MORAL IDENTITY AND THE VIRTUOUS CIRCLE OF SELF-CONTROL

by

TUVANA RUA

A dissertation to the Graduate Faculty in Business in partial fulfillment of the requirements for the Degree of Philosophy, The City University of New York.

2013

This manuscript has been read and accepted for the

Graduate Faculty in Business satisfaction of the

dissertation requirement for the degree of Doctor of Philosophy

Mary C. Kern, PhD

Date

Chair of Examining Committee

Joseph Weintrop, PhD

Date

Executive Officer

Cynthia Thompson, PhD

Donald Schepers, PhD

Dolly Chugh, PhD

Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

MORAL IDENTITY AND THE VIRTUOUS CIRCLE OF SELF-CONTROL

by

TUVANA RUA

Advisor: Mary C. Kern, PhD.

The existing literature in ethical decision making indicates that moral identity (how central morality is within one's identity) not only leads to the motivation to be ethical but also generates ethical decisions and behaviors. Although moral identity explains the will to be ethical, the current literature falls short in explaining how and when the will to be ethical leads to the ethical behavior and when and why it fails to do so. Therefore, the purpose of this research is to examine whether self-control (the capacity to override, interrupt, and alter one's responses and the capability to prohibit socially unacceptable/undesirable behaviors) is the mechanism that moral identity acts through to enable ethical behaviors. Two experimental studies were conducted to test whether self-control mediates the relationship between moral identity and ethical behavior and whether moral identity can influence ethical behavior in the absence of self-control resources. Results indicate that centrality of one's moral identity does not generate automatic ethical behaviors but rather a contested ethical decision making process, leading to first applied self-control then ethical behavior. In other words, applied self-control mediates the relationship between moral identity and ethical behavior. Results also show that these exercises of applied self-control generated by one's moral identity lead to an overall stronger self-control ability. Implications of the findings as well as directions for future research are discussed.

Acknowledgments

I dedicate this dissertation to my family who has been beyond supportive throughout the process that led to the creation of this work. I thank my mother Seba Altug and my sister Seda Altug, who selflessly dedicated themselves to help me during my PhD journey. My mother and my sister made probably the biggest sacrifice that any individual could make, and year after year, put their own lives on hold for me to realize my dream. They were there for me every step of the way, breathing and living the challenges I faced, supporting me, celebrating with me and lifting me up whenever I needed it the most. I will be forever in their debt for the wonderful gift they have given me. I also thank my father Ege Altug, who gave me continuous support from miles away and let my mother spend six months of the year in a different country so that I could realize a life-long dream. Finally, I would like to thank Seda and Liam Rua, my beautiful children. During the toughest times of this journey, these two little people managed to lift my spirits up and gave me the will continue with their unconditional love. They were more understanding than most adults would have been. I will never forget them tirelessly asking: "Does this mean we have our mommy back?" after every revision of this dissertation.

I would like to express my gratitude to my dissertation committee chair and advisor, Mary Kern, for her constant support during not only my dissertation but throughout the PhD program. I feel very lucky to be assigned to her as a research assistant in my first year as she helped me learn and grow in multiple ways. She has been a true mentor, and I am truly grateful to have her as my dissertation committee chair. This dissertation would not have been possible without her hours of laborious reviewing and editing and her valuable and timely feedback as well as her academic and psychological support throughout the toughest times. I especially thank her for believing in me and helping me make this happen.

I would like to thank my dissertation committee members Cynthia Thompson, Donald Schepers, and Dolly Chugh for their time, valuable feedback and support. It was a pleasure to learn from them and work with them. I would also like to thank Leanna Lawter and Jeanine Andreassi who have taken the time to review previous versions of this dissertation and provided me with valuable feedback.

I would like to thank Hannah Rothstein for believing in me and recommending me for the PhD program and for her support going forward. I also thank Joseph Weintrop for everything that he had done for me over the years I was in the program. I especially would like to thank him for his kindness and for helping me overcome many bureaucratic and personal hurdles. Somehow, he always managed to make me feel that everything would be alright, and I am grateful for that.

I also thank all the past and current management faculty members at the Zicklin School of Business. I particularly thank Edward Rogoff, Abraham Korman, Moshe Banai, Donald Vredenburgh, Richard Kopelman, Naomi Goldberg, Helaine Korn, Allan Kraut, Alvin Booke and Stephan Dilchert. I have learned tremendously from each and every one of them, and I thank them for making themselves available and sharing their experience and expertise with me.

I would like to also thank Keisha Peterson, Tyla Vidal, Leslie DeJesus and Linda Moore for the administrative support they provided during all these years. I specially thank Linda for listening and making me smile every time I stopped by her desk. I thank her for her sense of humor and for her motherly attitude towards all PhD students, even keeping a paper bag in her drawer for the possibility of hyper-ventilating PhD students during the comprehensive exams.

I would like to recognize the Phd students, Elif Selcuk, Bhavna Sharma, Ranie Lee, Wencang Zhou, Andy Chiou, and Zeynep Aytug, who shared this journey with me. I especially

thank Zeynep for her support during the dissertation phase despite working on her own dissertation, having two little children of her own and being in a different time zone.

I also thank Sue Kanuch and Joseph Beleznay for all the lojistic support they provided me during my dissertation. Without their help with room arrangements, I would not have been able to complete the data collection. Finally, I would like to thank Ellie Weinstein and Lawrence Weinstein, Mary Trefry, Robert Marsh, Steve Brown, Sean Heffron, Maura Capollo, Enda McGovern, Kwamie Dunbar, Barbara Tarasovich, Andra Gumbus, and Grace Guo for all the support and encouragement they gave me along the way.

The PhD journey, especially the dissertation phase, has been the biggest challenge of my life. Now, I truly understand the meaning of a conversation that I had with Abraham Korman right after I passed the first comprehensive exam. At the time he told me: "Seminars and the exams are the easy part…Dissertation is the real test because that is about endurance… Never forget: A good dissertation is a done dissertation!", and I am ecstatic to say, in Abraham Korman's terms, I finally have a good dissertation.

Table of Contents

List of Tables

List of Figures

List of Appendices

Moral Identity and the virtuous circle of self-control

Chapter 1

Introduction

"The behavior expected of an executive as an economic man often differs from what is expected of him as an ethical man" (Baumhart, 1961; p.163). Managers are responsible for making decisions to meet the organizational goals and expectations of the shareholders of organizations, and these decisions sometimes place managers in ethical dilemmas. Sometimes, other work related issues, such as receiving gifts from clients or subordinates, put the managers' moral reasoning to test. Given the variety and number of ethical decisions managers face in any given day, it is our responsibility to try to better understand the processes involved in ethical decision making. Therefore, this research examines the relationship between two variables that influence ethical decision making, namely moral identity (Aquino & Reed, 2002) and self-control (Muraven & Baumeister, 2000), and investigates how these two variables impact individuals' ethical behavior. More specifically, this research posits that self-control is the mechanism that moral identity acts through for individuals to act ethically in the face of ethically tempting situations. Moreover, with two studies, this research tests whether moral identity leads to improved self-control ability due to exercising the self-control muscle in the ethical domain.

Purpose of the Conducted Research

Moral identity is the extent an individual perceives morality as a central or essential characteristic of one's self (Blasi, 2004). Individuals who value morality and who perceive it as an important part of their identity try to be consistent with the image that they have of themselves as ethical individuals (Mazar, Amir, & Ariely, 2008), and accordingly they try to be more ethical in their decisions and actions (Shao, Aquino, & Freeman, 2008). Current theorizing

and research indicate that moral identity leads to ethical decisions and actions (Shao, Aquino, & Freeman, 2008); however, the current literature does not provide us with a mechanism that moral identity acts through to get from the motivation to be ethical to being ethical. The purpose of the research is to test whether self-control is that mechanism.

Self-control is defined as the capacity to override, interrupt, and alter one's responses and the capability to prohibit socially unacceptable/undesirable behaviors, which would otherwise interfere with goal directed behaviors (Baumesteir, Heatherton, & Tice, 1994; Finkenauer, Engels, & Baumeister, 2005; Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000). This ability is also considered to be one of the crucial characteristics for humans to function as social beings (Baumeister & Exline, 1999). Moral standards, which are formed as a result of a socialization process, outline the acceptable as well as expected set of behaviors that individuals are to display, and accordingly individuals employ self-control to meet these moral standards (Bandura, 1999). In fact, it has been argued that a behavior cannot be considered as ethical unless the individual purposefully engages in self-control in the face of an ethical temptation and successfully inhibits other action alternatives, which are in conflict with the individual's morality (Wikström & Treiber, 2007).

Recent findings in the self-control literature indicate that self-control resources, which are limited in nature and which further diminish as one engages in self-control (Muraven & Baumeister, 2000) play an important role in the ethical decision making process. More specifically, individuals cannot engage in ethical decision making unless they have the necessary resources to self-control (Mead et al., 2009; Gino, Schweitzer, Mead, & Ariely, 2011). Gino et al. (2011), however, found that moral identity can counter this effect and lead to ethical decision making even when one's self-control resources are diminished. Although their results may

imply that moral identity can override the need to self-control and make ethical decision making automatic (Gino et al., 2011), there are contradictory findings in the ethical decision making literature (Mazar, Amir, & Ariely, 2008; Zhong, Ku, Lount, Murnighan, 2010) as well as the moral identity literature (Aquino & Becker, 2005), indicating that the relationship between moral identity and ethical decision making is much more complex. Therefore, this research tries to shed light on this relationship by suggesting a model in which self-control acts as the mediating variable between moral identity and ethical decision making. The proposed model tries to encompass both the findings signifying the importance of moral identity in ethical decision making even when self-control resources are diminished and the data showing that even individuals with central moral identities at times engage in unethical decisions (Aquino & Becker, 2005).

Finally, this research investigates the impact moral identity has on one's self-control strength and ability. Previous research indicates that frequent exercises of self-control lead to an overall increased self-control strength that is robust across all seven domains of self-control (controlling attention, controlling emotions, controlling impulses, controlling thoughts, cognitive processes, choice and volition, and social processing) regardless of the domain the actual exercise takes place in (Muraven, Baumeister, & Tice, 1999; Oaten & Cheng, 2006a, 2006b, 2007). Therefore, this research tests whether individuals with more central moral identities have more self-control resources available to them, and if they can exhibit more self-control when faced with back to back tasks demanding self-control.

Theoretical and Practical Contributions of the Conducted Research

This research makes important theoretical and practical contributions to research on moral identity and self-control theory. First, this research investigates whether self-control plays

a mediating role between moral identity and ethical decision making. Current theorizing and research indicate that moral identity leads to ethical decisions and actions (Shao, Aquino, & Freeman, 2008); however, the current literature does not provide us with a mechanism that moral identity acts through to get from the motivation to be ethical to being ethical. I argue that self-control is that mechanism.

Furthermore, this research not only acknowledges one of the profound assumptions that we have about ethical decision making, but it also attempts to test this assumption. Discussing ethical decision making from a self-control perspective makes the underlying assumption that individuals need self-control resources to act ethically as acting ethically means overcoming the temptation to do otherwise. The current literature, however, does not present us with empirical data supporting this assumption. Accordingly, the research tries to operationalize and test whether ethical situations are tempting regardless of personal differences in terms of the importance individuals place on morality.

Additionally, if self-control is the mechanism that moral identity acts through to lead to ethical behaviors, and if moral identity leads to increased self-control ability by exercising the self-control muscle in the ethical domain, this will also have practical implications for organizations. Current research on self-control indicates that individuals who are better at self-control are in general more successful at high school, college, and the workplace and have better interpersonal relationships and better physical and psychological health (Funder & Block, 1989; Funder, Block, & Block, 1983; Gailliot & Baumeister, 2007b; Tangney, Baumeister & Boone, 2004). If moral identity leads to better self-control, then organizations should be paying closer attention to how central their potential employees perceive morality within their lives. Personality assesments, such as HEXACO (Lee & Ashton, 2004), now include measures of

honesty and humility in addition to the other big five personality traits. This research further supports the importance of such assessments in the selection process as selecting individuals who place morality as more central within their identities will not only diminish unethical conduct but will also increase the overall performance within an organization.

Furthermore, this research has implications in terms of organizational practices and expectations from employees in terms of performance and ethical behavior. If individuals who want to engage in ethical behavior cannot manage to do so in the absence of self-control resources, it is important for organizations and managers to understand the variables that diminish their employees' self-control resources. Empirical findings (Hagger, Wood, Stiff, & Chatzisarantis, 2010) indicate that self-control resources fluctuate throughout the day as a result of self-control taxing activities (i.e. decision making, planning, impression management, emotion regulation, etc.), as well as other simple reasons that one might perceive as inconsequential, such as skipping a meal or being sleep deprived. Managers should keep in mind that even the most ethical of employees still has natural limitations in terms of their ethical decision making ability. Accordingly, it might be in organizations' best interests not to over-work their employees to the point that they are sleep-deprived or skipping meals, as these types of practices can end up in unintended consequences in the form of unethical behavior due to lack of self-control resources.

As previously stated, "*The behavior expected of an executive as an economic man often differs from what is expected of him as an ethical man" (*Baumhart, 1961, p. 163). Organizational expectations can create ethical dilemmas for executives as they try to achieve the set-forth goals. In their efforts to reach organizational objectives, higher level management needs to rely on their analytical and cognitive skills throughout the day to perform their managerial duties. Most of these tasks (i.e. executive functions; decision making; risk

management) rely on the same self-control resource pool (Hagger et al., 2010) that ethical decision making relies on, therefore organizations need to be aware of the strains these managers experience as they try to engage in ethical decisions and behaviors.

Organization of the Dissertation

This dissertation is divided into four sections. Chapter 2 reviews the literature on moral identity, self-control, ego-depletion, and ethical decision making and then outlines a mediation relationship with self-control serving as the bridge between moral identity and ethical behavior. Chapter 3 overviews the experimental study, which tests whether moral identity leads to better self-control. Chapter 4 overviews the experimental study, which uses the ego-depletion framework to test whether moral identity can influence ethical decision making in the absence of self-control resources. Finally, Chapter 5 discusses the findings, contributions, and limitations of the conducted studies as well as possible directions for future research.

Chapter 2

Literature Review

Moral Identity

Although there is no single definition of moral identity that is agreed upon by researchers (Shao, Aquino, Freeman, 2008), moral identity in this research is defined as the extent an individual perceives morality as a central or essential characteristic of one's self (Blasi, 2004). The following section will first review the theoretical background as well as the empirical findings that investigate the relationship between moral identity and ethical decision making and behavior. Then, the possible relationship between moral identity and self control will be discussed.

Moral identity: A theoretical review. Shao, Aquino and Freeman (2008), in their review of the existing literature on moral identity, identified two different conceptual perspectives on moral identity: the character perspective and the social cognitive perspective.

In attempts to understand what motivates moral action, along with moral cognition and moral emotion, Blasi (1983, 1984) suggested that identity plays a role in motivating individuals to engage in moral behaviors. In his Self Model, which Shao, Aquino and Freeman (2008) categorize as part of the character perspective, Blasi (1983) suggests three elements as part of moral functioning: judgment of responsibility, moral identity, and self-consistency.

Blasi (1983) theorized that individuals who place moral concerns as central to their sense of self will be motivated to engage in moral actions in an attempt to achieve and maintain self-consistency. Therefore, for these individuals, behaving morally is a volitional act (Blasi, 1983, 2004). Blasi (1983, 2004) argues that these individuals act morally not only for the benefit of society, but also to maintain their identity, as acting otherwise is a betrayal to one's identity and

therefore self-damaging. Accordingly, under the character perspective, moral identity is suggested to be stable over time.

Similar to the character perspective, the social cognitive perspective also places moral identity central to an individual's self-definition for moral actions to take place, but only if this knowledge structure is readily available (Aquino & Reed, 2002). According to the social cognitive perspective, moral identity is "*one's self-conception in regards to a set of moral traits*" (Aquino & Reed, 2002, p. 1424), which is *"stored in memory as a complex knowledge structure consisting of moral values, goals, traits and behavioral scripts"* (Aquino et al., 2009, p.124). Because moral identity is part of one's social schema, and because any one of a person's identities can serve as the basis for a person's perceptions and behavior, one's perception of certain moral traits as being essential to one's self-concept, or moral identity, can impact engagement in moral behavior (Aquino & Reed, 2002; Shao, Aquino, & Freeman, 2008). However, if one's moral identity is not readily accessible at a given time among other identities the self contains, then moral identity will not be able to regulate one's behavior to its maximum capacity (Aquino et al, 2009).

Accordingly, under the social cognitive perspective, it has been argued that situational factors highlight or undermine the moral dimension of a situation one is engaged in, and therefore either cause the moral identity to become dominant over one's other identities or cause other identities to be salient (Aquino & Becker, 2005; Aquino et al., 2009). Empirical findings support this argument. For example, Aquino and Becker (2005) observed that in a negotiation setting, participants engaged in fewer unethical behaviors if salience of morality was increased by priming the participants to think that they were working for an organization that was fair and honest in its dealings. Similarly, Aquino et al. (2009) found that mere indications that sensitize

individuals to morality, such as reading and recalling the 10 commandments (Study 1) or writing a story with morally loaded words (Study 4), increased the accessability to one's moral identity and led to moral actions.

On the other hand, factors that compete with morality in a situation limit one's access to one's moral identity. For example, Aquino and Becker (2005) observed that participants who were assigned to a non-ethical climate condition tried to claim more resources using unethical means, such as lying during negotiations. Similarly, other studies show that incentives negatively impact the degree moral identity leads to moral action (Aquino et al., 2009).

According to Aquino and Reed (2002), moral identity has two dimensions. Internalization, which is the self-concept dimension, taps the self-importance of the moral characteristics at a private level and shows a strong relationship with moral reasoning and moral behavior (Aquino & Reed, 2002). Symbolization, on the other hand, taps the self-importance of the moral characteristics at a public level, and concerns itself with demonstrating to society that one has these characteristics (Aquino & Reed, 2002).

Moral identity: Antecedents and behavioral impact. The existing research indicates that moral education (Goodman, 2000), personality characteristics (Hart, Atkins, & Ford, 1998), social influences generated by parents and peers (Colby & Damon, 1992), engaging in moral actions such as community service (Hart, Atkins, & Ford, 1998), and community and institutional contexts all influence the development of moral identity (Nasir & Kirsner, 2003).

Moral identity has been found to impact the perceptions and behavior of individuals in a variety of ways. For example, researchers observed that moral identity neutralizes the effects of moral-disengagement by emotionally reconnecting the self to the moral consequences for others (Aquino, Reed, Thau, & Freeman, 2007; Detert, Trevino, & Sweitzer, 2008). Moral identity also

generates a stronger moral obligation to show concern for the needs and interests of out-group members (Reed & Aquino, 2003; Winterich, Mitial, & Ross, 2009). Furthermore, moral identity has been found to result in less lying behavior (Aquino & Freeman, 2009) and to lower the likelihood of engaging in deceptive tactics during negotiations and to generate fewer unethical behaviors directed against the organization (Aquino & Freeman, 2009). Additionally, research indicates that moral identity counteracts antisocial behaviors such as sabotage towards customers in the workplace (Skarlicki, Van Jaarsveld, & Walker, 2008) and injuring opponents in a football game (Sage, Kavussanu, & Duda, 2006).

Moral identity, self-control and ego-depletion. The link between moral identity and self-control is hinted at in the moral identity literature. For example, Blasi (2005) proposes that willpower is an important component of one's moral identity. Similarly, Aquino and Reed (2002, p. 1423) describe moral identity as a "*self-regulatory mechanism that motivates moral action*". Accordingly, I argue that individuals who have self-concepts that are organized around morality engage in moral action through self-control because moral identity creates the need to self-control to reach moral goals in the face of ethical challenges. In other words, if an individual has a more central moral identity, indicating that morality is an important part of his/her self identity, then s/he is more intrinsically motivated to engage in self-control to meet the goal of being true to one's moral self, which will then be reflected as an ethical decision or action. Therefore, the next section will first overview the literature on self-control and ego-depletion and then focus on the relationship between self-control and moral identity, and how moral identity acts through self-control to enable ethical decision making.

