomes, such as ethical decisions and behaviors, must be understood within the social context (Rai & Fiske, 2011). Yet this understanding needs to account for the distinction between situational norms and internal values, and likewise between automatic and more deliberate decision processes.

Last, the results of our exploratory analysis of the interactive effects of identity and values help elucidate when values are important predictors of moral behaviors. Consistent with the theoretical arguments presented by Verplanken and Holland (2002), values may influence behavior when they are particularly central to the self, as we found foremost for explicit values and explicit ratings of collective identities. In addition, this perspective also implies that values may not have constant effects in directing behavior; rather, different values may influence behavior according to which aspect of the self is salient, and this may vary at different points in time or in different social or organizational contexts.

Most of interaction results presented in Figure 4 indicate cheating is higher when collective identities and conservation values are both high. This is a curious finding because high conservation values should promote conformity to group norms and norms have greater impact under collective identities. Why should such a normative orientation be associated with greater cheating? One discouraging possibility is that student norms favor cheating to benefit oneself. Another more interesting possibility stems from the often replicated finding of the false consensus effect (Dunning, 2003) in which one sees the self as being more similar to others than

is actually the case. Such thinking could lead participants to reason that if they considered cheating, others are also likely to cheat; and when this possibility is coupled with an orientation toward normative behavior, it could generalize to believing that cheating would be the norm in a competitive task and therefore cheating would be alright, even when actual social norms did not support cheating. Interestingly, such reasoning might generalize to many other situations – cheating in business, politics, or sports--with the critical factor being the belief that one's own propensities are normative, coupled with a reliance on social norms to guide behavior. People who normally see themselves as moral may, under conditions of stress, or fear, or competitiveness, consider unethical acts; and considering such unethical action may trigger a false belief that others would act similarly, precipitating unethical behavior.

Thus, we suggest future ethical research should consider the potential for false consensus effects along with the effects of values and identities. Indeed, this type of reasoning also could work in the opposite direction and support non-cheating and the belief that no others would cheat. If correct, such false-consensus effects coupled with values and identities which support normative behavior, could help explain why social processes such as leadership are important to explicitly define what is moral and how others are expected to behave in a particular context, as stressed by Brown and Treviño (2006).

### **Practical Implications**

The results of this study have noteworthy implications for organizations and future research on ethics and morality. Particularly relevant to organizations is that unethical behavior, such as dishonesty or cheating, can be predicted by values. The ability to predict unethical behavior is important when we consider that maintaining employee ethical conduct is essential to organizational efficiency and success (Dunlop & Lee, 2004; Skarlicki, van Jaarsveld, & Walker,



2008) as it bears on employee theft (Bourke, 1994), and other ‘hidden’ costs from unethical employee practices. For instance, the development of an unethical climate that perpetuates employee sabotage, corruption, or fraud, can decrease an organization’s efficiency (Ashforth, Gioia, Robinson, & Treviño, 2008). Thus, the ability to identify and predict unethical behavioral tendencies among employees is crucial to both an organization’s viability and reputation.

One interpretation of the results from the logistic component of our ZIP analyses is that membership in the non-cheating group might be more dependent on automatic, situationally-cued norms, such as being an honest subject, than on participant’s values. This interpretation needs to be verified in organizational contexts, where the nature of behavioral processes is also assessed. If replicated, this result suggests that organizations might benefit from developing strong situational norms for ethical behavior which could elicit automatic ethical responses rather than more deliberate ethical choices often discussed by ethical theory (e.g., Jones, 1991; Kohlberg, 1981; Rest, 1986). Consistent with this view, organizational leaders may play a particularly important role in establishing ethical cultures (Schaubroeck, Hannah, Avolio, Kozlowski, Lord, Treviño, Dimotakis, & Peng, in press), which may then automatically elicit ethical behavior. However, such automatic compliance with ethical norms doesn’t obviate the need for leaders to emphasize ethical values as well. Research shows that automatic behavior may be easily disrupted (Neal, Wood, Wu, & Kurlander, 2011), and if that happens, both implicit and explicit personal values may be an important determinant of ethical behavior as our ZIP analysis showed.