Self-Control

Self-control has been studied since the early 1920s (cf. Freud, 1923) from a variety of

theoretical perspectives. This line of research can be categorized into two groups, namely cognitive processes and individual differences. From a cognitive perspective, self-control has been studied as automatic versus controlled psychological processes (Bargh & Chartrand, 1999), which is also referred to as hot versus cool cognitions respectively (Metcalfe & Mischel, 1999), as well as from time perception and goal orientation perspectives (Fujita, Trope, & Liberman, 2006; Fujita, Trope, Liberman, & Levin-Sagi, 2006; Mischel, Shoda, & Rodriguez, 1989). From an individual differences perspective, self-control has been studied from the lenses of self-efficacy (Bandura, 1991), one's desire and willpower to self-control (Hoch & Loewenstein, 1991), as well as the source and strength level of self-control (Muraven, Tice, & Baumeister, 1998; Gailliot, & Baumeister, 2007b).

Individuals will choose to exert self-control for a variety of reasons, including the desire to follow a rule and to delay gratification (Muraven & Baumeister, 2000; Mischel, Shoda, Rodriguez, 1989). The ability to self-control enables individuals to collect more benefits in the long-run by delaying gratification in the short-run (Baumeister, Heatherton, & Tice, 1994; Mischel, 1996; Mischel, Shoda, Rodriguez, 1989; Muraven & Baumeister, 2000).

Self-control is sometimes used solely to refer to control over impulses, whereas self-regulation is used more as a general term to refer to how the self guides behavior towards goals and according to standards (Baumeister & Exline, 1999, 2000). Although self-control and self-regulation are very often used interchangeably in the self-control and ethics literatures, following Baumeister and Exline's (1999, 2000) guidelines, this research will use the term self-control to refer to the control employed by individuals to reach both personal and social goals, including but not limited to one's control over one's impulses, since aspects of self-regulation that do not involve self-control are not relevant to the conducted studies. Furthermore, referring to Muraven

and Baumeister's (2000) conceptualization of self-control, in this research, applied self-control is defined as a person's success in his/her attempt to change the way he or she would otherwise think, feel or behave.

Break-down of self control. Lack of or a break-down of self-control has received its share of attention from scholars. Lack of self-control is associated with addictive behaviors (Baumeister, 1997; Baumeister, 2003; Muraven, Collins, & Nienhaus, 2002; Muraven, Collins, Shiffman, & Paty, 2005; Russell, 1971) and criminal behavior (Gottfredson & Hirschi, 1990), which indicates that not exercising (or failing to exercise) self-control has both personal and social consequences. The absence of self-control leads to the engagement in automatic or over-learned behaviors (Bargh & Chatrand, 1999, 2000) regardless of how harmful these behaviors are, such as drinking (Muraven, Collins, & Nienhaus, 2002; Muraven et al., 2005). The negative personal and social consequences linked to self-control failure have motivated researchers to try to understand the possible reasons for the breakdown of self-control. Some of the identified reasons are the desire for short-term gains taking precedence over long-term costs (Baumeister, 1997; Baumesteir, Heatherton, & Tice, 1994; Muraven, Collins, & Nienhaus, 2002), emotional distress and depression (Tice, Bratslvasky, & Baumeister, 2001), low-level personal agency (Vallacher & Wegner, 1989), and ego-depletion (Baumeister & Heatherton, 1996; Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000).

Self-regulatory resource model and ego-depletion. Self-control depends on an individual's level of self-control strength. Therefore, people who have more self-control strength to begin with are better able to self-control compared to individuals who have lower self-control strength levels (Muraven & Baumeister, 2000). Although individuals with higher strength levels are better at self-control, a meta analysis of more than 80 empirical studies in the field of self-

control within the last two decades indicates that individuals cannot sustain their self-control capabilities across situations if they are exposed to consecutive self-control demanding tasks (Hagger et al., 2010).

When a situation requires two consecutive acts of self-control, performance on the second act is frequently impaired, even when the tasks require the engagement of different spheres of self-control (Baumeister & Heatherton, 1996; Baumeister, Vohs, & Tice, 2007; Hagger et al., 2010; Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000). Muraven and Baumeister (2000) propose a strength model, which is referred to as the *self-regulatory resource model,* to explain these observed performance deficits. The strength model points to the existence of a common resource, which many different forms of self-control rely on (Muraven & Baumeister, 2000).

According to the tenets of the self-regulatory resource model, this resource or strength is limited and gets easily depleted, which causes the impairment of the performance on consecutive tasks that also require self-control (Baumeister & Schmeichel, 2004; Muraven, Tice, Baumeister, 1998; Muraven & Baumeister, 2000). This phenomenon is referred to as *self-control depletion* or *ego-depletion* (Baumeister & Heatherton, 1996; Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000). The depletion causes a temporary reduction in the self's capacity of engaging in volitional acts (Baumeister, Leith, Muraven, & Bratslavsky, 1998), which results in lower levels of self-control in consecutive tasks that also require self-control (Baumeister, et al. 1998; Muraven, Tice, & Baumeister, 1998; Muraven & Baumeister, 2000; Vohs, Baumeister, & Ciarocco, 2005; Vohs et al., 2008; Vohs & Faber, 2007).

Ego-depletion: Why it happens. There are three suggested reasons for the observed drops in levels of self-control when one's self-control resources are challenged repeatedly:

glucose levels in the brain (Gailliot et al., 2007; Gailliot, Peruche, Plant, & Baumeister, 2009; Masicampo & Baumeister, 2008; Wang & Dvorak, 2010), conservation (Baumeister, Vohs, & Tice, 2007; Muraven, Shmueli & Burkley, 2006; Tyler & Burns, 2009), and expectancies (Baumeister, Vohs, & Tice 2007; Clarkson, Hirt, Jia, & Alexander, 2010; Job, Dweck, & Walton, 2010; Martijn et al., 2002).

Glucose levels. The resource pool for self-control as proposed in the ego-depletion framework is more than a metaphor as self-control has a biological component due to its partial reliance on glucose levels in the bloodstream (Gailliot & Baumeister, 2007b; Gailliot, et al., 2007). Empirical studies show that glucose levels drop when individuals engage in self-control, which leads to poor performance on consecutive acts of self-control (Gailliot & Baumeister, 2007a; Denson, von Hippel, Kemp, & Teo, 2010; DeWall, Baumeister, Gailliot, & Maner, 2008; Gailliot, et al., 2007; Gailliot, Peruche, Plant, & Baumeister, 2009; Wang & Dvorak, 2010). For example, Gailliot, et al. (2007) observed that individuals who engaged in an attention control task had lower levels of glucose after completing the task compared to individuals who did not need to regulate their attention, and this diminished level of glucose led to lower performance levels in consecutive tasks of self-control from different spheres. Similarly, Wang and Dvorak (2010) found that individuals who have lower levels of glucose could not focus on distal goals, which are associated with high level of self-control (Fujita, 2008; Fujita, Trope, & Liberman, 2006; Mischel, Schoda, & Rodriguez, 1989), but rather chose "*sooner but smaller*" rewards (Wang & Dvorak, 2010, p. 183), which are associated with lower levels of self-control (Mischel, Schoda, & Rodriguez, 1989).

Both Gailliot et al. (2007) and Wang and Dvorak (2010) observed that the observed patterns could be reversed if participants were given sugary drinks that restored the glucose

levels in the bloodstream. The intervention of introducing sugary drinks has been only found to increase the performance in self-control tasks for depleted individuals, and not for non-depleted individuals (Masicampo & Baumeister, 2008), and the effect is only observed when the drink actually contains sugar and not a sugar substitute (Gailliot et al., 2009; Masicampo & Baumeister, 2008). In fact, a meta-analysis conducted by Hagger and colleagues (2010) found a large homogeneous effect size associated with glucose levels, indicating that restoring glucose levels by supplementing depleted individuals with glucose rather than a placebo (such as Splenda) leads to significantly better performance on subsequent tasks requiring self-control.

Conservation. From a biological as well as a survival perspective, the human body will try to preserve whatever is limited for when it is needed most (Deutz, Benardot, Martin, & Cody, 2000). Given the limited capacity of the energy source for self-control, people have a tendency to preserve this energy source until it is replenished back to its full capacity unless there is a compelling reason why they should use more of this limited energy. Even then, people are reluctant to stretch themselves too thinly and try to preserve some of this energy for possible emergencies rather than using all that is available (Muraven, 2012).

The conservation argument for ego-depletion has been put to empirical tests (Muraven, Shmueli & Burkley, 2006; Tyler & Burns, 2009). For example, across three experimental studies, Tyler and Burns (2009) found that depleted participants who anticipated engaging in a task in the future that would require them to self-control applied less self-control compared to depleted participants who did not have such an expectation. Similarly, participants who anticipated engaging in a longer task showed more of the depletion effect in a hand-grip performance task compared to individuals who knew that they were approaching the end of the study (Tyler & Burns, 2009).

Expectancies. Studies conducted within the ego-depletion framework indicate that depleted individuals' perceptions of their capacity to self-control have an impact on how much they can control themselves in consecutive tasks that require engagement of self-control due to an innate understanding of what requires self-control and what does not (Clarkson et al., 2010, Job, Dweck, & Walton, 2010; Martijn et al., 2002). For example, when Clarkson et al. (2010) presented participants with feedback about their level of depletion of cognitive resources (either high or low) at the point of time based on the previous task they engaged in, they observed that individuals who perceived themselves as less depleted were more successful at a consecutive self-regulation task of persistence compared to individuals who perceived themselves as more depleted, regardless of the actual level of depletion.

Martijn et al. (2002) obtained similar results when they manipulated the participants' expectations about the impact of the ego-depletion task they engaged in on their future attempts of self-control. These researchers found that after engaging in an emotion regulation task, if participants' expectations about the limitations of self-control were challenged by telling them that applying emotional effort does not diminish physical stamina, but rather improves it, then they did not experience the ego-depletion effect and maintained physical stamina in a consecutive hand grip task. Participants who were depleted by an initial emotional regulation task and whose expectations about limitations of self-control were not challenged, on the other hand, showed drops in performance levels when faced with the hand grip challenge as predicted by the ego-depletion framework.

Overcoming ego-depletion via motivation. Although ego-depletion has a detrimental effect on future attempts of self-control, research indicates that it is possible for individuals to counteract this effect if they are motivated to engage in further self-control in an attempt to attain

goals (Muraven & Slessareva, 2003; Muraven, Pogarsky, & Shmueli, 2006). The impact of motivation on levels of self-control when individuals engage in ego-depleting tasks has been tested using operationalizations of motivation ranging from monetary compensation to social incentives (Alberts et al., 2007; Martijn, et al, 2007; Muraven & Slessareva, 2003; Stewart, Wright, Azor Hui, & Simmons, 2009). These studies indicate that if individuals are motivated enough, they can overcome the depletion they experienced initially and still engage in self-control in a subsequent task.

Muraven and Slessareva (2003), for example, found that individuals who were asked to drink an unpleasant beverage drank less of the unpleasant beverage after an emotional depletion task. When the participants were offered monetary compensation, however, they overcame the initial depletion and drank more of the unpleasant beverage. Similarly, when depleted participants were told that attending the task would benefit society, they persisted longer on an unsolvable puzzles task due to being more motivated to perform (Muraven & Slessareva, 2003).

Building a stronger self-control muscle. Although studies conducted to test the possible consequences of ego-depletion show detrimental effects, empirical findings indicate that the repeated engagement in self-control exercises increases one's capacity to self-control in the long-run while hindering it in the short-run (Muraven, Baumeister, & Tice, 1999; Oaten & Cheng, 2006a, 2006b, 2007). Referring to the muscle analogy, exercising the self-control muscle tires it initially; however, frequent exercise makes it stronger over time (Muraven, Baumeister, & Tice, 1999).

Along these lines, in a longitudinal study conducted by Muraven, Baumeister and Tice (1999), individuals who engaged in self-control exercises, such as controlling eating habits, throughout a two-week period showed significant increases in terms of their self-control capacity

during a hand-grip exercise task after engaging in a thought-suppression task compared to the control group, which did not engage in any self-control exercises during the two-week period.

Similarly, Oaten and Cheng (2006a, 2006b; 2007) found that practicing self-control repeatedly improves self-control strength over time. More specifically, they found that when individuals were enrolled in specific programs, which would enable them to engage in self-control regularly, such as a daily study program (Oaten & Cheng, 2006a), a physical exercise program (Oaten & Cheng, 2006b), or a financial monitoring program (Oaten & Cheng, 2007), they managed to fix their attention longer in a visual distraction task after being depleted by a thought suppression task compared to participants who did not exercise their self-control muscle regularly. These studies also found that participants who engaged in these self-control exercising programs over a four month period, self-reported significant drops in unhealthy behaviors associated with lack of self-control such as smoking, alcohol and caffeine consumption, while reporting increases in healthy eating, emotional control, monitoring spending, and improved study habits, which can be linked to better self-control (Oaten & Cheng, 2006a, 2006b).

Ego-depletion and ethical decision making. Certain behaviors and processes are more sensitive to the levels of energy available for self-control and therefore vulnerable to ego-depletion (Baumeister, Vohs, & Tice, 2007). Examples include self-presentation (Vohs, Baumeister & Ciarocco, 2005), kindness in response to a partner's bad behavior (Finkel et al., 2006), dealing with difficult partners (Finkel & Campbell, 2001), prejudice in interracial interactions (Richeson & Shelton, 2003; Richeson & Trawalter, 2005, Richeson, Trawalter, & Shelton, 2005), alcohol consumption (Baumeister, 2003; Muraven, Collins, & Nienhaus, 2002; Muraven, Collins, Shiffman, & Paty, 2005), eating among dieters (Vohs & Heatherton, 2000), overspending (Vohs & Faber, 2007), aggression (DeWall et al., 2007; Stucke & Baumeister,

2006), sexual impulses (Gailliot & Baumeister, 2007a), logical decision making (Bruyneel, Dewitt, Franses, & Dekimpe, 2009; Fischer, Greitemeyer, & Frey, 2008; Masicampo & Baumeister, 2008; Pocheptsova, Amir; Dhar; & Baumeister, 2008), and executive functions (Schmeichel, 2007; Schmeichel, Vohs, & Baumeister, 2003; Schmeichel & Vohs, 2009). Recent research on ethical decision making using the ego-depletion framework shows that ethical decision making is another process that relies on self-control (DeBono, Shmueli, Muraven, 2010; Mead et al., 2009; Muraven, Pogarsky, & Shmueli, 2006; Gino et al., 2011). Therefore, the next section will first discuss the current theorizing and empirical findings on ethical decision making, self-control and ego-depletion, and will then propose hypotheses positing the relationships that exist among moral identity, self-control, and ethical decision making.

Ethical Decision Making

Ethics have been studied by theologians, philosophers, sociologists as well as psychologists, economists and management scholars (O'Fallon & Butterfield, 2005). Empirical studies of ethics are concerned with the ethical decision making process and the associated ethical or unethical behavior, and researchers studying ethics from this perspective try to explain and predict ethical decisions and behaviors of individuals when they are faced with an ethical issue (O'Fallon & Butterfield, 2005).

Unfortunately, researchers are not in full agreement in terms of how to define moral and ethical behavior, and the terms "moral" and "ethical" are commonly used interchangeably in the ethics literature (Jones, 1991; Tenbrunsel & Smith-Crowe, 2008). Although most of the research in this field shies away from providing definitions for these terms (Tenbrunsel & Smith-Crowe, 2008), Jones (1991) defines ethical decisions as decisions that are both legal and morally acceptable, whereas Trevino, Weaver, and Reynolds (2006) refer to ethical behaviors as those that are right in the societal view. In this research, I will adhere to Trevino, Weaver, and

Reynolds' (2006) conceptualization and consider behaviors that are right in the societal view as ethical and consider behaviors that are wrong in the societal view as unethical.

Ethical decision making: A theoretical overview. Although there is no agreement in terms of how to define ethics, there has been a substantial increase in ethics research in the last decade (O'Fallon & Butterfield, 2005; Tenbrunsel & Smith-Crowe, 2008). Researchers have looked into individual factors (i.e. age, gender, nationality and culture, religion, awareness, locus of control, intent, need for cognition), organizational factors (i.e. industry type, organizational size, opportunity, codes of ethics, ethical climate, training), as well as situational factors such as moral intensity (Jones, 1981) to explain when and why individuals engage in ethical versus unethical behavior in the work place (Elm & Nichols, 1993; O'Fallon & Butterfield, 2005; Trevino, Weaver, & Reynolds, 2006).

A variety of models have been proposed to explain ethical decisions as well as failures to make ethical decisions. Recently, Tenbrunsel and Smith-Crowe (2008) suggested three components in their ethical decision making model, namely moral awareness, moral decision making, and amoral decision making. Introduced first by Rest (1982) as a construct, moral awareness is the point where a decision becomes either moral or amoral (Tenbrunsel & Smith-Crowe, 2008), depending on whether an individual perceives an issue as a moral problem. Both amoral and moral decision making processes can generate ethical and unethical decisions, the only difference being the intention (Tenbrunsel & Smith-Crowe, 2008). More specifically, an individual who is engaged in an amoral decision making process can end up making an unintentional ethical or unethical decision, whereas an individual who is in a moral decision making process can either make an intentional ethical decision or an intentional unethical decision.

Since the decision making process in an ethical situation can alternatively lead to an intentional unethical decision, making an intentional ethical decision implies employing self-control in the face of an ethical temptation. Therefore, in the next section, I will discuss ethical decision making from a self-control perspective.

Self-control and ethical decision making. Ethical decision making and morality have often been discussed together with self-control both in the ego-depletion literature and ethics literature. For example, Wikström and Treiber (2007) suggest that self-control defines an individual's success in acting in accordance with one's ethicality when faced with ethical temptations. Specifically, when an individual is faced with a choice that puts one at odds with his/her ethicality, if the individual chooses to act according to one's ethical rules, then he/she exercises self-control (Wikström & Treiber, 2007). If, however, the individual acts upon temptation and responds contrary to those moral beliefs, then s/he fails to exercise self-control (Wikström & Treiber, 2007).

According to Baumeister and Exline (1999), morality helps people live and function together by dictating that self-interest should be placed below the requirements of group life and co-existence and therefore restrained whenever necessary. In other words, morality is a way of establishing social order, and individuals have to control their impulses and perform socially and ethically desirable behaviors in order to be a part of that order (Baumeister & Exline, 1999).

Likewise, Social Cognitive Theory (Bandura, 1991) suggests that self-regulatory systems lie at the core of causal processes, and as a result, people have the capability to exercise control over their thoughts, feelings, motivations, and actions. More specifically, Bandura (1991, 1999) suggests that "*moral reasoning is translated into actions through self-regulatory mechanisms rooted in moral standards and self-sanctions by which moral agency is exercised*" (Bandura,

1999, p.193). These moral standards are formed as a result of a socialization process, and individuals employ self-control to meet the moral standards to build a sense of worth and to avoid self-condemnation (Bandura, 1999).

Trevino (1986), as part of her interactionist model of ethical decision making in organizations, similarly argues that levels of ego strength will define whether an individual will be able to resist impulses, engage in ethical behavior, and show more consistency between moral judgment and moral action.

Empirical findings also indicate that self-control influences ethical decision making. For example, Finkenauer, Engels, and Baumeister (2005) found that delinquent misbehavior such as fighting, vandalism, and petty theft rates were lower for adolescents who have high levels of self control. Similarly, Finkel et al. (2006) found that self-control failure is an important predictor of intimate partner violence perpetration. Neurological findings from neuroimaging studies similarly link self-control and ethical behavior. For example, Greene et al. (2004) using fMRI techniques, observed increased brain activity in the prefrontal cortex when subjects were given a moral dilemma task. Other neuroimaging studies indicate increased brain activity in the prefrontal cortex when subjects engage in self-control (Duncan & Owen, 2000; Miller & Cohen, 2001). Greene and Haidt (2002) also found that the three brain regions that become active during moral judgment are the same areas that are active in goal-directed actions, which are highly dependent on self-control (Mischel, 1996; Mischel, Shoda, & Rodriguez, 1989).

Ethical decision making when self-control resources are depleted. According to the ego-depletion theoretical framework, any act that requires self-control, be it psychological or physiological, uses energy from the same energy pool, and will lower the supply of energy needed for a consecutive act that also requires self-control (Baumeister, 2002; Muraven, Tice, &

Baumeister, 1998). Therefore, because ethical decision making relies on one's self-control ability and self-control resources, an individual's ability to choose to engage in ethical behavior will be significantly hindered if one has to make an ethical decision immediately after engaging in a task that depleted one's regulatory source (DeBono, Shmueli, & Muraven, 2011; Gino et al., 2011; Mead et al., 2009; Muraven, Pogarsky, & Shumeli, 2006).

Accordingly, Muraven, Pogarsky, and Schumeli (2006) found that when individuals' self-regulatory resources were depleted by an inhibition task, they engaged in more rule breaking, which these researchers interpreted as an increased tendency for criminal behavior due to ego-depletion. Similarly, Mead et al. (2009) showed that dishonesty levels increased when people's self-control resources were depleted by an initial act of self- control. Depleted individuals did not only misrepresent their performance more for monetary gain (Experiment 1), but they also exposed themselves to ethical temptations more compared to individuals that were not previously depleted.

DeBono, Shmueli and Muraven (2010) also found similar results. In their first experiment, depleted participants were not only more likely to misrepresent how many problems they solved compared to the participants who were not depleted, but they were also more likely to disobey instructions compared to the control group. They also found that depleted individuals were more likely to be ruder to the experimenter compared to the non-depleted participants (Experiment 2), which is another type of socially undesirable behavior.

Empirical findings from the ego-depletion literature indicate that all self-depleting processes from the seven different spheres can serve as both the dependent and the independent variable, as these processes do not only cause depletion, but they are also themselves vulnerable to ego-depletion generated by previous self-control acts (Baumeister, 2002; Hagger et al., 2010;

Muraven, Tice, & Baumeister, 1998). Accordingly, ethical decision making is not only vulnerable to the fluctuations in the self-control resource pool caused by depletion generated by the other spheres, but it also has a depleting effect on consecutive actions that require self-control (Gino et al., 2011).

Researchers studying the impact of self-control resources on ethical decision making have also investigated the possible role moral identity plays in this relationship (Gino et al., 2011). Depleted individuals who perceived morality as a central part of their identity overcame the depletion and still engaged in the morally desirable behavior when their morality was challenged with a second task (Gino et al., 2011). It was concluded that this was because moral identity helps individuals not rely on their self-control resources, but rather engage in automatic ethical responses. Although this is a plausible explanation, a motivational explanation bringing ego-depletion theory and the effect of moral identity through further self-control on moral actions can better explain the observed results. Therefore, the next section will first theorize about the possible short term relationships among moral identity, self-control, ego-depletion and ethical decision making and then discuss the possible long term relationships between moral identity and self-control.

Ethical decision making when moral identity is central: Controlled or automatic? Moral identity has been shown to motivate individuals to act ethically (Hart, Atkins, & Ford, 1998; Reed, Aquino, & Levy, 2007; Sage, Kavussanu, & Duda, 2006; Skarlicki, van Jaarsveld, & Walker, 2008) as individuals who perceive morality as a central part of their identity feel more of an obligation and responsibility to live according to their moral concerns and act more in sync with their moral values (Hardy & Carlo, 2005).

As mentioned, the current theorizing suggests that moral identity negates the necessity to tap one's self-control resources because for individuals with more central identities ethical decision making is automatic (Gino et al., 2011). Operations that are automatic not only drain minimal energy from our cognitive resources, but they function at a constant level under all circumstances (Hasher & Zacks, 1979). Therefore, if ethical decision making is automatic for individuals with more central moral identities, these individuals will display consistent ethical performance across different situations regardless of the situational factors. Accordingly, under this theorizing, individuals who have central moral identities will not be sensitive to situational factors and stay true to their moral selves at all times rather than engaging in unethical behaviors. Findings by Aquino and Becker (2005) contradict this theorizing, however, as they observed that one's moral identity only took over and resulted in ethical behavior when situational cues made ethicality salient. When situational cues activated other dimensions of one's identity, this led to unethical behaviors such as lying.

Similarly, if moral identity leads to automatic ethical decision making, individuals with more central moral identities will display a consistent ethical pattern across multiple ethical decisions as none of these decisions will require them to tap into one's self-control resources. Research investigating the impact of previous ethical decision making, however, indicates that when individuals are faced with multiple ethical decisions back to back, the prior choice one makes negatively or positively impacts the following decision (Jordan, Mullen, & Murnighan, 2009; Levav & McGraw, 2009; Mazar & Ariely, working paper; Monin & Miller, 2001; Zhong et al., 2010), rather than the consistent pattern moral identity should generate. For example, Zhong et al. (2010) observed that, in 12 rounds of ethical decision making, individuals' previous ethical choices, be it more ethical or more unethical; either earned or lost them moral credits

respectively. Individuals who initially made a more ethical choice made significantly less ethical choices in a consecutive ethical decision making task, whereas individuals who made less ethical choices in the initial task made significantly more ethical decisions in the following ethical decision task (Zhong et al., 2010). Similar findings in the ethical decision making literature (Jordan, Mullen, & Murnighan, 2009; Levav & McGraw, 2009; Monin & Miller, 2001; Zhong et al., 2010) together suggest that ethical decision making is not an automatic process for individuals with more centralized moral identities. On the contrary, even individuals who try to act in line with their moral self-concepts engage in a cognitive evaluation of the ethical situations they face, which leads to either ethical or unethical decisions based on their self-perception at the time (Mazar, Amir, & Ariely, 2008).

The observed results by Zhong et al. (2010) and others (Jordan, Mullen, & Murnighan, 2009; Levav & McGraw, 2009; Monin & Miller, 2001), however, are not in contradiction with the ego depletion framework. Trying to maintain a consistent moral self-image serves as a goal that motivates individuals to overcome the depletion effect generated by the previous ethical decisions they engage in, similar to the motivation moral identity generates. Based on the findings in the ego-depletion literature, motivation to reach goals is one of the factors that leads to self-control despite previous depletion (Muraven & Slessareva, 2003; Muraven, Pogarsky, & Shmueli, 2006). If moral identity leads to motivation to act ethically (Hart, Atkins, & Ford, 1998; Reed, Aquino, & Levy, 2007; Sage, Kavussanu, & Duda, 2006; Skarlicki, van Jaarsveld, & Walker, 2008) and helps overcome previous depletion and promote further engagement of one's self-control resources (Muraven & Slessareva, 2003; Muraven, Pogarsky, & Shmueli, 2006), then it should help individuals engage in further self-control even when their self-control resources are initially depleted and will enable them to engage in ethical behavior through self-

control. More specifically, individuals with more central moral identities will act ethically when their ethicality is challenged even when their self-control resources are initially depleted as moral identity will create the will to engage in further self-control to be ethical and will make more of the self-control resources available to the individual to do so (Refer to Figure 1).

H1: Depleted individuals who have more central moral identities will be able to engage in more self-control compared to depleted individuals who have less central moral identities.

Furthermore, Zhong et al.,'s (2010) findings suggest that moral identity acts through self-control to engage in ethical decision making. Zhong et al., (2010) observed that initially engaging in the more unethical choice leads to significantly more ethical choices in a consecutive ethical decision making task, whereas an initial ethical choice leads to significantly less ethical choices. The observed results can be explained via a mediation model with self-control acting as the mediating variable between moral identity and ethical decision making. Although individuals who are faced with multiple rounds of ethical decision making experience a decrease in their self-control resources and therefore engage in less ethical decisions and behaviors, the motivation to restore their moral self-concept motivates these individuals to tap into their left over self-control resources. The motivation these ethical debits generate, therefore, counteracts the experienced depletion effect, leading to further self-control, which then leads to ethical decision making. The ethical decisions resulting from the motivation to reduce the dissonance these individuals experience in terms of their moral self-concepts, however, eliminate the need and motivation to further self-control as the moral self-image will be re-established. Since the motivation to self-control is eliminated and because participants are depleted even more, they can no longer self-control and engage in the observed unethical decisions. Accordingly, these

individuals display the zigzag pattern observed by Zhong et al. (2010), between ethical and unethical decisions to preserve their perceived and desired moral self-image as long as their self-control resources permit it. In other words, self-control mediates the relationship between moral identity and ethical decision making (Refer to Figure 1).

Therefore, I propose that:

H2: Individuals who have more central moral identities will engage in more self-control compared to individuals with less central moral identities, which will lead to more likelihood for ethical ethical behavior.

Moral identity, motivation to be ethical and self-control: Long-term effects. As stated in the review of the ego-depletion literature, the self-control muscle is vulnerable to depletion in the short-term, but exercising of this muscle in any of the seven spheres of self-control helps enlarge the size of the resource pool, leading to better self-control over time (Muraven, Baumeister, & Tice, 1999; Oaten & Cheng, 2006a, 2006b, 2007). Therefore, practicing self-control regularly in the context of ethical decision making, due to relying on the same self-control resource pool, will also help strenghten the self-control muscle. More specifically, individuals who consistently and regularly engage in ethical decision making and who make ethical choices will be more successful in their attempts to self-control when faced with other challenges from the different spheres of self-control, and they will be less vulnerable to ego-depletion as a result of having stronger self-control muscles.

As discussed, moral identity is considered to be one of the forces that motivates individuals to act ethically, and individuals with self-concepts that are organized around their moral beliefs are more likely to consistently engage in ethical decision making that reflect these beliefs (Hardy & Carlo, 2005). If individuals are more intrinsically motivated to act ethically

because they perceive morality to be central to their sense of self and identity, and if individuals self-control to act upon their moral values more frequently because of the obligation and responsibility they feel to live according to these moral concerns, then they will exercise their self-control muscle on a frequent basis. This, in turn, will increase their self-control strength, which many processes from the seven spheres of self-control rely on.

As research in the ego-depletion framework indicates, one's initial resource pool determines the level of impact one suffers as a result of being previously depleted if one is being challenged with consecutive tasks of self-control (DeBono, Shmueli, & Muraven, 2010; Muraven & Baumeister, 2000; Muraven, Pogarsky, & Shmueli, 2006). Individuals who have larger self-control resource pools are less vulnerable to the ego-depletion effect. Along these lines, empirical data indicates that although individuals will be more likely to act unethically after an initial ego-depletion task, individuals who have initial self-control resource pools that are larger will not be as vulnerable to previous depletion (DeBono, Shmueli, & Muraven, 2010; Muraven, Pogarsky, & Shmueli, 2006). Therefore, individuals who perceive morality as a more central part of their identity will be able to self-control more when faced with situations that require them to self-control, including but not limited to situations that require ethical decision making. These individuals will have a stronger self-control muscle compared to individuals who have less central moral identities. Accordingly, I hypothesize that:

H3: Individuals with more central moral identities will have more self-control strength compared to individuals with less central moral identities.

The role of moral identity in the face of an ethical temptation. As discussed, it has been argued that individuals who have more central moral identities recognize the ethical situation and they engage in an automatic response rather than a controlled one as they do not

perceive it as a temptation (Gino et al., 2011). If individuals with central moral identities are engaging in an automatic response rather than a controlled one, then they will not expend any of their cognitive resources and will spend less time contemplating their decision. Therefore, when a situation is ethically tempting, they will not take any longer to consider their decision than when the situation is not ethically tempting. However, if individuals with central moral identities are tempted by ethical situations, and accordingly are not engaging in an automatic response in the face of ethical temptations but rather in a controlled response, then their response time in the ethical situation will be delayed in comparison to their response to situations that are not tempting. Similarly, if individuals with central moral identities do not perceive the ethical situation as tempting and are displaying an automatic response, then depleted individuals with more central moral identities will not differ in terms of the time they spend during ethical decision making when faced with an ethical temptation compared to non-depleted individuals with more central moral identities.

Under the tenets of self-control theory, however, individuals who have more central moral identities will not differ from individuals who have less central moral identities based on their perception of the situation as an ethical situation and whether they see this situation as tempting versus not, but rather in terms of how much of their self-control resources they will be willing to expend. Therefore, individuals with more central moral identities will also perceive the ethical situation as a temptation and spend time before they make a decision as they contemplate what to do rather than engaging in an automatic decision. Furthermore, if these individuals have been previously depleted, they will spend even more time contemplating the ethical decision compared to non-depleted individuals with more central moral identities as the diminished self-control resources will create more of a challenge for these individuals.

Therefore, I propose that:

H4a: Individuals with more central moral identities will spend more time considering their decision in an ethically tempting situation than a situation that is not ethically tempting.

H4b: Individuals with more central moral identities will spend more time considering their decision in an ethically tempting situation when depleted than when not depleted.

Moral identity, ego-depletion and the inevitable stance of unethicality. Even though moral identity will lead to better domain specific self-control due to the motivation it generates to be ethical, and increased self-control strength due to the frequent self-control exercises this motivation leads to, the increased self-control will still have a limit and therefore its impact will not be indefinite. More specifically, although moral identity will lead to increased motivational levels to act ethically and increased self-control strength through regular engagement of self-control via ethical decision making, ethical decision making will still be susceptible to ego-depletion as each ethical situation generates a temptation these individuals have to resist via engaging their self-control resources.

Empirical support for this viewpoint comes from ethical decision making research. In a multiple ethical decision making task, which required participants to act honestly or dishonestly at each trial, Mazar and Ariely (working paper) observed that at some point almost all participants switched to a response strategy in which they cheated in every trial. Individuals engage in ethical decision making to be consistent with their moral self-concept (Mazar, Amir, & Ariely, 2008). Therefore, individuals engaged in ethical behavior to stay true to their moral self-concept but allowed themselves to engage in unethical conduct only to the degree that it did not negatively impact their perception of their moral self-concept (Mazar, Amir, & Ariely, 2008;

Mazar & Ariely, working paper). When individuals faced continuous ethical challenges, on the other hand, and made back to back unethical choices, individuals gave in and engaged in unethical behavior all the way (Mazar & Ariely, working paper).

This ultimate "all unethical" stance can be linked to the physical component of self-control, namely glucose, as individuals can only tolerate the biological depletion to a certain level. As discussed, empirical findings indicate that every self-control attempt has a direct negative impact on one's blood glucose levels (Galliott et al., 2007), and that future self-control attempts get negatively impacted when individuals' glucose levels are below optimum levels (Galliott & Baumeister, 2007b). Therefore, the observed results by Mazar and Ariely (working paper) can be explained by diminished glucose levels, which is the biological indicator of self-control. Based on the findings that blood glucose levels are impacted by previous attempts of self-control (Galliott & Baumeister, 2007b), and because ethical decision making has been identified as one of those processes that engages self-control (DeBono, Shmueli, & Pogarsky, 2010; Gino et al., 2011; Mead et al., 2009; Muraven, Pogarsky, & Shmueli, 2006), the all "unethical stance" across participants observed by Mazar and Ariely can be explained by the drop in glucose levels the participants experienced as a result of the 100 rounds of ethical decision making they engaged in, which taxed their self-control resources. Accordingly, I argue that regardless of how important one perceives morality to be in one's life, the will to do the ethically right thing will only prevail if individuals have the necessary self-control resources to engage in the ethically right decision or behavior. Therefore, even individuals who have more central moral identities will not be able to sustain their ethicality when their glucose levels drop down to levels that are damaging to self-control. More specifically, if self-control is the mechanism that moral identity acts through for individuals to engage in ethical decision making, and if an individual's glucose levels drop

below required levels to engage in self-control, even individuals with more central moral identities will not be able to engage in self-control and as a result will not be able to make ethical decisions. Therefore, I propose that:

H5: Depleted individuals, regardless of the centrality of their moral identity, will be less likely to act ethically compared to non-depleted inividuals when faced with an ethical decision making task.

The proposed hypotheses will be tested in two experimental studies. Chapter 3 presents Study 1 and tests Hypotheses 1, 2, 3, 4a and 4b. Chapter 4 presents Study 2 and tests Hypothesis 5.

Chapter 3

Mediation analysis has been used in the natural and social sciences for a long period of time, however, there are fundamental concerns and disagreements about how mediation analysis should be carried out (Green, Ha, Bullock, 2010a, 2010b; ManKinnon, Fairchild, & Fritz, 2007; Preacher & Hayes, 2004; Spencer, Zanna, & Fong, 2005; Stone-Romero & Rosopa, 2008). Although Baron and Kenny's (1986) four step analysis is the most predominantly used approach for mediation analysis, scholars have criticized the testing of simple regressions among measured variables due to the biased estimates this methodology can generate in terms of the extent of mediation (Green, Ha, Bullock, 2010a, 2010b; Spencer, Zanna, & Fong, 2005; Stone-Romero & Rosopa, 2008). Accordingly, researchers started not only measuring the mediating variables but also manipulating them to understand the extent of mediation a mediating variable generates (Bolger & Amarel, 2007; Sheets & Braver, 1999). Therefore, Study 1 will test the proposed mediation effect of self-control in the relationship between moral identity and self-control by both measuring and manipulating self-control.

Studies investigating the effects of self-control depletion generally use a dual task paradigm (Baumeister & Ciarocco, 2005; Baumeister, Bratslavksy, Muraven, & Tice, 1998; Muraven, Collins, & Nienhaus, 2002; Muraven et al., 2005; Muraven, Tice & Baumeister, 1998; Richeson & Shelton, 2003; Schmeichel, Vohs, & Baumeister, 2003; Vohs, Baumeister, & Ciarocco, 2005; Vohs et al., 2008; Vohs & Faber, 2007) in which participants first engage in either a self-control task or a no self-control task, and then they are asked to perform a second target task, which requires self-control. Therefore, in Study 1, the two-task paradigm was used to manipulate the ability to self-control, and glucose levels were measured to test whether moral identity would lead to applied self-control in the face of an ethical decision making task.

Study 1

Methods

Participants and Design

Data was collected from 178 individuals. The participants were recruited from undergraduate students from a Northeastern University, who were fulfilling a research requirement for a Management or Psychology class. A 2 (depletion vs. no depletion) X 2 (temptation vs. no temptation) design was employed. Participants were randomly assigned to condition. After 10 individuals were excluded from the analysis due to missing data, there were a total of 85 participants in the temptation condition (41 in the no-depletion, 44 in the depletion) and a total of 83 participants in the no-temptation condition (39 in the no depletion; 44 in the depletion). Fifty-four percent were male, and the average age was 19.26 (SD = 2.62).

Procedure

The study consisted of two sessions. Session one was an individual online session, and session two was in a laboratory setting. In session one, participants were asked to complete a survey on Qualtrics, including scales for the internalization dimension of moral identity (Aquino & Reed, 2002) and self-control (Tangney, Baumeister, & Boone, 2004). This survey also included the scale for value orientation for materialism (Richins & Dawson, 1992) and demographic questions about age and gender as prior research indicates that these variables can impact ethical decision making (O'Fallon & Butterfield, 2005). Furthermore, a measure of social desirability (Crowne & Marlowe, 1960) was included in the survey as the items on the moral identity scale have been found to be somewhat sensitive to social desirability concerns (Aquino & Reed, 2002).

The second session took place one week after the online survey. Upon arrival, following

Galliott et al.,'s instructions (2007) participants were told that the study would be investigating physiological measures and task performance and that it consisted of a writing task, a visual processing task, and a word completion task. After this introduction, participants were given a survey, which asked for the number of hours of sleep the participants had the night before the study, as sleep deprivation can impact the ability to self-control (Barber, Manz; Bagsby, & Powel, 2009; Drummond et al., 2005). After the survey was completed, blood samples were taken from participants using single-use blood sampling lancets, and blood glucose levels were measured with Accu-Chek compact meters to assess baseline blood glucose levels (Galliott et al., 2007).

Writing task. After the blood glucose test was administered, participants engaged in the writing task, which is the self-control depletion task. This is a commonly used depletion task in the ego-depletion literature (Gino et al., 2011; Mead et al., 2009; Schemeichel, 2007), and it requires participants to write an essay about a trip that they recently took. Following Gino et al.,'s (2011) procedures, participants in the depletion condition were given the following instructions:

> *"In this task you are asked to write an essay about a trip that you recently took. Furthermore, for the purposes of this task you are asked not to use the letters "A" or "N" anywhere in your story."*

Participants were given a total of 6 minutes to complete this task. In the control condition, participants were also asked to write about a recent trip. Following Gino et al.'s (2011) instructions, the control group was given the following instructions:

> *"In this task you are asked to write an essay about a trip that you recently took. Furthermore, for the purposes of this task you are asked not to use the letters "X" or "Z"*

anywhere in your story."

Similar to the experimental condition, participants in the control condition were also given 6 minutes to complete the writing task.