A particularly striking result of our analysis of unethical behavior is the strong relation of explicit conservation values to peeking behavior and implicit conservation values to over-reporting, once we accounted for the over-dispersion due to subjects who didn’t cheat at all by

using the ZIP analysis. The strength of these results may stem from the fact that we used the participants' own values to predict their voluntary behavior. These results show the utility of using values to understand how ethically one behaves once they have shifted out of automatic norm compliance mode. They also illustrate the value of a theoretical approach based on dual processing when coupled with an analytic technique that can separate different types of underlying processes. Moreover, as shown in Figure 4, conservation values had their greatest effects when coupled with collective identities. These results indicated that for organizations to influence ethical behaviors, it may be necessary to influence both identities and values, whether explicit or implicit.

The utility of implicit value measures is especially apparent when we also consider that explicit measures are susceptible to response management as individuals try to appear more favorable (Fazio & Olson, 2003; Greenwald et al., 1995). The three higher-order explicit values measures in our study inter-correlated relatively strongly, with  $r$ 's ranging from .51 to .68, while the implicit values measures had much lower inter-correlations ranging from .10 to .32. Although we cannot test this idea with our present data, one wonders whether the higher inter-correlations among the explicit measures are in part due to social desirability responding. In addition, although organizations typically rely on surveys and other self-reported measures of morality (Crane, 1999; Randall & Gibson, 1990), explicit, self-report measures may also be limited because they cannot assess the more intuitive aspects of morality (Reynolds, 2006).

Currently, there are several different types of implicit measures that might be adapted to predict morality. Reynolds et al. (2010), for instance, have adapted the IAT to predict ethical decision making. Although measures like the IAT are useful options, our work shows that paper-and-pencil word fragment measures are also effective in measuring implicit values and

predicting moral behavior. Word fragment measures may be particularly valuable to practitioners and researchers as a practical, cost-effective tool within organizations, as well as for conducting research on moral decision making and behavior in field settings.

Finally, our implicit and explicit value measures assessed broad values that did not specifically focus on cheating behavior. Therefore, it is especially notable that the implicit and explicit values employed in this study were able to predict such a specific moral behavior, particularly as research has shown that measures predict behavior best when their content is also specific and narrowly defined (Ajzen & Fishbein, 1977; Hough & Furnham, 2003). Extending this logic, our value measures may predict a wide range of other specific prosocial or antagonistic behaviors that are related to a particular general value (Hill & Roberts, 2010).

### **Limitations and Future Research**

As with any empirical work, there are several limitations with our study. One limitation is that the relation of values to ethical behavior was assessed in a cross-sectional design, making the causal direction unclear. Although we theorized that values cause ethical behavior, it is also possible that ethical behavior primed the report of specific values, or that context primed both values and ethical behavior. As well as refining theory specifying how values translate into behavior, future research might benefit from experimentally manipulating values and examining the effect on moral behavior.

Future research should also examine values as part of a system of mental constructs which include self-identities (Verplanken & Holland, 2002), attitudes, and situational norms. Although both implicit and explicit value measures were predictive of cheating behavior, future research should explore whether the temporal stability in predicting moral behaviors differs between the two measures. Because implicit values may be more central to the self-concept

(Verplanken & Holland, 2002), the choices and behaviors that are predicted by implicit values may reflect habitual responses that occur more trans-situationally than behaviors associated with more explicit values. In this study, implicit values may have predicted habitual cheaters, whereas explicit value measures may have predicted cheating by those who were lured by the monetary incentives in the task. We believe that longitudinal studies can explore how implicit versus explicit values predict ethical behaviors over time.

Future research should also explore whether values predict a more diverse range of ethical or unethical behavior. Although we only considered misconduct (i.e., cheating behavior) in this study, it would be interesting to see if values generalize in predicting other moral behaviors (e.g., altruism) or other types of deviant behaviors (e.g., sabotage, stealing). We believe that a step in this direction is important considering that a large proportion of research on moral judgment has relied on moral vignettes.

In regards to our implicit values measure, we note that the word fragments for power and benevolence had relatively low factor loadings. This could reflect the difficulty of solving the word fragments for these particular values. Therefore, future research can explore alternative words or word fragment arrangements to improve these value measures. In a similar vein, future research can also explore the use of implicit word fragments to measure constructs other than values to predict moral outcomes. For instance, Gino, Schweitzer, Mead, and Ariely (2011) utilized a word fragments to measure the accessibility of moral awareness.

In summary, we believe that this study helps to expand the current understanding of factors driving moral decision making and behavior in at least three ways. First, values may be important in predicting moral behavior. However, their role appears to be much more complex than social discourse often contends. Second, implicit as well as explicit values are important

determinants of ethical outcomes. Third, we show that values often have an effect on behavior that is contingent on the nature of active identities. Despite its limitations, this study demonstrates new and important means to examine moral decision making and ethical behavior in a way that informs organizational practice as well as advances relevant theory.

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Figure 1. Theoretical Circumplex Structure of Values from Schwartz (1992)

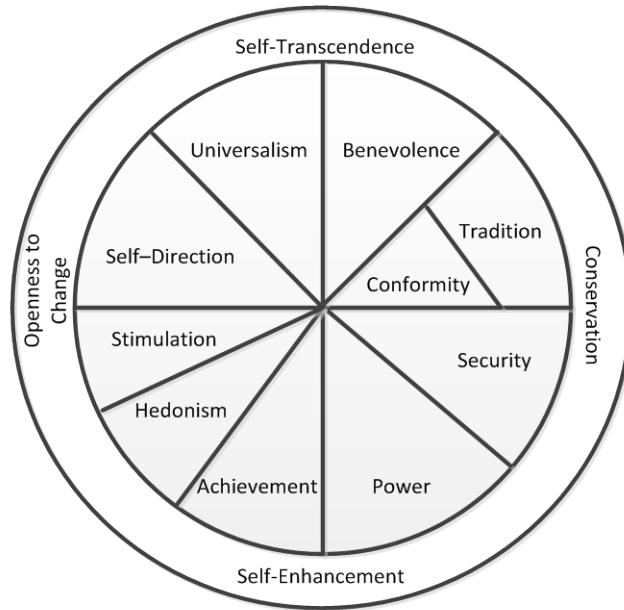


Figure 2. Higher-order implicit values measurement model, showing latent constructs and lower-order value item parcel indicators (related word fragments are listed in boxes), with standardized factor loadings and covariances. All factor loadings are statistically significant at  $p < .05$ , but the only significant factor intercorrelation is between self-transcendence and conservation.