After the participants completed the writing task, to check for the impact of the manipulation on self-control resources generated by this task, a second glucose test was administered. Futhermore, following Gino et al.'s (2011) procedures, participants were also asked to complete a manipulation check and the PANAS scale (Watson, Clark, & Tellegen, 1988).

Visual processing task. After the writing task, participants engaged in the visual processing task, which was the ethical decision-making task. The task was adapted from Mazar, Amir and Ariely (2008). At the beginning of the task, all participants were informed that they would be entered in a lottery to win $100 based on their performance in the following task. Participants were given sheets with 20 matrices. Each matrix was 3x4 in size, and contained 3 digit numbers with two decimal points in each of the 12 cells (Figure 2).

Participants were asked to find two numbers per matrix that add up to 10 within a 4 minute time frame (Mazar, Amir, & Ariely, 2008). Participants were given the following instructions:

> *"Welcome to the visual processing task. In this task, you are asked to look at each of the 20 matrices one at a time and find two numbers per matrix that add up to 10. According to your performance on this task, you will be entered into a lottery to win $100. You can increase your probability of winning this prize as the number of times you will be entered into the lottery will be based on your performance. You have 4 minutes to complete this task. You have been provided with an envelope containing a pen and sheets of paper with the matrices. You will mark your answers on the provided matrix sheets.* ***Please do not put your name or Student ID number on either the sheets or the***

envelope. *At the end of the 4 minutes, the computer will show you the correct answers and prompt you to calculate your overall score based on your markings on the matrix sheets and enter it to the system. Based on this entered score, you will be entered into the lottery to win $100, such that you will be entered into the lottery as many times as your reported correct score (each correct answer is equal to one entry). After you finish the task, please drop the envelope and pen into the boxes, and sheets of paper into the recycling bin that are placed by the exit. Once the study and the lottery are completed, you will receive an e-mail announcing the winner. Instructions to claim the prize of $100 will also be provided in this e-mail."*

Because the participants were told that their reported responses could not be linked to their actual performance, this task provided participants the ability to cheat, which made it an ethical decision making task, and it was up to the participants to control themselves despite the temptation of the prize of $100. In actuality, participants' matrix sheets were marked with identification numbers using an invisible ink pen to allow for linking the participants' actual performance with their reported performance during data analysis.

Participants in the control condition, which was the no-temptation condition, were given the following instructions:

'Welcome to the visual processing task. In this task you are asked to look at each of the 20 matrices one at a time and find two numbers per matrix that add up to 10. According to your performance on this task, you will be entered into a lottery to win $100. You can increase your probability of winning this prize as the number of times you will be entered into the lottery will be based on your performance. You have 4 minutes to complete this task. You have been provided with an envelope containing a pen and sheets of paper with the matrices. You will mark your answers on the provided matrix sheets. At the end of the 4 minutes, the computer will show you the correct answers and prompt you to calculate your overall score and enter it into the system. Once you complete the task, you have to bring the matrix sheets to the experimenter. The experimenter will

check your answers, record your overall score and based on your performance, you will be entered into the lottery as many times as your calculated correct score (each correct answer is equal to one entry). Then she will give your sheets back to you to drop them in the designated boxes. Once the study and the lottery are completed, you will receive an e-mail announcing the winner. Instructions to claim the prize of $100 will also be provided in this e-mail."

Since in this condition there was no ability to cheat and because the self-reported scores, which were entered into the computer by the participants, had no bearing on the number of times they would be entered into the lottery, there was no temptation in this condition, and therefore there was no need to engage in ethical decision making or any reason to self-control.

After the visual processing task, the blood glucose levels of the participants were assessed one more time.

Word completion task. After the third blood glucose test, participants engaged in the word completion task, which was the manipulation check for ethical decision making. Research indicates that individuals generate more words that have ethical salience in a word completion task if they have previously engaged in ethical decision making (Gino & Bazerman, 2009). Participants were asked to complete a word completion task in which they were asked to convert word fragments into meaningful words. In this task, participants were given five minutes to complete a total of 25 words with missing letters. Ten of these words were neutral, meaning that they could not be filled in to generate words that have ethical salience, whereas the other 15 words could be filled in with letters to create words that have ethical salience.

For example:

_ _ _ EST

This word could be completed as HONEST, which would indicate that the previous task

participants engaged in generated an ethical decision making situation for them. However, if they filled in the blanks creating the word BAREST, then this would indicate that the matrix task did not generate an ethical situation for these individuals.

Prediction for the number of correct responses reported by other participants. As the final survey in the study, participants were asked to fill out a brief questionnaire asking them about others' reported outcomes, which served as a control measure. After this final survey, participants were thanked and dismissed.

Manipulation checks. The second glucose test served as one of the manipulation checks to assess whether the depletion task led to more self-control than the no-depletion condition. Futhermore, participants were asked to indicate the difficulty level of the task (How difficult did you find the writing task?) and the amount of self-control they applied (How much self-control did you have to apply not to use the indicated letters in your essay?) using a scale from 1(not at all) to 5(very much). These two items were also used as manipulation checks.

The perception of the matrix task as an ethical decision making situation was operationalized as the number of ethically salient words generated by the participants. Two coders unaware of the hypotheses coded each response as either "ethically salient", which was coded as "1" or "neutral", which was coded as "0". The number of ethically salient responses were summed for a total ranging from 0 to 15. Disagreements were resolved via discussions between the coders.

Control measures. Seven control measures were included in this study:

Affect. The depletion task can generate negative emotions, such as frustration, which can lead to unintended differences between the experimental and control conditions in terms of their willingness to self-control. The PANAS scale (Watson, Clark & Tellegen, 1988; $\alpha = 0.86$ for

positive affect (PA); and α = 0.84 for negative affect (NA); n = 4,217) was used to control for differences between the two conditions. The PANAS scale includes 20 items, and participants are asked to indicate to what extent they are feeling the specified emotions (i. e. interested, distressed, excited, irritable, alert, ashamed, etc.) at the present moment on a scale from 1 (very slightly or not at all) to 5 (extremely) (α = 0.86 for PA; and α = 0.80 for NA).

Demographics. Age and gender can influence ethical decision making (O'Fallon & Butterfield, 2005) as well as self-control strength (Akers, 1991; Ameriks, Caplin, Leahy, & Tyler, 2004; Burton, et al., 1998). Two questions were used to target these variables: "How old are you?" and "What is your gender? Male, Female, prefer not to respond". Age was entered into the analysis as a continuous variable, whereas gender was entered as a categorical variable (Male = 0; Female = 1). None of the participants chose not to respond.

Value orientation for materialism. Richins and Dawson's (1992) value orientation for materialism scale (α = 0.85; n = 4,334 (Richins, 2004)) was used to control for the differences individuals would display in terms of how much value they place on materialism as previous research indicates that materialism can impact self-control (Rose, 2007). The value orientation scale consists of 18 items, and participants are asked to respond to the items using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). Some sample items from the scale are: I admire people who own expensive homes, cars, and clothes; Some of the most important achievements in life include acquiring material possessions; I usually buy only the things I need (R); I try to keep my life simple, as far as possessions are concerned (R) (α = 0.84).

Social desirability. Crowne and Marlowe's (1960, α = 0.80, n = 1553) social desirability scale was used as a control variable as previous research indicates that social desirability concerns can have an impact on the reported levels of moral identity (Aquino & Reed, 2002).

This measure consists of 33 items that either describe undesirable but common or desirable but uncommon behaviors, and participants are asked to respond to these items as "True" or "False". The scores can range from 0 to 33, and higher scores indicate a higher need for approval. Some sample items from this scale are: I never hesitate to go out of my way to help someone in trouble. (T); It is sometimes hard for me to go on with my work if I am not encouraged. (F); I have never intensely disliked anyone. (T); On occasion I have had doubts about my ability to succeed in life. (F) (Kuder Richardson Formula 20 = 0.31).

Hours of sleep participants had the night before the study. Previous research indicates that sleep deprivation can lead to less ability to self-control (Barber, Manz; Bagsby, & Powel, 2009; Drummond et al., 2005). To control for this, participants were asked: "How many hours of sleep did you get last night?" The data from this item was coded as a continuous variable ranging from 1-16.

Baseline glucose measurement. Previous research suggests glucose level in the blood as one of the influencers of self-control ability (Gailliott & Baumeister, 2007b, Gailliott et al., 2007); therefore participants' glucose levels at the beginning of the study could influence the participants' ability to self-control during the study. To control for this, participants' baseline glucose reading from the first glucose test, which measured milligrams of glucose per deciliter of blood, was coded as a continuous variable.

Prediction for the number of correct responses reported by other participants. It is possible that the participants' expectations about others' ethical behavior in the matrix task can shape their own ethical behavior or lack thereof. More specifically, aside from the impact of depletion, participants might be more inclined to cheat if they presume that others who are participating in the same research will inflate their scores. Therefore, these participants might

solely engage in unethical behavior to counteract the possible unethical behavior of others and to make up for the advantage that others might gain on them (Ajzen, 1985; Kavla, 1983; Tyson, 1990) as a result of inflating their reported correct responses. To control for this phenomenon, participants were asked "On average, what do you think is the reported obtained score by other participants in the visual processing task?", and the responses were coded as a continuous variable ranging from 1-20.

Measures.

Moral identity. The internalization dimension of the Moral Identity scale ($\alpha = 0.70$; $n = 330$, Aquino & Reed, 2002) was used as an independent variable. The internalization dimension of moral identity taps the self-importance of the moral characteristics at a private level and shows a strong relationship with moral reasoning and moral behavior. The socialization dimension has not been found to be indicative of moral behavior (Aquino & Reed, 2002), therefore participants were asked to respond to only the sub-scale for internalization. The sub-scale for the internalization dimension of moral identity consists of 5 items and uses a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Participants were asked to indicate how they felt about having certain characteristics, which have been identified as indicators of morality (i.e. caring, compassionate, fair, friendly, generous, hardworking, helpful, honest, kind). Some sample items from this scale are: It would make me feel good to be a person who has these characteristics; Being someone who has these characteristics is an important part of who I am; I would be ashamed to be a person who had these characteristics (R) ($\alpha = 0.82$).

Applied self-control. Previous research in ego-depletion indicates that blood glucose levels diminish when one applies self-control (Gailliott et al., 2007), therefore observed glucose drops in the blood were used as a proxy for applied self-control in the conducted research. More

specifically, applied self-control was operationalized as observed glucose level differences in milligrams per deciliters, which were measured via blood tests at three points in time (time 1 = pre- depletion; time 2 = after task depletion and prior to ethical task depletion; time 3 = post ethical task depletion). The observed change in the glucose measurement from time 1 to the glucose measurement at time 2 was entered into the analysis as a continuous variable as the indicator of applied self-control during the writing task. The observed change in the glucose measurement at time 2 to the glucose measurement at time 3 was entered into the analysis as a continuous variable as the indicator of applied self-control during the ethical decision making task.

Ethical behavior. Ethical behavior was operationalized as a binary variable (1 = ethical behavior; 0 = unethical behavior) based on the difference between the reported number of correct answers in Qualtrics and the actual number of correct responses. If the reported number of correct answers exceeded the number of correct answers checked on the matrix sheet, this was coded as unethical behavior. On the other hand, if the reported number of correct answers matched the number of correct answers checked on the matrix sheet, this was coded as ethical behavior. If the number of correct answers reported in Qualtrics was less than the number of correct answers checked on the matrix sheet, this was coded as ethical behavior.

Self-control strength. Self-control strength was operationalized using Tangney, Baumeister, and Boone's (2004) self-control scale ($\alpha = 0.85$; $n = 606$). This scale consists of 36 items asking participants about their self-control practices such as eating habits, study habits, drug and alcohol in-take, as well as more general questions, such us speaking one's mind or acting impulsively. Participants were asked to respond to the questions using a 5-point scale (1=not at all; 5=very much). Some sample items are: I am good at resisting temptation; I have a

hard time breaking bad habits (R); People can count on me to keep on schedule; I say inappropriate things (R) ($\alpha = 0.88$).

Response time. Prior research shows that individuals who are contemplating their decision when faced with an ethical situation spend more time prior to making a final decision (Zhong et al., 2010), therefore the deliberation time of the participants was measured in seconds as the time elapsed between the time participants were prompted by the computer to enter their score on the number matrix and the time they made the entry.

Data Analysis and Results

The next section discusses the data analysis and results for Study 1, and is formulated of two parts: manipulation checks and hypothesis testing. Table 1 presents the descriptive statistics for Study 1 by condition.

Manipulation Checks

A total of four manipulation checks were conducted. The first manipulation check tested whether there were baseline glucose level differences between conditions. The second manipulation check tested whether the study design generated differences in terms of applied self-control. The third manipulation check tested whether the conditions generated the desired differences in terms of the ethical decision making process. The final manipulation check tested whether the study design caused any differences in terms of affect.

Baseline glucose levels. Baseline glucose levels might have impacted the level of experienced depletion during the depletion task, therefore participants' glucose levels at the beginning of the study (time 1) were analyzed using a 2 (depletion vs. no depletion) x 2 (temptation vs. no temptation) ANOVA. The results suggested no significant differences between the depletion ($M = 102.08$, $SD = 8.78$) and no-depletion ($M = 102.03$, $SD = 11.92$)

conditions in terms of initial self-control ability based on available self-control resources ($F[1,164] = 0.030$, $p = 0.957$; $\eta_p^2 < 0.001$). Futhermore, no significant differences were observed in baseline glucose levels between the temptation ($M = 102.26$, $SD = 10.13$) and no temptation ($M = 101.84$, $SD = 10.65$) conditions either ($F[1,164] = 0.104$, $p = 0.747$; $\eta_p^2 = 0.001$). Finally, there was no interaction effect of the temptation and depletion conditions on the baseline glucose level of participants ($F[1,164] = 1.760$, $p = 0.187$).

Applied self-control. To test whether the depletion and the ethical decision making tasks generated the desired differences in terms of applied self-control, a 2 (depletion vs. no depletion) x 2 (temptation vs. no temptation) x 3 (Glucose measure 1 vs. Glucose measure 2 vs. Glucose measure 3) repeated measures ANOVA was conducted, where depletion and temptation were the between-subjects variables and the measurement of glucose at the three periods was the within-subjects variable. Refer to Table 2 for means and standard errors within and across conditions.

The between-subjects test, showed that depletion ($F[1,164] = 3.528$, $p = 0.062$; $\eta_p^2 = 0.021$), temptation ($F[1,164] = 0.453$, $p = 0.502$; $\eta_p^2 = 0.003$) and the interaction of depletion and temptation ($F[1,164] = 2.320$, $p = 0.130$; $\eta_p^2 = 0.014$) were not significant predictors of the average glucose level of participants.

The within-subjects test, on the other hand, revealed that the mean glucose significantly differed between the three time points ($F(2, 328) = 26.325$, $p<0.001$, $\eta_p^2 = 0.138$). In other words, the mean glucose difference was significant from Measurement 1 ($M_{measurement1} = 102.05$, $SD = 10.37$) to Measurement 2 ($M_{measurement2} = 100.10$, $SD = 11.15$) ($p<0.05$), from Measurement 2 to Measurement 3 ($M_{measurement3} = 98.63$, $SD = 10.90$) ($p<0.05$), and from Measurement 1 to Measurement 3 ($p<0.05$). Additionally, the mean glucose change significantly differed between the depletion ($M_{measurement1} = 102.08$, $SD = 8.78$; $M_{measurement2} = 97.28$, $SD = 9.16$; $M_{measurement3} =$

97.23, SD = 10.07) and no depletion ($M_{measurement1}$ = 102.03, SD = 11.92; $M_{measurement2}$ = 103.20, SD = 12.32; $M_{measurement3}$ = 100.16; SD = 11.63) conditions, $F(2, 328) = 21.072$, $p<0.001$, $\eta_P^2 = 0.114$. The mean glucose change also significantly differed between the temptation ($M_{measurement1}$ = 102.26, SD = 10.13; $M_{measurement2}$ = 99.88, SD = 10.64; $M_{measurement3}$ = 96.98, SD = 8.85) and no temptation ($M_{measurement1}$ = 101.84, SD = 10.65; $M_{measurement2}$ = 100.33, SD = 11.71; $M_{measurement3}$ = 100.31, SD = 12.50) conditions, $F(2, 328) = 9.42$, $p<0.001$, $\eta_P^2 = 0.054$. There was no significant interaction effect of temptation and depletion on mean glucose changes between the three glucose measurements, $F(2, 328) = 1.508$, $p = 0.223$, $\eta_P^2 = 0.009$.

Next, to test whether the writing task generated the desired differences in applied self-control, first a 2 (depletion vs. no depletion) x 2 (temptation vs. no temptation) ANOVA was run on participants' reported experienced difficulty, and then a 2 (depletion vs. no depletion) x 2 (temptation vs. no temptation) ANOVA was run on participants' self-reported applied self-control during the writing task.

The results from the first ANOVA analysis revealed that the manipulation generated the desired results ($F [1,164] = 325.826$, $p<0.001$, $\eta_P^2 = 0.665$). Participants in the depletion condition reported experiencing significantly more difficulty during the writing task (M = 4.18, SD = .95) than the participants in the no depletion condition (M = 1.56, SD = .91), while no significant differences were observed ($F[1,164] = 0.263$; $p = 0.609$, $\eta_P^2 = 0.007$) between the temptation and no-temptation conditions ($M_{temptation}$ = 2.88, SD = 1.66; $M_{no\text{-}temptation}$ = 2.99, SD = 1.57). Additionally, there was no interaction effect of the effects of temptation and depletion on participants' reported experienced difficulty during the writing task ($F[1,164] = 0.040$; $p = 0.842$, $\eta_P^2 = 0.000$).

The second ANOVA analysis also indicated that the manipulation influenced

participants' self-reported applied self-control (F [1,164] = 138.600, $p<0.001$, $\eta_P^2 = 0.458$) as participants in the depletion condition reported applying significantly more self-control during the writing task (M = 4.05, SD = 0.96) than participants in the no depletion condition (M = 2.10, SD = 1.18), while no significant differences were observed (F[1,164] = 0.049; p = 0.824, $\eta_P^2 = 0.000$) across the temptation conditions ($M_{no\text{-}temptation} = 3.14$, SD = 1.38; $M_{temptation} = 3.09$, SD = 1.51). Moreover, there was no interaction effect of temptation and depletion on participants' reported applied self-control during the writing task (F[1,164] = 1.754, p = 0.187, $\eta_P^2 = 0.000$).

Ethical decision making process. The data from the word completion task was analyzed to test whether the ethical temptation condition led to an ethical decision making process. First, Spearman's rho (Spearman's rho = 0.91, $p<0.01$) as well as intraclass correlation coefficients were calculated (ICC = 0.901, $p<0.001$; average measure ICC = 0.948; $p<0.001$; $\alpha = 0.95$) to check for inter-rater reliability. The results indicated significant agreement between the raters (F[1,164] = 214.146; $p<0.001$). Next, a 2 (depletion vs. no depletion) x 2 (temptation vs. no temptation) ANOVA was conducted on the number of ethically salient words generated. Contrary to expectations, the results of the ANOVA indicated that the participants in the temptation condition (M = 4.12, SD = 0.276) did not generate more ethically salient words than participants in the no-temptation condition (M = 3.76, SD = 0.280), F[1,164] = 0.819, p = 0.367; $\eta_P^2 = 0.001$). Futhermore, again contrary to expectations, results suggested that participants who were initially depleted did not generate fewer ethically salient words (M = 3.76, SD = 0.271) than the participants who were not initially depleted (M = 4.12, SD = 0.285; F[1,164] = 0.846, p = 0.359, $\eta_P^2 = 0.005$). Finally, results indicated no significant impact of the interaction of depletion and temptation on the number of ethically salient words generated by the participants (F[1,164] = 1.886, p = 0.590, $\eta_P^2 = 0.002$).