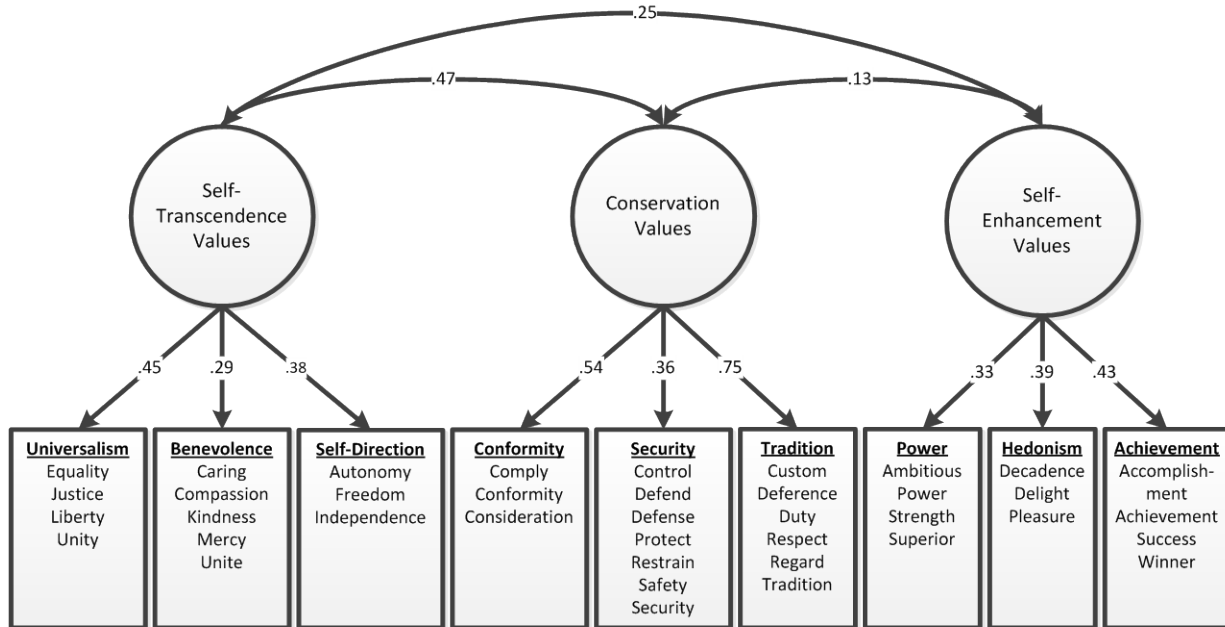


Figure 3. Scatterplot of peeking across explicit conservation value scores, showing mixed nature of sample

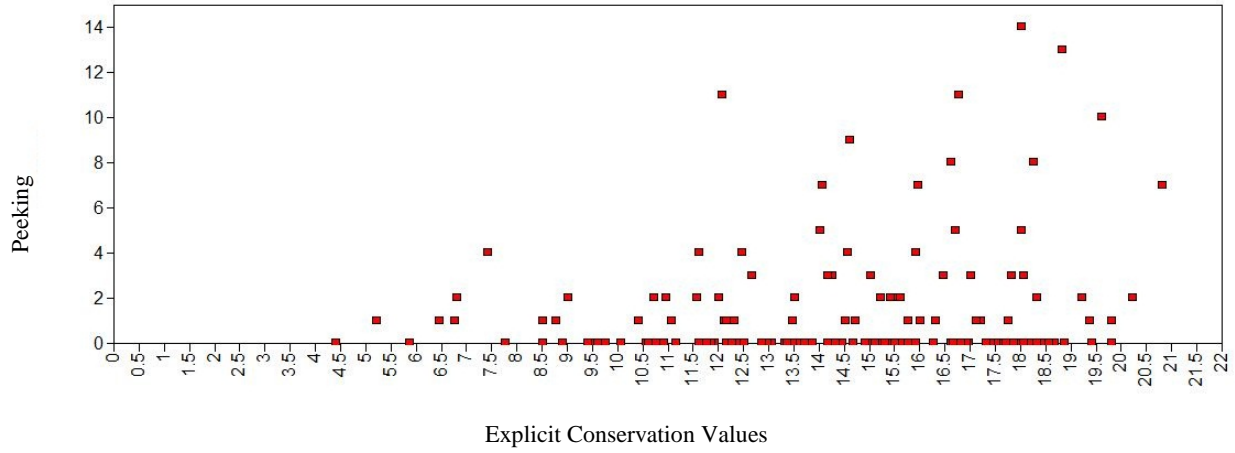


Figure 4. Interaction of Explicit Collective Identity with Implicit or Explicit Conservation Values in the Prediction of Peeking or Over-reporting Behavior