Affect. To test whether the depletion condition generated any differences among the participants in terms of positive and negative affect, a 2 (depletion vs. no depletion) X 2 (temptation vs. no temptation) MANOVA analysis was conducted on positive and negative affect. The results indicated no significant differences in terms of participants' levels of positive affect ($F [1,164] = 0.292$, $p = 0.590$; $\eta_p^2 = 0.002$) or negative affect ($F [1,164] = 0.743$, $p = 0.390$, $\eta_p^2 = 0.005$) between the depletion ($M_{PA} = 2.67$, $SD = 0.79$; $M_{NA} = 1.60$, $SD = 0.53$) and no-depletion ($M_{PA} = 2.61$, $SD = 0.75$; $M_{NA} = 1.52$, $SD = 0.55$) conditions. Furthermore, the results indicated no significant differences in terms of participants' levels of positive affect ($F [1,164] = 0.653$, $p = 0.420$, $\eta_p^2 = 0.004$) or negative affect ($F [1,164] = 0.240$, $p = 0.625$, $\eta_p^2 = 0.001$) between the temptation ($M_{PA} = 2.60$, $SD = 0.74$; $M_{NA} = 1.54$, $SD = 0.52$) and no-temptation ($M_{PA} = 2.70$, $SD = 0.80$; $M_{NA} = 1.59$, $SD = 0.55$) conditions. Finally, results indicated no significant interaction of depletion and temptation on positive affect ($F [1,164] = 0.260$, $p = 0.513$, $\eta_p^2 = 0.000$) or negative affect ($F [1,164] = 0.001$, $p = 0.979$, $\eta_p^2 = 0.001$).

Hypothesis Testing

Moral identity and applied self-control. Hypothesis 1 predicted that depleted individuals who have more central moral identities would apply more self-control, compared to depleted individuals who have less central moral identities. To test this hypothesis, an OLS regression analysis was conducted using only the data in the temptation condition by regressing moral identity, depletion and the interaction of depletion and moral identity on the glucose level change experienced by the participants during the ethical decision making task. Following the recommended moderated regression procedures of Aiken and West (1991), control variables (age, gender, beliefs about others' reported performance, materialism, negative affect, positive affect, self-control, social desirability, amount of sleep participants had the night before, and

initial glucose level) were entered in Step 1, the main effects (depletion and moral identity) were entered in Step 2, and the interaction between moral identity and depletion condition was entered in Step 3. Moral identity was centered before entering it in the interaction term in this analysis as well as for the other regression analyses conducted in Study 1 and Study 2, which contained the same interaction term.

Results from this regression analysis suggested that the first step, which contained the control variables, was significant ($F[10,74] = 6.087$, Adjusted $R^2 = 0.377$, $p<0.001$). Self-control strength ($\beta = 0.575$, $p<0.001$) and initial glucose levels ($\beta = 0.289$, $p<0.01$) were significant predictors of applied self control while age, gender, social desirability, hours of sleep participants had the night before, and participants' predictions about others' performance were not (Refer to Table 3 for the results of this regression analysis). More specifically, individuals with more self-control strength and who had higher initial glucose levels applied more self-control during the ethical decision making task.

When moral identity and depletion were added into the regression in Step 2 ($F[12,72] = 9.959$; Adjusted $R^2 = 0.561$, $p<0.001$), the analysis indicated both moral identity ($\beta = 0.242$, $p<0.01$) and depletion ($\beta = -0.374$, $p<0.001$) as predictors of applied self-control. However, these main effects were qualified by the interaction of moral identity and depletion ($\beta = 0.235$, $p<0.01$), $F[13,71]= 10.290$, $p<0.001$, Adjusted $R^2 = 0.590$, $p<0.05$).

To understand the nature of this interaction, a simple slope analysis was conducted (Refer to Figure 3). The results showed that depleted participants with more central moral identities experienced greater glucose decreases in comparison to depleted participants with less central moral identities, ($t = 7.317$, $p<0.001$), supporting Hypothesis 1. The analysis suggested no impact of centrality of moral identity on applied self-control within the no-depletion condition (t

= 1.805, p = 0.075).

Applied self-control as a mediator. Hypothesis 2 predicted that applied self-control would mediate the relationship between moral identity and ethical behavior. The suggested mediation analysis assumed that fewer participants in the depletion condition would engage in ethical behavior than in the no depletion condition. To test for this, a Chi-square analysis was conducted. The results indicated a significant difference between the two conditions as more participants engaged in ethical behavior in the no-depletion condition (70.7%, 29 out of 41) than in the depletion condition (45.5%, 20 out of 44), $\chi^2(1, N = 85) = 5.554$, $p < 0.05$.

Mediation analysis. Next, a mediation analysis was conducted to test whether self-control mediates the relationship between moral identity and ethical behavior, as proposed in Hypothesis 2. The mediation analysis was conducted using two methods: Baron and Kenny's (1986) four step approach and the SOBEL test.

Mediation analysis using Baron and Kenny's four step approach. Based on the procedures of Baron and Kenny's (1986) four step approach, first the zero-order relationships that exist among the three main effects need to be tested. If all these main effects are significant, then the outcome variable is regressed on the independent variable and the suggested mediated variable. If the significance of the independent variable disappears while controlling for the proposed mediator, this indicates a full mediation. If the relationship between the independent variable and the outcome variable significantly diminishes when controlling for the proposed mediator, this suggests a partial mediation (Baron & Kenny, 1986).

Accordingly, for the proposed mediation four separate analyses need to be conducted: first, the first order relationships (Step 1: Moral Identity X Depletion > Ethical behavior, Step 2: Applied self-control > Ethical behavior, Step 3: Moral Identity X Depletion > Applied self-

control) need to be tested while controlling for the control variables (age, gender, initial glucose measurement, self-control, social desirability, materialism, predictions about others' performance, hours of sleep from the previous night, negative affect, positive affect, and depletion); then the impact of moral identity on ethical behavior has to be tested while controlling for applied self-control and the other control variables.

In Step 1, a logistic regression analysis was conducted by regressing ethical behavior on moral identity, depletion condition and the interaction of moral identity and depletion. The control variables (age, gender, the number of correct answers expected to be reported by others, materialism, negative affect, positive affect, self-control, social desirability, hours of sleep participants had the night before, and the first glucose measurement) were entered in Block 1, moral identity and depletion were entered in Block 2, and the interaction term between moral identity and depletion was entered in Block 3.

Results ($\chi^2(11, N = 85) = 31.274$, $p<0.01$; -2 log likelihood = 84.565, $p<0.01$) indicated that one's self-control strength (Exp(B) = 1.055, 95% CI[1.015 – 1.096], Wald = 7.462, $p<0.01$) and available self-control resources (Exp(B) = 1.064, 95% CI[1.005 – 1.128], Wald = 4.512, $p<0.05$) were significant predictors of ethical behavior while gender, age, materialism, social desirability, hours of sleep participants had the night before, the number of correct answers expected to be reported by others, positive affect, and negative affect did not have a significant impact (refer to Table 4 for results of this analysis). Additionally, adding moral identity and depletion into the analysis significantly improved the model ($\chi^2(12, N = 85) = 43.813$, $p<0.001$, -2 log likelihood = 72.026, $p<0.001$), and this analysis revealed moral identity (Exp(B) = 1.617, 95% CI[1.179 – 2.217], Wald = 8.895, $p<0.01$) and depletion (Exp(B) = 0.122, 95% CI[0.030 – 0.497], Wald = 8.607, $p<0.01$) as significant predictors of ethical behavior. However, these main

effects were qualified by the interaction of depletion and moral identity (Exp(B) = 7.770, 95% CI[1.332 – 45.313], Wald = 5.193; $p<0.05$), χ^2 (13, N = 85) = 55.612, $p<0.001$, -2 log likelihood = 60.227, $p<0.01$).

Next, a simple slopes test was conducted to explore the nature of this interaction. For binary dependent variables, Dawson (in press) recommends setting the moderator at different values of interest while running the model and using the beta values of the independent variable to test for the significance of the simple slopes. Therefore, the simple slopes test was conducted by first regressing the control variables (age, gender, predictions about the number of tickets collected by other participants, materialism, negative affect, positive affect, self-control strength, social desirability, hours of sleep participants had the night before, and initial glucose levels), moral identity, depletion and the interaction of moral identity on ethical behavior using a logistic regression analysis with the depletion variable set at "0" to test for the significance of the slope representing the impact of moral identity on ethical behavior when participants were not initially depleted. The results indicated that centrality of moral identity did not generate significant differences in ethical behavior in the no-depletion condition ($\beta = 0.257$, $p = 0.130$).

When the logistic regression analysis was re-run with the depletion variable set at "1" to test for the significance of the slope representing the impact of moral identity on ethical behavior when participants were initially depleted, on the other hand, the results suggested that centrality of moral identity generated significant differences in the probability of engaging in ethical behavior ($\beta = 1.693$, $p <0.05$). More specifically, depleted participants with more central moral identities were more likely to engage in ethical behavior than depleted participants with less central moral identities. Therefore, the simple slopes test suggested that centrality of moral

identity increased the likelihood of engaging in ethical behavior only in the depletion condition (Refer to Figure 4).

In Step 2, as the second first-order relationship, the impact of applied self-control on ethical behavior was tested using a logistic regression analysis while controlling for age, depletion, gender, the number of correct answers expected to be reported by others, materialism, negative affect, positive affect, self-control, social desirability, hours of sleep participants had the night before, and the first glucose measurement. The control variables were entered in Block 1 of this analysis while applied self-control was added into the model in Block 2 (refer to Table 4 for results of this analysis). Results (χ^2 (11, N = 85) = 31.274, $p<0.01$, -2 log likelihood = 84.565, $p<0.01$) indicated that depletion (Exp(B) =.145, 95% CI[0.410 – 0.508], Wald = 9.088, $p<0.01$), initial glucose levels (Exp(B) = 1.071, 95% CI[1.003 – 1.144], Wald = 4.190, $p<0.05$), and self-control strength (Exp(B) = 1.077, 95% CI[1.028 – 1.129], Wald = 9.685, $p<0.01$) were significant predictors of ethical behavior while the other control variables did not have a significant impact (Refer to Table 5 for the results of this logistic regression analysis).

Adding applied self-control into the model significantly improved the model (χ^2 (12, N = 85) = 58.884, $p<0.001$, -2 log likelihood = 56.955, $p<0.001$) as the analysis revealed that applied self-control (Exp(B) = 1.580, 95% CI[1.241 – 2.010], Wald = 13.802, $p<0.001$) was a significant predictor of ethical behavior. In other words, individuals who applied more self-control during the ethical decision making task were significantly more likely to engage in ethical behavior than individuals who applied less self-control. Furthermore, the results suggested age (Exp(B) = 0.734, 95% CI[0.552 – 0.975], Wald = 4.546, $p<0.05$) as a significant predictor of ethical behavior, as participants who were younger were more likely to engage in ethical behavior. None of the other control variables were significant predictors of ethical behavior in the second

block of this analysis.

Step 3 of this analysis was already conducted during the testing of Hypothesis 1. Results of this previous analysis (Refer to Table 2 for results of this analysis), as reported, indicated that the interaction of moral identity and depletion was significant in predicting the level of applied self-control when controlling for gender, age, materialism, social desirability, hours of sleep participants had the night before, the number of correct answers expected to be reported by others, positive and negative affect, participants' initial glucose levels and self-control strength.

In Step 4, since all three first order relationships were significant, following the mediation procedures of Baron and Kenny, ethical behavior was this time regressed on moral identity, depletion, the interaction of moral identity and depletion and applied self-control using a logistic regression analysis, while controling for age, gender, initial glucose levels, self-control strength, materialism, social desirability, beliefs about others' reported performance, amount of sleep participants had the night before, and positive and negative affect. Results (χ^2 (14, N = 85) = 67.222, $p<0.001$, -2 log likelihood = 48.617, $p<0.001$) indicated that once applied self-control was added into the model, moral identity, depletion and the interaction of moral identity and depletion were no longer significant predictors of ethical behavior while applied self-control emerged as the sole predictor of ethical behavior (Exp(B) = 1.463, 95% CI[1.092 – 1.961], Wald = 6.497; $p<0.05$). This suggested that applied self-control fully mediated the relationship between ethical behavior and the interaction of moral identity and depletion (Refer to Table 6 for results of this analysis). Therefore, Hypothesis 2 was supported.

Mediation analysis with Sobel test. Baron and Kenny's four step mediation analysis has been cricitized for not actually testing for the significance of the indirect pathway and sometimes missing true mediation effects (MacKinnon, Fairchild, & Fritz, 2007; Preacher & Hayes, 2004),

therefore; following Preacher and Hayes' (2004) guidelines, the data was also analyzed using the SOBEL test on SPSS to test for the suggested indirect effect. The results replicated the findings from Baron and Kenny's four step mediation analysis, suggesting that applied self-control serves as a mediator between moral identity and ethical decision making (SOBEL test statistic = 2.08, $p < 0.05$), supporting Hypothesis 2.

Long-term effect of moral identity on self-control. Hypothesis 3 predicted that individuals with more central moral identities have more self-control strength compared to individuals with less central moral identities. This hypothesis was tested with a regression analysis controlling for gender, age, materialism, and social desirability. The regression analysis ($F[5,162] = 8.683$, $p<0.001$, adjusted $R^2 = 0.187$) suggested that moral identity positively impacted self-control ($\beta = 0.327$, $t = 4.514$, $p<0.001$), supporting Hypothesis 3. Social desirability ($\beta = -0.152$, $t = -2.134$; $p<0.05$) and materialism ($\beta = -.317$, $t = -4.477$, $p<0.001$) were also significant predictors in this analysis while age ($\beta = -0.043$, $t = -0.598$, $p = 0.970$) and gender ($\beta = 0.026$, $t = 0.369$, $p = 0.649$) were not predictors of self-control strength (Refer to Table 7 for the results of this analysis).

Moral identity and temptation. Hypothesis 4a predicted that participants with more central moral identities would spend more time in the temptation condition than participants with more central moral identities in the no-temptation condition; and Hypothesis 4b predicted that depleted participants with more central moral identities who were in the temptation condition would spend more time contemplating their decision in comparison to participants with more central moral identities who were in the temptation condition but who were not initially depleted.

To test these hypotheses, the response time data from both the temptation and no-temptation conditions was first analyzed for skewedness. The descriptives (skewedness = 2.387,

SD = 0.187) as well as the test of normality indicated that the response time data was positively skewed (Shapiro-Wilk statistic = 0.798; df = 168, $p<0.001$). The histogram of the response time data also indicated that the data was skewed (Refer to Figure 5).

Therefore, the data was transformed using a square root and a log_10 transformation. The log_10 transformation generated the best results as both the descriptives (skewedness statistic = -0.041, SD = 0.187) and the test of normality (Shapiro-Wilk statistic = 0.994, df = 168, p = 0.679) indicated that the distribution of the response time data was normal after the transformation (Refer to Figure 6).

After the transformation, Hypothesis 4a and Hypothesis 4b were tested using an OLS regression analysis. The control variables (age, gender, prediction about others' reported performance, materialism, negative emotion, positive emotion, self-control strength, social desirability, hours of sleep from the night before, and participants' initial glucose levels) were regressed on the log_10 transformation of the response time during the self-reporting of performance in the matrix task in Step 1; moral identity, depletion, and temptation were entered into the analysis in Step 2; the interaction term of moral identity and temptation was entered in Step 3; and the interaction terms of moral identity and depletion, temptation and depletion and the three-way interaction of moral identity, temptation, depletion were entered in Step 4.

The results (Refer to Table 8 for results of this analysis) indicated self-control strength ($\beta = 0.174$, $t = 2.092$, $p<0.05$), initial glucose levels of the participants ($\beta = -0.161$, $t = -2.082$, $p<0.05$), positive affect ($\beta = 0.191$, $t = 2.469$, $p<0.05$), and predictions about other participants' behavior ($\beta = 0.186$, $t = 2.449$, $p<0.05$) as significant predictors of time spent during self-reporting of one's performance. More specifically, participants who had more self-control strength, who had lower levels of initial glucose levels, who felt more positive emotions, who

expected others to report higher scores, and who had more self-control strength spent more time deciding what to report as their performance. None of the other control variables were significant in this analysis.

Adding moral identity, temptation, and depletion into the model significantly improved the model ($F[13,154] = 2.557$, $p<0.01$, adjusted $R^2 = 0.117$) as depletion also emerged as a significant predictor of time spent during contemplating what to report as one's performance in the matrix task ($\beta = 0.202$, $t = 2.667$; $p<0.01$). More specifically, participants who were initially depleted spent significantly more time during the decision making phase than participants who were not initially depleted. However, the addition of the two-way interaction term of moral identity and temptation to the model in Step 3 did not make any significant changes ($F [14,153] = 2.572$, $p<0.01$, adjusted $R^2 = 0.116$), as the interaction of moral identity and temptation was not a significant predictor of time spent while participants decided about what they would report as their performance. Therefore, Hypothesis 4a, which predicted that participants with more central moral identities would spend more time in the temptation condition than participants with more central moral identities in the no-temptation condition was not supported.

Finally, once the two-way interaction terms of moral identity and depletion, temptation and depletion and the three-way interaction of moral identity, temptation, and depletion were entered into the model in the final step, the model improved significantly one more time ($F[17,150] = 2.565$, $p<0.01$, adjusted $R^2 = 0.137$). This final step revealed the product of moral identity and temptation as a significant predictor of time spent ($\beta = -0.253$, $t = -2.073$), however this interaction was qualified by the three way interaction of depletion, temptation, and moral identity, which was also significant ($\beta = 0.272$, $t = 1.952$, $p = 0.05$).

Next, a simple slopes analysis was conducted to test Hypothesis 4b. The simple slopes test (Refer to Figure 7) suggested significant time differences between participants with more central and less central moral identities in the temptation condition if these individuals' were not initially depleted ($t = -2.531$, $p<0.05$). More specifically, in the temptation condition, centrality of moral identity led to using significantly less time during self-reporting if there was no initial depletion.

Additionally, being in the temptation condition generated significant time differences not only between depleted and non-depleted participants with less central moral identities but also between depleted and non-depleted participants with more central moral identities ($t = 2.465$, $p<0.05$). In other words, in the temptation condition, depleted participants with less central moral identities spent less time than participants with less central moral identities who were not initially depleted. On the other hand, depleted participants with more central moral identities spent significantly more time than participants with more central moral identities who were not initially depleted if they were in the temptation condition. Therefore, Hypothesis 4b was supported. None of the other slopes or slope differences were significant in this simple slopes analysis.

Discussion

Study 1 tested if individuals with more central moral identities relied on their ability to self-control to engage in ethical behavior similar to individuals with less central moral identities by manipulating experienced depletion. Additionally, Study 1 tested whether moral identity led to overall increased self-control strength.

The manipulation checks indicated that the depletion condition generated the desired impact in terms of depletion of participants' self-control resources while the control (no-

depletion) condition did not generate a need to tap one's self-control resource pool. The manipulation checks also indicated that there were no observed differences between the depletion and no-depletion conditions in terms of positive or negative affect, so none of the observed results could be attributed to emotional differences that the experimental condition could have generated. Finally, the manipulation check for the temptation and no-temptation conditions suggested that, contrary to what was intended, there were no significant difference in ethical processing between the two conditions. A closer look at the data indicated that some of the participants in the no-temptation condition also cheated, suggesting that at least some of the participants in this condition were also tempted, which could partially account for the lack of differences between the two conditions in terms of ethical processing.

Although the manipulation check for ethical processing indicated no significant differences in ethical decision making process based on depletion, the levels of applied self-control experienced by the participants in the depletion condition painted a different picture. More specifically, participants applied more self-control when facing an ethical decision making task if they were not previously depleted, while depleted participants applied less self-control in the same situation. Additionally, centrality of moral identity increased applied self-control in the depletion condition, while no impact of moral identity was observed within the no-depletion condition. This finding could be attributed to the differences in the level of available self-control resources. More specifically, when participants were not depleted, regardless of the centrality of their moral identities, a higher percentage of participants could tap into their readily available self-control resource pool to engage in ethical behavior. When self-control resources were initially depleted, however, the ability to apply self-control diminished, especially for those who had less central moral identities.

Additionally, one's self-control strength and initial glucose levels were significant predictors of applied self-control while age, gender, belief about others' reported performance, the amount of sleep participants had the night before and positive and negative affect did not have any impact on one's applied self-control levels. Particularly, participants who had more self-control strength and who had higher levels of initial blood glucose could apply more self-control during the ethical decision making task. The observed impact of initial glucose levels on applied self-control was in line with previous findings from the ego-depletion literature, which also indicated that having higher glucose levels increased participants' ability to self-control (Gailliot et al., 2007).