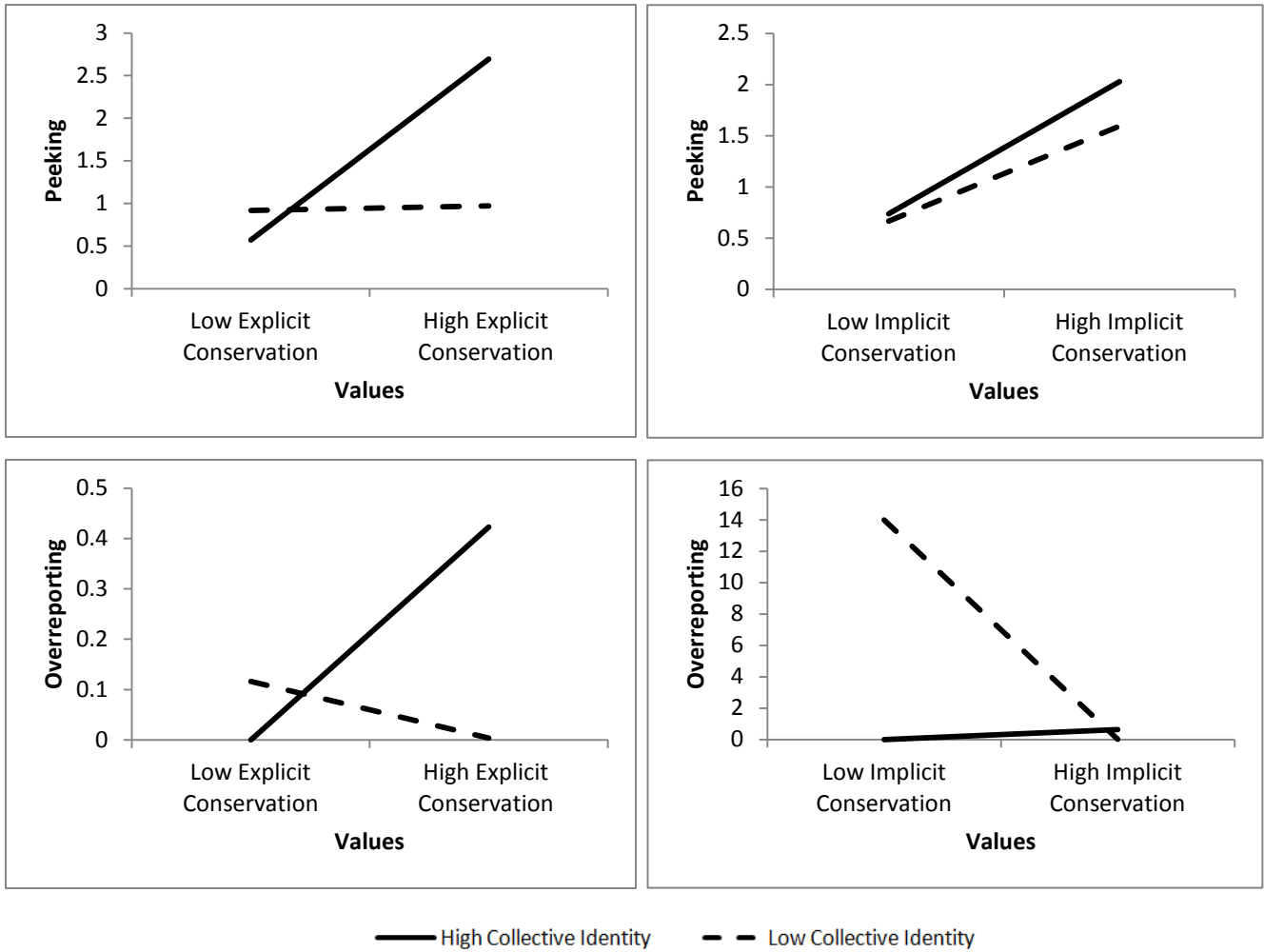


Table 1. Means, Standard Deviations, and Correlations for Focal Study Variables

	M	SD	1	2	3	4	5	6	7	8
Explicit Values										
1. Self-Enhancement	4.50	1.14								
2. Self-Transcendence	5.10	.98	.54*							
3. Conservation	4.56	1.24	.71*	.51*						
Implicit Values										
4. Self-Enhancement	-.16	1.18	.09	-.05	.05					
5. Self-Transcendence	-.12	.98	-.10	.08	-.07	.07				
6. Conservation	-.32	1.33	-.05	-.00	-.21*	.05	.27*			
Unethical Behaviors										
7. Peeking at answer	1.47	2.65	.16 <sup>+</sup>	.19 <sup>+</sup>	.21 <sup>+</sup>	-.16 <sup>+</sup>	-.02	.10	-.01	
8. Over-reporting score	.26	1.26	.00	-.05	.08	.00	-.12	-.16 <sup>+</sup>	.22 <sup>+</sup>	-.03

Note. N's vary from 117 to 170.

<sup>+</sup>p < .10. \* p < .05.