Depletion negatively impacted the probability of ethical behavior as well, however having a more central moral identity helped individuals engage in ethical behavior even when there was initial depletion. This was fully explained by applied self-control. In other words, depleted participants who had more central moral identities were more likely to engage in ethical behavior in comparison to depleted participants with less central moral identities because they still managed to apply self-control despite the initial depletion.

Depletion also influenced the amount of time participants spent while deciding whether to act ethically or not in the face of an ethical temptation. More specifically, participants who had less self-control resources available to them had a harder time while choosing between the ethical and unethical courses of action in comparison to participants who had their self-control resources intact. Additionally, participants who had less self-control resources available to them prior to depletion and who predicted that others would report higher performance levels also needed more time to make a decision indicating that these individuals had to contemplate more about how to act when facing an ethical temptation.

Participants who reported feeling more positive affect also spent more time contemplating their ethical decision. Positive affect has been associated with self-control (Isen & Reeve, 2005) and ethical behaviors (Gaudine &Thorne, 2001), therefore the observed impact of positive affect on contemplation time could indicate the on-set of self-control in the face of an ethical temptation, which translated into longer contemplation time for these individuals as they tried to overcome the temptation they experienced.

Furthermore, depleted participants with more central moral identities spent more time contemplating their decision than participants with more central moral identities who were not initially depleted if they were facing an ethical temptation. Prior research shows that individuals who are contemplating their decision when faced with an ethical situation spend more time prior to making a final decision (Zhong et al., 2010), therefore, the amount of time these individuals spent indicated that even individuals with more central moral identities engaged in a process of ethical decision making when they were faced with an ethical temptation rather than engaging in an automatic process. Additionally, although it was easier for participants with more central moral identities to decide about how to act when there was an ethical temptation, not having enough self-control resources made this situation more of a challenge even for these individuals as they needed more time to decide about their course of action if they were previously depleted.

Finally, a long-term relationship between moral identity and self-control strength was observed as individuals with more central moral identities had more self-control strength than individuals with less central moral identities. This finding was in line with the results indicating that centrality of moral identity could lead to applied self-control even when self-control resources were not at optimum levels. In other words, the two findings together suggested that participants with more central moral identities practiced self-control in the ethical domain even

when their self-control resources were not at optimum levels, which in return strengthened their self-control muscles in the long-run.

Chapter 4

Study 2

Using the dual task paradigm, Study 2 was conducted to test whether moral identity can still lead to ethical decision making in the absence of self-control resources. In contrast to Study 1, in Study 2, participants' biological self-control resources, namely blood glucose levels, were manipulated via over-night fasting so that the blood glucose levels would be at a bare minimum level, which would not allow for self-control in the face of an ethical temptation.

Methods

Participants and Design

Data was collected from 86 individuals. The participants were recruited from undergraduate students from a Northeastern University, who were fulfilling a research requirement for a Management class. Four participants were excluded from the analysis due to missing data. Participants were randomly assigned to either the depletion (N = 41) or no-depletion (N = 41) condition. Sixty-eight percent of the participants were male, and the average age of the participants was 19.87 (SD = 2.63).

Procedure

Similar to Study 1, Study 2 also consisted of two sessions. Session one was an online session and session two was in a laboratory setting. Session one took place online one week before the laboratory session, and participants were asked to complete a survey on Qualtrics, including scales for the internalization dimension of moral identity (Aquino & Reed, 2002) and self-control (Tangney, Baumeister, & Boone, 2004). This survey also included the scale for value orientation for materialism (Richins & Dawson, 1992) and demographic questions about age and gender as prior research indicates that these variables can impact ethical decision making

(O'Fallon & Butterfield, 2005). A measure of social desirability (Crowne & Marlowe, 1960) was also included in the survey as the items on the moral identity scale have been found to be somewhat sensitive to social desirability concerns (Aquino & Reed, 2002).

The laboratory session took place one week after the online survey. This study manipulated glucose levels to deplete participants' self-control resources. Therefore, participants who were assigned to the depletion condition were instructed not to eat and/or drink anything other than plain water for four hours prior to their assigned sesssion for this experiment. To further deplete the participants, the sessions took place very early in the morning so that participants would be hungry. Upon arrival, participants were told that the session was a two part study: a visual processing task and a word completion task. Then they were asked to complete the first manipulation check, which was a short questionnaire asking the participants' about the timing of their last food and drink in-take. Furthermore, since sleep deprivation has been linked to diminished ability to self-control (Barber, Manz; Bagsby, & Powel, 2009; Drummond et al., 2005), participants were also asked to report the amount of sleep they had the night before.

After completing the manipulation check, all participants were asked to drink an iced-tea prior to engaging in the second task, which was the ethical decision making task. Following Galliott et al.'s (2007) instructions, to increase the difference in glucose levels between the experimental and control groups, individuals who were in the no-depletion condition were served iced-tea that was sweetened with sugar, whereas individuals who were in the depletion condition were served iced-tea sweetened with a sugar substitute (Splenda). After the participants were served these drinks, they were given a second survey, which contained the PANAS scale (Watson, Clark, & Tellegen, 1988). Once participants completed the second survey, they were

tested for baseline blood glucose levels (Time 1).

Visual processing task. Next, participants engaged in the ethical decision making task, which was the same task from Study 1 (Mazar, Amir and Ariely, 2008). At the beginning of the task, all participants were informed that they would be entered in a lottery to win $100 based on their performance in the following task. In this task, participants were given sheets with 20 matrices. Participants were asked to find two numbers per matrix that add up to 10 within a 4 minute time frame (Mazar, Amir, & Ariely, 2008) with the following instructions.

> *"Welcome to the visual processing task. In this task you are asked to look at each of the 20 matrices one at a time and find two numbers per matrix that add up to 10. According to your performance on this task, you will be entered into a lottery to win $100. You can increase your probability of winning this prize as the number of lottery tickets you will receive at the end of this task will be based on your performance. You have 4 minutes to complete this task. You have been provided with a pen, an envelope with 20 lottery tickets and sheets with questions.* ***Please do not put your name or Student ID number on the sheets or the envelope.*** You are *asked to work on the 20 matrices for 4 minutes and mark your answers on the question sheets for each of the matrices as you work on each question. At the end of the 4 minutes, the computer will show you the correct answers and prompt you to calculate your overall score based on your markings on the matrices. Based on this score, you are asked to take the number of lottery tickets that you earned from the stack of lottery tickets in the envelope (each point is equal to one lottery ticket). After you take your tickets, please drop all the envelopes and pens into the boxes, and question sheets into the recycling bin that are placed in the middle of the room. Once the study and the lottery is completed, you will receive an e-mail with the winning number. Instructions to claim the prize of $100 will also be provided in this e-mail."*

The number of tickets the participants took from the envelope ostensibly could not be linked to their actual performance, therefore this task provided participants the opportunity to

steal, which made it an ethical decision making task, and it was up to the participants to control themselves despite the temptation of the prize of $100. In actuality, participants' matrix sheets and the envelopes that contained the lottery tickets were marked with identification numbers using an invisible ink pen. The identification numbers were the same identification numbers that were used during the recording of the glucose measurements to allow for linking the participants' actual performance with their reported performance during data analysis.

Word completion task. Participants then engaged in the word completion task, which served as the manipulation check. Participants were given five minutes to complete the same list of 25 words from Study 1.

Prediction for the number of correct responses reported by other participants. After the word completion task was completed, participants were asked to fill out a final questionnaire, which asked for their predictions about the number of tickets other participants would claim for the matrix task. After this final questionnaire, participants were thanked and dismissed.

Manipulation checks. The first manipulation check was conducted to ensure that participants followed the fasting instructions. To check for this, participants were asked: "When was the last time you consumed any food?", and "When was the last time you drank any beverages other than water?" Both questions were asked before they engaged in the two tasks. In addition, the results from the first glucose test were also used as a manipulation check to test whether participants followed the fasting instructions. Glucose levels were reported in milligrams of glucose per deciliter of blood. The perception of the matrix task as an ethical decision making situation was operationalized as the number of ethically salient words generated by the participants. Two coders unaware of the hypotheses coded each response as either "ethically salient", which was coded as "1" or "neutral", which was coded as "0". The number of

ethically salient responses were summed for a total ranging from 0 to 15. Disagreements were resolved via discussions between the coders.

Control measures. Seven control measures were included in this study.

Affect. The depletion task can generate negative emotions, such as frustration, which can lead to unintended differences in terms of willingness to self-control between the experimental and control conditions. Accordingly, all participants were asked to complete a brief questionnaire with the Watson, Clark, and Tellegen's (1988; $\alpha = 0.86$ for positive affect (PA); and $\alpha = 0.84$ for negative affect (NA); n = 4,217) PANAS scale after engaging in the writing task. The PANAS scale includes 20 items, and participants are asked to indicate to what extent they are feeling the specified emotions (i.e. interested, distressed, excited, irritable, alert, ashamed, etc.) at the present moment on a scale from 1(very slightly or not at all) to 5(extremely) ($\alpha = 0.83$ for PA; and $\alpha = 0.73$ for NA).

Demographics. Age and gender were used as control measures for this study, since age, and gender can influence ethical decision making (O'Fallon & Butterfield, 2005). Two questions were used to target these variables: "How old are you?" and "What is your gender? Male, Female, prefer not to respond". Age was entered into the analysis as a continuous variable, whereas gender was entered as a categorical variable (Male = 0; Female = 1; prefer not to respond = 2). None of the participants selected the "prefer not to respond" item.

Self-control strength. Self-control strength was operationalized using Tangney, Baumeister, and Boone's (2004) self-control scale ($\alpha = 0.85$; n = 606). This scale consists of 36 items asking participants about their self-control practices such as eating habits, study habits, drug and alcohol in-take, as well as more general questions, such as speaking one's mind or acting impulsively. Participants are asked to respond to the questions using a 5-point scale

(1=not at all; 5=very much). Some sample items are: I am good at resisting temptation; I have a hard time breaking bad habits (R); People can count on me to keep on schedule; I say inappropriate things (R) (α = 0.85).

Value orientation for materialism. Richins and Dawson's (1992) value orientation for materialism scale (α = 0.85; n = 4,334; Richins, 2004) controls for differences in how much value individuals place on materialism. This might have an impact on how tempted individuals are by the monetary price and how much self-control they can apply as a result. The value orientation scale consists of 18 items, and participants are asked to respond to the items using a 5-point Likert scale (1=strongly disagree, 5=strongly agree) (α = 0.83).

Social desirability. Crowne and Marlowe's (1960) social desirability scale (α = 0.80, n = 1553), was used as a control variable as previous research indicates that social desirability concerns have an impact on the reported levels of moral identity (Aquino & Reed, 2002). This measure consists of 33 items that either describe undesirable but common or desirable but uncommon behaviors, and participants are asked to respond to these items as "True" or "False". The scores can range from 0 to 33, and the higher scores indicate a higher need to be perceived favorably by others (Kuder Richardson Formula 20 = 0.44).

Hours of sleep participants had the night before the study. Previous research indicates that sleep deprivation can lead to less ability to self-control (Barber, Manz, Bagsby, & Powel, 2009; Drummond et al., 2005), therefore, participants were asked, "How many hours of sleep did you get last night" and this was coded as a continuous variable in hours.

Prediction for the number of correct responses reported by other participants. Similar to Study 1, it is possible that the participants' expectations about others' ethical or unethical behavior in the matrix task shaped their own ethical behavior or lack thereof (Ajzen, 1985;

Kavla, 1983; Tyson, 1990). To control for this phenomenon, participants were asked: "On average, what do you think is the number of claimed tickets based on performance by other participants in the visual processing task?" This was coded as a continuous variable ranging from 1 to 20.

Measures.

Moral identity. The results from the internalization dimension ($\alpha = 0.70$; $n = 330$) of the Moral Identity scale (Aquino & Reed, 2002) were used as the first independent variable. The internalization dimension of moral identity, as discussed previously, taps the self-importance of the moral characteristics at a private level and shows a strong relationship with moral reasoning and moral behavior. The socialization dimension has not been found to be indicative of moral behavior (Aquino & Reed, 2002). Therefore, participants were asked to respond only to the sub-scale for internalization. The sub-scale for the internalization dimension of moral identity consists of 5 items and use a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree) ($\alpha = 0.79$).

Ethical behavior. Ethical behavior was operationalized as a binary variable (1 = ethical behavior, 0 = unethical behavior) based on the difference between the number of tickets that were taken from the envelope and the number of tickets that should have been taken from the envelope based on actual performance as marked on the matrix sheets. If the number of tickets taken from the envelope exceeded the number of correct answers checked on the matrix sheet, this was coded as unethical behavior. If the number of tickets taken from the envelope matched the number of correct answers checked on the matrix sheet, on the other hand, this was coded as ethical behavior. If the number of tickets taken from the envelope were fewer than the number of correct answers checked on the matrix sheet, this was still coded as ethical behavior.

Data Analysis and Results

The next section discusses the data analysis and results for Study 2, and is formulated of two parts: manipulation checks and hypothesis testing. Refer to Table 8 for descriptives for Study 2.

Manipulation Checks

A total of five manipulation checks were conducted. The first manipulation check tested whether the depletion and no depletion conditions generated the desired differences in initial self-control resources. The second manipulation check tested whether the study design generated differences in applied self-control. The third manipulation check tested whether the depletion and no-depletion conditions generated the desired differences in ethical behavior. The fourth manipulation check tested whether the depletion and no-depletion conditions generated the desired differences in the ethical decision making process. The final manipulation check was administered to see whether the study design caused any differences in terms of affect.

Initial self-control resources. The data from the food and beverage intake was used as a manipulation check to ensure that participants followed instructions for fasting. Individuals who were assigned to the experimental condition did not report consuming any foods or beverages within the last four hours prior to attending the study ($M = 4.0$, $SD = 0$). Furthermore, the results from the first glucose test were analyzed using a t-test to ensure that fasting generated the desired differences in initial self-control resources between the depletion and no-depletion conditions. Participants in the depletion condition had significantly lower blood glucose levels ($M = 86.7$, $SD = 6.03$) prior to engaging in the ethical decision making task than the participants in the no-depletion task ($M = 109.4$, $SD = 9.60$), $t(80)= -12.832$, $p<0.001$.

Applied self-control. To test whether the fasting condition generated the desired

differences in levels of self-control resources and applied self-control, a repeated measures ANOVA was conducted with glucose measurements at Time 1 and Time 2 as the within-subjects variables and depletion as the between subjects variable. The between-subjects test suggested depletion as a predictor of average glucose level ($F[1,80] = 128.978$, $p<0.001$, $\eta_P^2 = 0.617$). Furthermore, results from the within-subjects test indicated that the mean glucose significantly differed between the two time points, ($F [1, 80] = 17.927$, $p<0.001$, $\eta_P^2 = 0.183$). Additionally, the observed significant mean glucose difference from Time 1 to Time 2 was qualified by the interaction of depletion and timing of glucose measuments ($F[1,80] = 18.805$, $p<0.001$, $\eta_P^2 = 0.190$), such that participants within the no-depletion condition experienced a significant decrease in their blood glucose levels from the first glucose measurement ($M = 109.390$, $SD = 9.61$) to the second glucose measurement ($M = 103.268$; $SD = 11.00$), whereas no significant glucose change was observed within the participants in the depletion condition from Time 1 ($M = 86.659$, $SD = 6.03$) to Time 2 ($M = 86.732$, $SE = 6.14$).

Ethical behavior. A significantly lower percentage of the participants in the depletion condition (M = %31.7; 13 participants out of a total 41) engaged in ethical behavior in comparison to the participants in the no-depletion condition (M = 75.6%, 31 participants out of a total of 41), $\chi^2 (1, N = 82) = 15.890$, $p<0.001$).

Ethical decision making process. Similar to Study 1, the data from the manipulation check for the word completion task was analyzed. First, Spearman's rho (Spearman's rho = 0.83, $p<0.01$) as well as intraclass correlation coefficients were calculated (ICC = 0.840, $p<0.001$; average measure ICC = 0.913, $p<0.001$; $\alpha = 0.91$) to check for inter-rater reliability. The results indicated significant agreement between the raters ($F[1,81] = 132.559$, $p<0.001$). Next, a t-test was conducted to compare the number of ethically salient words generated in the depletion and

no-depletion conditions to test if participants engaged in ethical decision making as they decided about how many tickets they would take from the envelopes. Participants in the depletion condition generated significantly fewer ethically salient words (M = 2.63, SD = 1.545) than participants in the no-depletion condition (M = 3.44, SD = 1.718), $t(80) = -2.230$, $p<0.05$.

It is possible that the fewer ethical words generated in the depletion condition was due to participants' being too depleted to generate words overall (regardless of the words being ethical or not), rather than being an indication of lack of ethical processing. Therefore the data was analyzed to test whether the number of words generated differed between the two conditions. There were no significant differences in the total number of words generated between the depletion condition (M = 11.32, SD = 7.65) and the no-depletion condition (M = 9.95, SD = 8.01), $t(80) = 0.789$, $p = 0.432$.

Affect. The data from the PANAS scale was analyzed using a MANOVA to test whether the depletion condition generated any differences in affect, which might account for some of the observed differences in ethical behavior. There were no significant differences in positive ($F[1,80] = 1.726$, $p = 0.193$, $\eta_p^2 = 0.021$) or negative affect ($F[1,80] = 3.098$, $p = 0.082$, $\eta_p^2 = 0.037$) between the depletion ($M_{PA} = 2.51$, SD = 0.69; $M_{NA} = 1.77$, SD = 0.51) and no-depletion ($M_{PA} = 2.71$, SD = 0.71; $M_{NA} = 1.61$, SD = 0.31) conditions.

Hypothesis Testing

Hypothesis 5 predicted that depleted individuals would act less ethically, regardless of the centrality of their moral identities. This hypothesis was tested with a logistic regression. The control variables (age, gender, predictions about the number of tickets collected by other participants, materialism, negative affect, positive affect, self-control strength, social desirability, and hours of sleep participants had the night before) were entered in Block 1, moral identity and

depletion were entered in Block 2, and the interaction term between moral identity and depletion were entered in Block 3.

Results (refer to Table 10 for results of this analysis) indicated negative emotion (Exp(B) = .813; 95% CI[0.699 – 0.946], Wald = 7.223, $p<0.01$) and self-control strength (Exp(B) = 1.080; 95% CI[1.026 – 1.137], Wald = 8.661, $p<0.01$) as predictors of ethical behavior. Participants who had higher self-control strength and who felt less negative affect were more likely to engage in ethical behavior ($\chi^2(9, N = 85) = 21.683$, $p<.05$; -2 log likelihood = 91.633, $p<0.05$). None of the other control variables had a significant impact on ethical behavior. Once moral identity and depletion were entered into the analysis, the model improved significantly ($\chi^2(10, N = 85) = 47.462$, $p<0.001$; -2 log likelihood = 65.767, $p<0.001$), and the results suggested that depletion (Exp(B) = 0.041; 95% CI[0.008 – 0.201], Wald = 15.447, $p<.001$) was a predictor of ethical behavior whereas moral identity was not. However, this main effect was qualified by the interaction of of moral identity and depletion (Exp(B) = 19.405; 95% CI[2.040 – 184.563], Wald = 6.659, $p<0.05$) in Block 3 ($\chi^2(12, N = 85) = 65.157$, $p<0.001$; -2 log likelihood = 48.069, $p<0.001$).

Additionally, self-control strength remained significant in this analysis while negative emotion was no longer a significant predictor. The amount of sleep (Exp(B) = 0.452, 95% CI[0.252 – 0.812], Wald = 7.072, $p<0.001$) participants had the night before also surfaced as a significant predictor of ethical behavior. More specifically, if participants slept more the night before, they were less likely to engage in ethical behavior. None of the other control variables significantly influenced ethical behavior.

Since the interaction term was significant, a simple slopes test was conducted to understand the nature of the interaction and further test Hypothesis 5, which predicts that moral

identity should increase the likelihood of ethical behavior in only the no-depletion condition (Refer to Figure 8 for a graph of the interaction). The simple slopes test was conducted by first regressing the control variables (age, gender, predictions about the number of tickets collected by other participants, materialism, negative affect, positive affect, self-control strength, social desirability, and hours of sleep participants had the night before), moral identity, depletion, and the interaction of moral identity on ethical behavior using a logistic regression analysis with the depletion variable set at "0" to test for the significance of the slope representing the impact of moral identity on ethical behavior when participants were not initially depleted.

The results indicated that when participants were not depleted, there was no difference in behavior based on the centrality of their moral identity (β = -0.103, p = 0.532). When the logistic regression analysis was re-run with the depletion variable set at "1" to test for the significance of the slope representing the impact of moral identity on ethical behavior when participants were initially depleted, the results suggested that there was a significant difference in behavior based on moral identity (β = 2.130, p <0.01). More specifically, when depleted, participants with more central moral identities were more likely to engage in ethical behavior in comparison to participants with less central moral identities despite the over-night fasting. Therefore, Hypothesis 5 was not supported.

Discussion

Study 2 was conducted to test whether individuals with more central moral identities can still manage to act ethically when their biological self-control resource pool, namely glucose in their blood, is severely depleted due to over-night fasting. Participants in the depletion condition were asked to fast for at least four hours prior to the study to diminish the glucose levels of these individuals. To ensure that participants were severely depleted, the study was conducted at early

morning hours, which meant participants in actuality fasted overnight.

The manipulation checks for this study indicated that the depletion condition generated the desired results in terms of depletion as participants in this condition had significantly lower levels of glucose at the beginning of the study in comparison to the control group. Additionally, overnight fasting significantly diminished the likelihood of ethical behavior, as significantly fewer participants in the depletion condition acted ethically in comparison to the no-depletion condition.

Further supporting the impact of depletion on ethical behavior, depletion led to decreased ability to engage in ethical decision making process as participants in this condition generated fewer ethically salient words than participants in the no-depletion condition. To account for the possibility of the depletion condition negatively impacting ability to generate words overall, a follow up analysis was conducted comparing number of words generated in depletion and no-depletion conditions, which indicated no significant differences. Therefore, the fewer ethically salient words generated in the depletion condition in comparison to the no depletion condition could not be attributed to participants' being too depleted to generally generate words, but rather to participants' hindered ethical decision making ability as a result of the depletion they had experienced. Neither negative nor positive affect was significantly different between the depletion and no-depletion conditions, therefore the observed results could not be attributed to emotional differences between the two conditions.

Even though depletion generated significantly lower levels of ethical behavior, moral identity significantly influenced the probability of engaging in ethical behavior even when there was initial depletion. In other words, a subset of the participants with more central moral identities still managed to act ethically even when their self-control resources were severely

depleted due to over-night fasting. Additionally, the amount of sleep participants had the night before, and participants' self-control strength were also predictors of ethical behavior. More specifically, participants who had stronger self-control muscles were more likely to engage in ethical behavior while participants who felt more negative emotions and who slept more the night before were less likely to engage in ethical behavior.

Although the ego-depletion literature would suggest that less sleep should have led to less ethical behavior as sleep deprivation had been associated with failure of self-control in past studies (Barber, Manz, Bagsby, & Powel, 2009; Drummond et al., 2005), the observed results could be attributed to the low levels of glucose these participants had. Especially because the number of people who engaged in ethical behavior was significantly lower in the depletion condition, and since the participants in the depletion condition fasted overnight, more hours of sleep would have indicated more hours of fasting, which would have led to even lower levels of glucose. This, in turn, might have generated the lower likelihood of ethical behavior associated with longer hours of sleep as these participants would have had less self-control resources available to them in comparison to participants who slept less and therefore fasted for a shorter period of time.

Finally, negative affect was also a significant predictor of ethical behavior. In other words, individuals who felt more negative affect engaged in less ethical behavior. Previous research shows that individuals who are feeling negative emotions can engage in unethical behaviors such as harming others or the organization (Scarlicki & Folger, 1997) and employee theft (Greenberg, 1990); therefore the results replicated previous findings in terms of the relationship between negative affect and ethical behavior. None of the other control variables had a significant impact on ethical behavior.

In conclusion, the findings from Study 2 indicated that the absence of biological self-control resources lowered the probability of engaging in ethical behavior even for individuals with more central moral identities, however lack of these resources did not totally eliminate the influence of moral identity on ethical behavior.

Chapter 5

General Discussion

Findings

Two studies were designed to investigate the relationship between moral identity and self-control and to test whether self-control is the mechanism that moral identity acts through to generate ethical behavior. Study 1 tested the proposed mediation effect of self-control in the relationship between moral identity and ethical decision making by both measuring and manipulating self-control. The aims of this study were threefold: 1) to test whether self-control is the mechanism that mediates the relationship between moral identity and ethical decision making, 2) to test whether moral identity leads to an overall self-control strength, and 3) to test whether ethical decision making situations are tempting for individuals with more central moral identities.

The findings from Study 1 suggested that centrality of one's moral identity increased the level of applied self-control in the face of an ethical temptation when there was initial depletion. On the other hand, if participants' self-control resources were intact, centrality of one's moral identity did not generate such a difference. Although this seems like a counter-intuitive finding, the ego-depletion literature supports the observed results. Previous research shows that significantly more participants can engage in self-control when facing a task that requires them to tap their self-control resources if they have not been initially depleted (Muraven & Baumeister, 2000). Although it is an assumption, most of the participants in the study would likely agree that over-reporting one's score to increase one's chances to win a monetary reward is unethical. Therefore, when self-control resources were available, more of the participants, regardless of the centrality of their moral identity, relied on their self-control resources to engage in ethical behavior when they were faced with the choice of acting ethically or unethically to

increase their chances for winning. When one's self-control resources were not at optimum levels, however, the centrality of one's morality determined whether one would further tap into the already diminished self-control resources to engage in ethical behavior.

Building on the impact of centrality of moral identity on levels of applied self-control, Study 1 illustrated how self-control is the mechanism that moral identity acts through to enable ethical decision making. In other words, moral identity increased the likelihood of ethical behavior, especially when individuals' self-control resources were initially depleted, however this was due to applied self-control. This finding was not only in line with previous findings (Gino et al., 2011), which suggested moral identity as a moderator between depletion and ethical behavior, but it also took this explanation one step further. More specifically, participants with more central moral identities could engage in ethical behavior even when their self-control resources were diminished. However, this was not due to these participants' not needing self-control resources to engage in ethical behavior, but rather due to their ability to further tap into their self-control resources despite initial depletion. This can be explained by these participants' desire to stay true to their moral identity, which generated the motivation to further self-control, enabling ethical behavior even after initial depletion. Previous research in the ego-depletion literature (Muraven & Slessareva, 2003), as previously discussed, indicated motivation as a moderator between depletion and self-control; therefore the observed results replicated these findings in the context of ethical decision making.

Results from Study 1 also showed that moral identity led to an overall stronger self-control strength while indicating social desirability and materialism as other significant predictors in this relationship. More specifically, individuals with lower social desirability concerns and individuals who value materialism less had more self-control strength. This finding

is also in line with previous research suggesting that higher levels of materialism negatively influences self-control (Rose, 2007).

Finally, the findings from Study 1, showed that individuals with central moral identities would have to engage in an ethical decision making process in the face of ethical temptations just like everyone else rather than automatically opting for the ethical choice. This indicates that centrality of moral identity does not eliminate the temptation unethical choices generate, but rather shows that individuals with more central moral identities are able to expend more of their self-control resources even when they are depleted and engage in ethical behavior as they want to stay true to their moral selves.

The second study was designed to test whether moral identity could lead to ethical decision making when one does not have the ability to self-control due to lacking the biological resources, namely glucose, to do so. Therefore, Study 2 challenged participants with an ethical decision making task to observe the impact of over-night fasting on the ability to engage in ethical decision making for individuals who perceive morality as a central part of their identity. Even though it was a smaller group in comparion to Study 1, a subset of the depleted individuals with more central moral identities still managed to engage in ethical behavior in Study 2. This finding was in contrast with the findings from Study 1 while being more in line with the findings of Gino et al. (2011), which suggested that individuals with more central moral identities did not need to apply self-control in ethical situations as they engaged in more of an automatic decision.

One possible explanation for the observed results could be the difference between the ethical decisions participants had to make during the matrix task in Study 1 and Study 2. Although the temptation participants experienced in both studies was the ability to increase their likelihood of gaining a monetary reward, the actions participants had to engage in if they were to

give into the temptation were different in the two studies. More specifically, the ethical temptation in the first study presented participants with the choice of entering their score (inflated or actual) into the computer system using a keyboard to raise their chances of winning in the lottery while the ethical temptation in the second study presented participants with the choice of taking extra tickets from an envelope to increase their chances.

Previous research conducted in the field of digital piracy can shed light on the possible impact this difference could have generated. In a survey study, Lyonski and Durvasula (2008) observed that participants, when asked about their probability of stealing a CD from a store with 100% guarantee of not getting caught, reported significantly less likelihood for stealing the CD in comparison to their likelihood of illegaly downloading the CD. In actuality, the outcome of each action was the same, and the actions, although conducted in different forms (online or physically), were both stealing. However, participants in this study perceived the ethicality of the two situations differently, which impacted their choice in terms of selected course of action.

A similar perception difference could have occured between Study 1 and Study 2. Although the outcome of the two actions were the same in both studies, the severity of the two unethical behaviors could have been perceived differently by the participants. In other words, although the ethical behavior was probably perceived as cheating by participants in Study 1, some participants in Study 2 could have perceived the action of physically taking tickets they did not earn from the envelope as stealing rather than cheating. Since the societal norms are more clear cut in terms of stealing in comparison to cheating (Kohlberg, 1966, Nunci, 1981; Payne & Nantz, 1994), this might have made the decision more of an automatic one for participants with more central moral identities, which would have resulted in the higher probability of ethical behavior despite severe depletion.

Contributions of the Conducted Research

The findings from this research make important contributions to moral identity theory, self-control theory, as well as ethical decision making literature. First, existing literature on moral identity indicates that moral identity leads to ethical decisions and actions (Shao, Aquino, & Freeman, 2008), however, current findings do not provide us with a mechanism that moral identity acts through to get from the motivation to be ethical to being ethical. The conducted studies test whether self-control is that mechanism. The results indicate that self-control indeed serves as that mechanism not only because depletion significantly lowers the likelihood of engaging in ethical behavior even for individuals with more central moral identities but also because applied self-control is responsible for the observed ethical behavior for individuals with more central moral identities even when their self-control resources are not intact. Secondly, building on the observed mediation effect, the findings of these studies also provide us with more insight in regards to the long-term relationship between moral identity and self-control. More specifically, the results indicate that moral identity leads to improved self-control strength in the long-run due to initiating self-control and exercising the self-control muscle in the ethical domain.

Futhermore, to the researcher's knowledge, this study is the first study that operationalized experienced temptation in an ethical decision making situation, and tested whether individuals with more central moral identities are tempted when faced with an ethical situation and whether they choose to act ethically despite the experienced temptation or if they automatically opt for the ethical behavior. The findings indicate that moral identity does not automatically eliminate the temptation to act unethically for individuals who have more central moral identities, but rather suggest that this is a contested decision, which leads to more applied

self-control for these individuals even when their self-control resources are below optimum levels.

The findings also have important implications about organizational life. Since moral identity leads to the ability to engage in ethical decision making by allowing individuals to further tap into their potentially diminished self-control resources and because moral identity leads to an overall stronger self-control muscle, then it would be in the best interest of organizations and human resources departments to integrate a dimension of morality in their assessment batteries they use for selection purposes. Given the empirical findings indicating that self-control leads to an overall success in life (Tangney, Baumeister & Boone, 2004), this type of a selection process will not only help organizations prevent unethical conduct but also increase their employees' overall performance levels within organizations.

Additionally, findings suggesting that at least part of the employees who want to act ethically are vulnerable in the face of ethical temptations in the absence of self-control resources implicate that managers have to understand and take into account the other variables that will diminish their subordinates' self-control resources, such as decision making, impression management, emotion regulation etc., (Hagger et al., 2010), as well as other simple reasons that one might perceive as inconsequential, such as skipping a meal or being sleep deprived. Managers should not over-work their employees to the point that they are skipping meals, as even some of the employees who place morality as a central part of their identity still have natural limitations in terms of their ethical decision making ability, and these types of practices can result in unintended unethical behaviors due to lack of self-control resources if these individuals find themselves in situations that are tempting.

Finally, the findings of the conducted studies have important implications in regards to

ethical behaviors and decisions expected from managers in the organizational setting. Executives find themselves face to face with high organizational expectations in terms of performance, and trying to deliver on these expectations can generate ethical dilemmas that put executives at odds with their own morality. If organizations expect managers to deliver on these expectations without jeopardizing what is morally at stake, then they should recognize that even some of the most ethical of managers can become vulnerable in the face of ethical challenges when his/her self-control resources are depleted. Having to engage in decision making, planning, and other executive functions throughout the day, especially higher level management needs to rely on their analytical and cognitive skills to perform their managerial duties, and they rely on the same self-control resource pool that ethical decision making relies on to do so (Hagger et al., 2010). Therefore, it is important for organizations to be well-aware of the strains and limitations these managers experience in terms of self-control ability as they try to engage in ethical decisions and behaviors, as even executives who care about morality and who want to engage in ethical practices might be vulnerable when their self-control resources are not intact.

Limitations

The conducted research has some limitations. First, based on prior empirical findings (Muraven, Baumeister, Tice, 1999; Oaten & Cheng 2006a, 2006b, 2007), the conducted research argues that moral identity leads to improved self-control strength over time due to the self-control practices it generates. However, as neither Study 1 or Study 2 is longitudinal, this hypothesis is only tested via a regression analysis using the data from the scales measuring individuals self-reported moral identity and self-control ability levels while controlling for previously observed variables that impact self-control and moral identity, which include age, gender, materialism, and social desirability. Therefore, although the predicted relationship is

significant, this analysis only informs us about the relationship that exists between moral identity and self-control, however it does not inform us about the direction of this relationship and therefore does not allow us to infer that the observed relationship between these two variables can be fully explained with the proposed theorizing.

Additionally, because the conducted studies are testing the impact of moral identity and applied self-control on ethical decision making without the presence of other factors, such as group norms, expectations of others including peers and superiors, and performance goals, which can all influence ethical decision making (Bommer, Gratto, Gravender, & Tottle, 1987; Trevino, 1986), the findings are limited in terms of explaining ethical behavior in organizational settings in which all these factors can co-influence one's ethical decision making process, working with or working against one's moral identity, and therefore influencing applied self-control levels differently.

Finally, the conducted studies are both experiments, and as with all experimental designs, we do have to keep in mind that the generalizability of these studies is limited as a result of the choice of method. The experimental design is chosen as the appropriate methodology for this research as this methodology makes it possible to manipulate variables and draw causal inferences, which enable the test for the mediation effect of self-control in the relationship between moral identity and self-control and to test for the impact of moral identity on ethical decision making in the absence of self-control resources. However, given the limitations in terms of generalizability and especially because empirical findings in the ethics literature indicate that occupation and culture can impact ethical decision making (Tenbrunsel & Crowe, 2008), it will be beneficial to conduct similar experiments with different populations, especially with participants from different occupations and cultures in the future.

Directions for Future Research

The conducted studies investigate the relationships that exist among moral identity, self-control and ethical decision making. Study 2 tests these relationships within the ego-depletion framework by altering the glucose levels in the blood to manipulate the levels of self-control strength as fluctuations in glucose levels in the blood have been found to impact the amount of self-control individuals employ (Gailliot & Baumeister, 2007b; Gailliot et al., 2007; Gailliot et al., 2009). Accordingly, the conducted study tries to verify the suggested mediation from a biological perspective. Two other variables have been found to immensely impact one's self-control ability, namely expectations to apply self-control in the future (Clarkson et al., 2010; Job, Dweck, & Walton, 2010; Martijn, 2002) and conservation efforts to save the limited resource for self-control when it is needed most (Muraven, Shmueli, & Burkley, 2006; Tyler & Burns, 2009). Testing the extent of the suggested mediation by manipulating self-control abilities of the individuals via altering the expectations and conservation needs will further increase the generalizibility of the results found in this research as well as strengthening the argument for the proposed mediation effect.

Both Study 1 and Study 2, as discussed in the limitations section, are designed at the individual level to better understand the relationship between applied self-control and moral identity. However, given that organizational dynamics can impact the ethical decision making process differently by making different identities of an individual salient and therefore overriding one's moral identity (Aquino et al., 2009), future research should test the observed relationships with organizational scenarios. Moreover, it will be beneficial to conduct similar experiments with different populations, especially with participants from different occupations and cultures in the future to obtain more external validity for the observed results.

Additionally, the conducted research operationalized ethical behavior as a binary variable and tested the impact of centrality of moral identity and the associated applied self-control on an ethical choice that did not have any further consequences. Real life situations and organizational settings, however, can present individuals with more complex ethical decisions than the scenario that was utilized in this research. More specifically, as suggested by the principle of double effect that was developed by Catholic moralists, individuals can sometimes find themselves facing ethical situations in which the ethical choice in question can generate a good and a bad outcome at the same time (Boyle, 1980). These types of decisions can specifically surface when individuals are torn between the action alternatives that can be justified with different ethical decision making frameworks (Cavanagh, Moberg, & Velasquez, 1981), such as the clash that occurs between utilitarian approach versus a justice approach when a company has to make a decision about implementing an affirmative action plan. These programs can be justified due to the overall good they bring to the society in terms of diminishing prejudice and bringing more diversity to organizations while at some level violating the justice approach as they can lead to reverse discrimination. It will be valuable to understand how the centrality of moral identity and the associated levels of applied self-control react in situations that carry these types of dualities. Therefore, future studies should test the observed relationships in this research with organizational scenarios that generate the so-called double effects in which the ethical choice is not straight forward but rather complex as a result of the attached negative consequences.

Furthermore, the findings show that although individuals with more central moral identities rely on their self-control resources to engage in ethical behavior, some individuals with more central moral identities can make ethical decisions in the absence of the very same resources depending on the type of the ethical decision they are facing. More specifically, the

ability to cheat electronically is tempting even for individuals with more central moral identities, which leads to the need to engage in applied self-control to enable ethical decision making, while the ability to cheat by physically taking extra lottery tickets is tempting for participants with less central moral identities but not for all individuals with more central moral identities. Therefore, it is possible that not all situations are equally tempting for all individuals with more central moral identities. The observed results can also indicate that other situations, which can be ethically charged, can be tempting for the very same individuals who are not tempted by the ability to take extra tickets from the envelope, such as the ability to cheat in an exam for a higher grade, taking credit for another's work to get promoted at work or to lie to protect a friend or a co-worker. Therefore, recruiting a group of participants and conducting multiple studies with the same participants, using different ethical decision making tasks can provide more insight about the extent individuals with more central moral identities rely on their self-control resources in the face of ethical temptations. This would also enable us to test whether the need to engage in self-control for these individuals is consistent or whether it changes depending on the situation at hand, based on what they value and if they are tempted as a result.

Finally, further research should focus on the suggested long-term relationship between moral identity and self-control. In this research, it has been argued that moral identity leads to an overall stronger self-control muscle due to the many self-control exercise opportunities it generates. This argument, however, is only tested with a regression analysis using the data from the scales for self-control strength and moral identity. To be able to draw causal inferences, and to understand how moral identity strengthens one's self-control muscle, it will be beneficial to conduct a longitudinal experimental study to test the suggested long-term impact of moral identity and the frequent self-control exercises it generates, which improves one's self-control

strength.

Conclusion

In conclusion, the conducted research suggests that centrality of one's moral identity does not always generate automatic ethical behaviors but rather a contested ethical decision making process, leading to applied self-control and ultimately ethical behavior. In other words, applied self-control mediates the relationship between moral identity and ethical behavior. Futhermore, the exercises of applied self-control generated by one's moral identity eventually lead to an overall stronger self-control ability. Despite the mediating effect of applied self-control between moral identity and ethical behavior, lack of self-contol resources do not eliminate the influence of moral identity on ethical behavior all together. The observed impact of moral identity on ethical behavior in the absence of biological self-control resources points to the possibility of another influencing factor, namely the type of unethical behavior one needs to engage in if one decides to give in to the temptation. More specifically, when facing unethical choices, which are more black and white such as stealing, centrality of moral identity can possibly trigger automatic ethical behaviors. However, when dealing with unethical choices that are more easily justified or more socially accepted, such as cheating, the centrality of moral identity leads to a contested ethical decision making process instead, which triggers self-control to act ethically.

Tables

Table 1

Descriptives for Study 1 for all conditions.