*Table 2. Zero-Inflated Poisson Regression Predicting Ethical Behaviors (Peeking and Over-reporting) from Explicit and Implicit Self-enhancement, Conservation, and Self-transcendence Values*

Predictors	Dependent Variables					
	Peeking			Over-Reporting		
	<i>B</i>	( <i>SE<sub>B</sub></i> )	<i>e<sup>B</sup></i>	<i>B</i>	( <i>SE<sub>B</sub></i> )	<i>e<sup>B</sup></i>
<i>Self-Enhancement Values Model</i>						
Logistic Parameters:						
Intercept	-.007	(.788)		7.215*	(2.313)	
Explicit Self-Enhancement Values	.009	(.054)	1.00	-.371*	(.169)	.71
Implicit Self-Enhancement Values	-.015	(.066)	.98	.062	(.088)	1.07
Count Parameters:						
Intercept	-.297	(.440)		6.611*	(1.56)	
Explicit Self-Enhancement Values	.096*	(.029)	1.10	-.407*	(.115)	.66
Implicit Self-Enhancement Values	-.115*	(.038)	.89	-.082	(.152)	1.18
<i>Conservation Values Model</i>						
Logistic Parameters:						
Intercept	.453	(.847)		7.891*	(2.76)	
Explicit Conservation Values	-.032	(.057)	.97	-.408*	(.190)	.66
Implicit Conservation Values	-.100*	(.049)	.90	-.188	(.146)	.83
Count Parameters:						
Intercept	-.543	(.556)		3.909	(.513)	
Explicit Conservation Values	.114*	(.036)	1.12	-.168	(.112)	.84
Implicit Conservation Values	.019	(.023)	1.02	-.245*	(.028)	.78
<i>Self-Transcendence Values Model</i>						
Logistic Parameters:						
Intercept	1.076	(.998)		5.506*	(2.161)	
Explicit Self-Transcendence Values	-.089	(.094)	.91	-.325*	(.205)	.72
Implicit Self-Transcendence Values	-.006	(.059)	.99	-.145	(.137)	.86
Count Parameters:						

Predictors	Dependent Variables					
	Peeking			Over-Reporting		
	<i>B</i>	( <i>SE<sub>B</sub></i> )	<i>e<sup>B</sup></i>	<i>B</i>	( <i>SE<sub>B</sub></i> )	<i>e<sup>B</sup></i>
Intercept	-.195	(.661)		4.002*	(.602)	
Explicit Self-Transcendence Values	.128*	(.061)	1.14	-.305*	(.081)	.74
Implicit Self-Transcendence Values	-.022	(.040)	.98	-.188*	(.046)	.83

*Note.* *N* = 150. *SE* = Standard error. Logistic parameters predict likelihood of being a member of the non-cheating group. Count parameters predict the number of peeking or over-reporting behaviors for persons who could potentially cheat.

<sup>+</sup>*p* < .10. \* *p* < .05.

Table 3. Self-Reported Identity x Explicit and Implicit Value Measures

Predictors	Dependent Variables					
	Peeking			Over-Reporting		
	<i>B</i>	( <i>SE<sub>B</sub></i> )	<i>e<sup>B</sup></i>	<i>B</i>	( <i>SE<sub>B</sub></i> )	<i>e<sup>B</sup></i>
<i>Conservation Values Model</i>						
Logistic Parameters:						
Intercept	.083	.210		5.731	3.696	
Explicit Collective Identity	-.046	.048	.95	1.05	1.11	1.86
Explicit Conservation Values	-.010	.061	.99	-1.38	1.15	.87
Implicit Conservation Values	-.102 <sup>+</sup>	.053	.90	-1.11	1.03	.33
Explicit Collective Identity x Implicit Conservation Values	.005	.012	1.00	-.470	.418	.62
Count Parameters:						
Intercept	.819	.133		2.201	.353	
Explicit Collective Identity	.007	.030	1.01	.553**	.128	1.74
Explicit Conservation Values	.112*	.037	1.12	-.521**	.140	.59
Implicit Conservation Values	.048 <sup>+</sup>	.029	1.05	-.620**	.140	.54
Explicit Collective Identity x Implicit Conservation Values	.023**	.005	1.02	-.242**	.048	.78
Explicit Collective Identity x Explicit Conservation Values	.009*	.004	1.01	-.141**	.037	.87

Note. *N* = 150. *SE* = Standard error. Logistic parameters predict likelihood of being a member of the non-cheating group. Count parameters predict the number of peeking or over-reporting behaviors for persons who could potentially cheat.

<sup>+</sup>*p* < .10. \* *p* < .05



*Appendix A. Word Fragment Measure for Implicit Values (with Word Frequency from English Lexicon Project database, Balota et al., 2007)*

Word Fragment	Target	Neutral	Word Fragment	Target	Neutral
<i>Universalism-Related Word Fragments</i>			<i>Power-Related Word Fragments</i>		
E Q U A _ _ _ _	Equality (8.57)	Equation (8.91)	A M B I _ _ O U S	Ambition (7.49)	Ambiguous (7.83)
J U S T _ _ _	Justice (10.36)	Justify (9.25)	_ O W E R	Power (12.14)	Lower (10.81)
L I B _ _ _ Y	Liberty (9.75)	Library (11.63)	S T R _ N G _ _	Strength (10.15)	Stranger (8.59)
UNIT_	Unity (8.56)	Units (10.14)	_ _ _ E R I O R	Superior (9.86)	Inferior (8.61)
<i>Security-Related Word Fragments</i>			<i>Achievement-Related Word Fragments</i>		
C_NTR_L	Control (11.93)	Central (10.66)	A C _ _ _ _ L _ _ _ M E N T	Accomplishment (7.17)	Acknowledgement (6.85)
D E _ E N D	Defend (9.63)	Depend (9.26)	A _ _ _ _ _ E M E N T	Achievement (8.27)	Arrangement (8.83)
_ _ _ E N S E	Defense (10.35)	Expense (9.26)	_ _ _ C E S S	Success (10.52)	Process (11.50)
P R O _ E C T	Protect (10.28)	Project (11.40)	_ I N N E R	Winner (9.34)	Dinner (9.47)
RESTR_ _ _ _	Restrain (7.74)	Restroom (-)			
S A _ _ T Y	Safety (10.07)	Sanity (7.89)			
S E _ _ R I T Y	Security (11.04)	Severity (7.22)			
<i>Hedonism-Related Word Fragments</i>			<i>Self-Direction-Related Word Fragments</i>		
D E _ _ _ D E N C E	Decadence (5.85)	Deference (5.75)	A U T O _ _ _ _	Autonomy (7.75)	Automate (7.74)
_ _ L I G H T	Delight (8.08)	Enlight (8.04)	_ _ _ _ D O M	Freedom (10.71)	Kingdom (9.56)
_ _ _ U R Y	Luxury (8.15)	-	I N _ E _ _ _ _ E N C E	Independence (9.08)	Intelligence (10.19)
<i>Benevolence-Related Word Fragments</i>			<i>Tradition-Related Word Fragments</i>		

Word Fragment	Target	Neutral	Word Fragment	Target	Neutral
_ ARING	Caring (8.50)	Daring (7.32)	C _ S T _ _	Custom (9.81)	Costly (7.99)
C O M _ _ S S I O N	Compassion (8.27)	Commission (9.90)	_ E F E R E N C E	Deference (5.71)	Reference (11.01)
_ I N D _ E S S	Kindness (7.73)	Mindless (7.89)	D _ _ Y	Duty (9.16)	Duly (6.93)
M E R _ Y	Mercy (8.69)	Merry (7.54)	_ E _ A R D	Regard (9.65)	Reward (8.86)
U N _ _ E	Unite (7.74)	Untie (6.74)	_ _ S P E C T	Respect (10.54)	Inspect (7.37)
			_ _ _ D I T I O N	Tradition (9.53)	Condition (11.15)
			<i>Conformity-Related Word Fragments</i>		
			C O M _ _ _	Comply (8.02)	Comedy (8.84)
			C _ N F _ R M	Conform (8.11)	Confirm (9.2)
			C O N _ _ _ _ _ A T I O N	Consideration (9.92)	Concentration (8.92)