	Temptation						No-temptation					
	Depletion			No-depletion			Depletion			No-depletion		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Age	41	19.07	1.66	44	19.77	4.27	44	19.00	1.54	39	1.89	19.15
ASC_MT	41	5.83	5.04	44	-0.95	3.18	44	3.80	6.22	39	5.03	-1.05
ASC_WT	41	0.59	5.31	44	5.07	7.77	44	-0.64	4.48	39	3.67	0.74
E.W.	41	3.88	2.88	44	4.34	2.41	44	3.48	2.25	39	2.62	4.05
G.O.R.P.	41	7.46	3.70	44	8.16	3.69	44	7.68	3.09	39	4.09	8.95
MAT	41	2.88	0.55	44	3.03	0.49	44	2.85	0.58	39	0.52	2.84
MI	41	4.60	0.48	44	4.55	0.56	44	4.52	0.46	39	0.52	4.59
NA	41	1.58	0.49	44	1.51	0.56	44	1.62	0.58	39	0.52	1.55
PA	41	2.68	0.73	44	2.53	0.76	44	2.69	0.86	39	0.74	2.70
Rep_ASC	41	4.12	1.03	44	2.14	1.23	44	3.95	0.89	39	1.27	2.23
Rep_ Diff	41	4.22	1.01	44	1.64	1.06	44	4.20	0.79	39	0.96	1.62

Table 1 (continued)

	Temptation						No-temptation					
	Depletion			No-depletion			Depletion			No-depletion		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
SC	41	3.51	0.53	44	3.36	0.47	44	3.57	0.42	39	0.43	3.38
SD	41	19.39	3.17	44	20.00	3.33	44	20.09	2.41	39	3.28	20.77
Sleep	41	7.22	1.35	44	7.60	1.68	44	7.73	1.44	39	1.67	7.10
T1	41	100.41	7.27	44	103.98	12.05	44	102.89	9.40	39	100.67	11.93
T2	41	94.46	6.31	44	104.93	11.40	44	99.09	10.10	39	101.72	13.29
T3	41	93.88	5.93	44	99.86	10.12	44	99.73	11.88	39	100.97	13.09
TIME	41	358.42	249.70	44	265.07	251.76	44	390.18	240.61	39	303.17	157.72

Key for all Tables for Study 1 and Study 2:

ASC_WT: Applied self-control during writing task as glucose change from the first glucose measurement to second glucose measurement*; ASC_MT: Applied self-control during matrix task as glucose change from the second glucose measurement to third glucose measurement; EW: Ethically salient words; G.O.R.P: Guess for others' reported performance; MAT: Materialism; MI: Moral Identity; NA: Negative affect; PA: Positive affect; Rep_ASC: Reported applied self-control during writing task; Rep_Diff: Reported experienced difficulty during writing task; SC: Self-control; SD: Social Desirability; Sleep: Hours of sleep from night before; T1: First glucose measurement time 1; T2 – Second glucose measurement; T3 – Third glucose measurement; TIME: total time spent in seconds during the matrix task while deciding what to report as one's performance.

(*All glucose measurements are in milligrams of glucose per deciliter of blood)

Table 2

Mean scores for three glucose measurements in milligrams of glucose per deciliter of blood based on condition.

	Depletion	Temptation	*M*	*SD*
TIME1	No depletion	No temptation	100.67	11.93
		Temptation	103.32	11.92
		Total	102.03	11.92
	Depletion	No temptation	102.89	9.40
		Temptation	101.27	8.15
		Total	102.08	8.78
	Total	No temptation	101.84	10.65
		Temptation	102.26	10.13
		Total	102.05	10.37
TIME2	No depletion	No temptation	101.72	13.29
		Temptation	104.61	11.31
		Total	103.20	12.32
	Depletion	No temptation	99.09	10.10
		Temptation	95.48	7.81
		Total	97.28	9.16
	Total	No temptation	100.33	11.71
		Temptation	99.88	10.64
		Total	100.10	11.15
TIME3	No depletion	No temptation	100.97	13.09
		Temptation	99.39	9.89
		Total	100.16	11.63
	Depletion	No temptation	99.73	11.88
		Temptation	94.73	7.15
		Total	97.23	10.07
	Total	No temptation	100.31	12.50
		Temptation	96.98	8.85
		Total	98.63	10.90

Table 3
Study 1 Regression analysis with control variables predicting the impact of moral identity, depletion, and the interaction of moral identity and depletion on applied self-control during the matrix task.

	Step 1		Step 2		Step 3	
	β	*t*	*β*	*t*	*β*	*t*
Age	.168	1.802	.136	1.739	.144	1.896
Gender	.075	.814	.081	1.022	.095	1.234
G.O.R.P.	.014	.164	-.055	-.726	-.043	-.594
MAT	.197	1.962	.146	1.714	.152	1.845
NA	.016	.177	.009	.116	.019	.249
PA	-.018	-.187	.004	.050	.012	.156
SC	.575	5.573***	.508	5.277***	.524	5.608***
SD	.015	.160	-.020	-.250	.008	.100
SLEEP	.066	.725	.044	.575	.021	.287
T1	.289	3.116**	.279	3.536**	.237	3.029**
DEP			-.374	-4.956***	-.380	-5.203***
MI			.242	2.958**	.082	.795
DEP x MI					.235	2.446*
	F[10,74] = 6.087***		F[12,72]= 9.959***		F[13,71] = 10.290***	
	Adjusted R^2 = 0.377		Adjusted R^2 = 0.561		Adjusted R^2 = 0.590	
	ΔR^2 = 0.451***		ΔR^2 = 0.173***		ΔR^2 = 0.029*	

* p < 0.05, ** p < 0.01, *** p < 0.001

Table 4
Step 1 for the mediation analysis for Study 1: Logistic regression analysis with control variables predicting the impact of moral identity, depletion, and the interaction of moral identity and depletion on ethical behavior during the matrix task.

	Block 1				Block 2				Block 3			
	95% C.I.for EXP(B)				*95% C.I.for EXP(B)*				*95% C.I.for EXP(B)*			
	Exp(B)	*Lower*	*Upper*	*Wald*	*Exp(B)*	*Lower*	*Upper*	*Wald*	*Exp(B)*	*Lower*	*Upper*	*Wald*
Age	.955	.808	1.128	.297	.884	.695	1.124	1.008	.879	.692	1.116	1.116
Gender	.641	.219	1.878	.659	.582	.156	2.174	.647	.803	.176	3.668	.080
G.O.B	1.119	.959	1.306	2.032	1.086	.892	1.323	.680	1.089	.873	1.359	.576
MAT	1.011	.951	1.075	.123	.990	.920	1.065	.073	.986	.911	1.068	.113
NA	1.050	.944	1.168	.795	1.044	.922	1.182	.468	1.023	.893	1.171	.108
PA	1.036	.954	1.124	.703	1.066	.956	1.189	1.332	1.030	.911	1.166	.225
SC	1.055	1.015	1.096	7.462**	1.047	.994	1.101	3.056	1.053	.991	1.119	2.823
SD	1.074	.909	1.270	.708	1.100	.887	1.365	.752	1.147	.880	1.496	1.028
SLEEP	1.182	.845	1.652	.952	1.130	.759	1.681	.362	1.226	.769	1.955	.735
T1	1.064	1.005	1.128	4.512*	1.104	1.023	1.191	6.526*	1.105	1.017	1.200	5.566*
DEP					.122	.030	.497	8.607**	.010	.000	.291	7.207**
MI					1.617	1.179	2.217	8.895**	1.293	.927	1.803	2.292
MI x DEP									7.770	1.332	45.313	5.193*
	χ^2 (11, N = 85) = 20.299*				χ^2 (12, N = 85) = 43.813***				χ^2 (13, N = 85) = 55.612***			
	-2 log likelihood = 95.540*				-2 log likelihood = 72.026***				-2 log likelihood = 60.227**			
	Cox & Snell R Square = 0.212				Cox & Snell R Square = 0.403				Cox & Snell R Square = 0.480			

* $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$

Table 5
Step 2 for the mediation analysis for Study 1: Logistic regression analysis with control variables predicting the impact of applied self-control on ethical behavior during the matrix task.

	Block 1				Block 2			
	95% C.I.for EXP(B)				*95% C.I.for EXP(B)*			
	Exp(B)	*Lower*	*Upper*	*Wald*	*Exp(B)*	*Lower*	*Upper*	*Wald*
Age	.909	.754	1.096	1.000	.734	.552	.975	4.546*
DEP	.145	.041	.508	9.088**	.480	.106	2.175	.906
Gender	.424	.125	1.440	1.892	.769	.153	3.854	.102
G.O.B	1.089	.920	1.288	.982	1.139	.922	1.406	1.456
MAT	1.016	.950	1.085	.209	.971	.890	1.059	.439
NA	1.065	.951	1.194	1.187	1.071	.924	1.242	.839
PA	1.065	.969	1.170	1.696	1.073	.957	1.204	1.461
SC	1.077	1.028	1.129	9.685**	1.003	.938	1.072	.006
SD	1.114	.921	1.347	1.234	1.076	.849	1.362	.364
SLEEP	1.248	.873	1.782	1.478	1.109	.714	1.723	.212
T1	1.071	1.003	1.144	4.190*	1.056	.972	1.148	1.658
ASC_MT					1.580	1.241	2.010	13.802***
	χ^2 (11, N = 85) = 31.274**				χ^2 (12, N = 85) = 58.884***			
	-2 log likelihood = 84.565**				-2 log likelihood = 56.955***			
	Cox & Snell R Square = 0.308				Cox & Snell R Square = 0.499			

* $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$

Table 6
Step 4 for the mediation analysis for Study 1: Logistic regression analysis with control variables predicting the impact of moral identity, depletion, the interaction of moral identity and depletion, and applied self-control on ethical behavior during the matrix task.

	Block 1				Block 2			
	95% C.I.for EXP(B)				*95% C.I.for EXP(B)*			
	Exp(B)	*Lower*	*Upper*	*Wald*	*Exp(B)*	*Lower*	*Upper*	*Wald*
Age	.909	.754	1.096	1.000	.884	.695	1.124	1.008
DEP	.145	.041	.508	9.088**	.122	.030	.497	8.607**
Gender	.424	.125	1.440	1.892	.582	.156	2.174	.647
G.O.B.	1.089	.920	1.288	.982	1.086	.892	1.323	.680
MAT	1.016	.950	1.085	.209	.990	.920	1.065	.073
NA	1.065	.951	1.194	1.187	1.044	.922	1.182	.468
PA	1.065	.969	1.170	1.696	1.066	.956	1.189	1.332
SC	1.077	1.028	1.129	9.685**	1.047	.994	1.101	3.056
SD	1.114	.921	1.347	1.234	1.100	.887	1.365	.752
SLEEP	1.248	.873	1.782	1.478	1.130	.759	1.681	.362
T1	1.071	1.003	1.144	4.190*	1.104	1.023	1.191	6.526*
MI					1.617	1.179	2.217	8.895**
MI x DEP								
	χ^2 (11, N = 85) = 31.274**				χ^2 (12, N = 85) = 43.813***			
	-2 log likelihood = 84.565**				-2 log likelihood = 72.026***			
	Cox & Snell R Square = 0.308				Cox & Snell R Square = 0.403			

* $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$

Table 6 (continued)

	Block 3			Block 4			
	95% C.I.for EXP(B)			*95% C.I.for EXP(B)*			
	Lower	*Upper*	*Wald*	*Exp(B)*	*Lower*	*Upper*	*Wald*
Age	.692	1.116	1.116	.715	.495	1.033	3.201
DEP	.000	.291	7.207**	.062	.002	1.968	2.483
Gender	.176	3.668	.080	1.009	.170	5.988	.000
G.O.B.	.873	1.359	.576	1.118	.881	1.419	.844
MAT	.911	1.068	.113	.940	.847	1.045	1.312
NA	.893	1.171	.108	1.036	.883	1.215	.187
PA	.911	1.166	.225	1.044	.913	1.194	.402
SC	.991	1.119	2.823	.996	.920	1.078	.011
SD	.880	1.496	1.028	1.119	.840	1.490	.588
SLEEP	.769	1.955	.735	1.125	.666	1.899	.194
T1	1.017	1.200	5.566*	1.114	.997	1.244	3.622
MI	.927	1.803	2.292	1.456	.873	2.431	2.069
MI x DEP	1.332	45.313	5.193*	3.623	.587	22.343	1.923
ASC_MT				1.463	1.092	1.961	6.497*
	χ^2 (13, N = 85) = 55.612***			χ^2 (14, N = 85) = 67.222***			
	-2 log likelihood = 60.227**			-2 log likelihood = 48.617**			
	Cox & Snell R Square = 0.480			Cox & Snell R Square = 0.547			

* $p < 0.05$, ** $p < 0.01$; *** $p < 0.001$

Table 7

Regression analysis with control variables predicting the impact of moral identity on self-control strength.

	β	t
Age	-.043	-.598
Gender	.026	.369
Materialism	-.317	-4.477**
Social Desirability	-.152	-2.134*
Moral Identity	.327	4.514**
	$F[5,162] = 8.683$***	
	Adjusted $R^2 = 0.187$	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 8

Regression analysis with control variables predicting the impact of moral identity, depletion and temptation, the two-way interactions of moral identity, depletion and temptation and the three-way interaction of moral idenitity, temptation and depletion on log_10 transformation of time spent during contemplating what to report as performance.

	Step 1		Step 2		Step 3		Step 4	
	β	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Age	.125	1.582	.143	1.843	.141	1.814	.145	1.879
Gender	-.060	-.775	-.033	-.418	-.039	-.487	-.027	-.331
G.O.R.P.	.161	2.145*	.187	2.494*	.184	2.448*	.193	2.594*
MAT	-.073	-.908	-.057	-.700	-.066	-.800	-.064	-.784
NA	.086	1.125	.073	.970	.070	.920	.075	.998
PA	.187	2.400*	.188	2.454*	.183	2.385*	.186	2.446*
SC	.167	2.022*	.140	1.613	.148	1.689	.151	1.736
SD	.039	.513	.041	.530	.045	.582	.060	.784
SLEEP	-.034	-.453	-.044	-.578	-.047	-.616	-.067	-.874
T1	-.157	-2.026*	-.156	-2.052*	-.156	-2.046*	-.186	-2.439*
DEP			.202	2.667**	.201	2.657**	.239	2.241
TEMP			-.083	-1.101	-.081	-1.070	-.053	-.498
MI			-.044	-.545	.024	.220	.033	.277

Table 8 (continued)

	Step 1		Step 2		Step 3		Step 4	
	B	*t*	*β*	*t*	*β*	*t*	*β*	*t*
MI x TEMP					-.098	-.965	-.265	-2.098*
MI x DEP							-.034	-.256
TEMP x DEP							-.064	-.492
MI x DEP x TEMP							.272	1.952*
	F[10,157] = 2.557**		F[13,154] = 2.669**		F[14,151]= 2.572**		F[17,150] = 2.565**	
	Adjusted R^2 = 0.085		Adjusted R^2 = 0.117		Adjusted R^2 = 0.116		Adjusted R^2 = 0.137	
	ΔR^2 = 0.140**		ΔR^2 = 0.046*		ΔR^2 = 0.005		ΔR^2 = 0.035*	

* $p \leq 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 9

Descriptives for Study 2.

	M	*SD*
Age	19.87	2.63
ASC_MT	3.02	7.14
EW	3.04	1.67
G.O.B.	5.27	2.45
MAT	2.97	0.46
MI	4.44	0.57
NA	1.69	0.43
PA	2.62	0.70
SC	3.34	0.40
SD	20.52	3.52
SLEEP	6.99	1.67
T1	98.02	13.94
T2	95.00	12.14

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 10

Logistic regression analysis for Study 2 with control variables predicting the impact of moral identity, depletion and the interaction of moral identity and depletion on ethical behavior during the matrix task.

	Block 1				Block 2				Block 3			
	95% C.I.for EXP(B)				*95% C.I.for EXP(B)*				*95% C.I.for EXP(B)*			
	Exp(B)	*Lower*	*Upper*	*Wald*	*Exp(B)*	*Lower*	*Upper*	*Wald*	*Exp(B)*	*Lower*	*Upper*	*Wald*
Age	.941	.764	1.159	.330	.888	.649	1.217	.545	.831	.521	1.325	.606
Gender	.763	.259	2.247	.241	.717	.173	2.968	.211	.438	.063	3.033	.700
G.O.R.P.	.828	.654	1.047	2.478	.903	.673	1.213	.458	1.075	.741	1.560	.145
MAT	1.011	.931	1.098	.074	1.024	.914	1.149	.169	1.005	.853	1.184	.004
NA	.813	.699	.946	7.223**	.840	.708	.996	4.033*	.953	.762	1.192	.176
PA	.988	.914	1.068	.096	.953	.857	1.060	.776	.968	.857	1.095	.262
SC	1.080	1.026	1.137	8.661**	1.122	1.033	1.219	7.447**	1.151	1.037	1.279	6.945**
SD	.996	.856	1.159	.003	.957	.799	1.146	.228	.888	.705	1.117	1.032
SLEEP	.796	.582	1.088	2.047	.676	.448	1.020	3.486	.452	.252	.812	7.072**
MI					1.187	.904	1.558	1.526	.778	.530	1.143	1.634
DEP					.041	.008	.201	15.447***	.006	.000	.052	9.182**
MI x DEP									19.405	2.040	184.563	6.659*
	χ^2 (9, N = 85) = 21.603*				χ^2 (11, N = 85) = 47.462***				χ^2 (12, N = 85) = 65.157***			
	-2 log likelihood = 91.633*				-2 log likelihood = 65.767***				-2 log likelihood = 48.069***			
	Cox & Snell R Square = 0.232				Cox & Snell R Square = 0.439				Cox & Snell R Square = 0.548			

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Figures

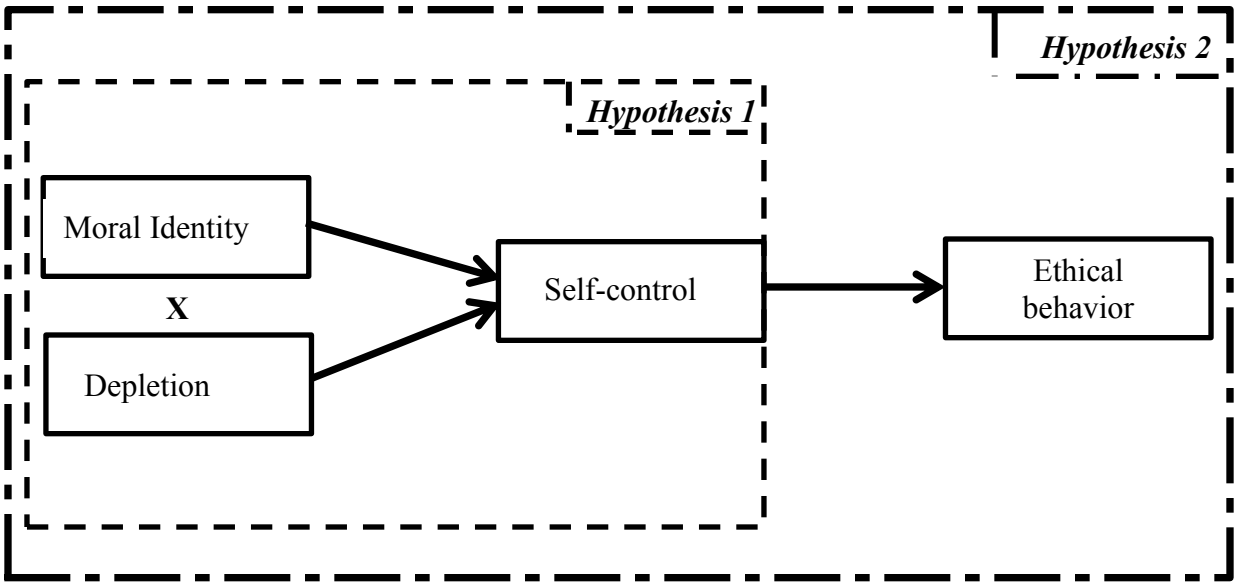

Figure 1. The mediation model and the pathways described in Hypothesis 1 and Hypothesis 2.

5.19	1.69	6.36
4.67	2.91	5.06
4.57	3.05	4.28
4.81	1.82	5.82

Figure 2. Numbers matrix.

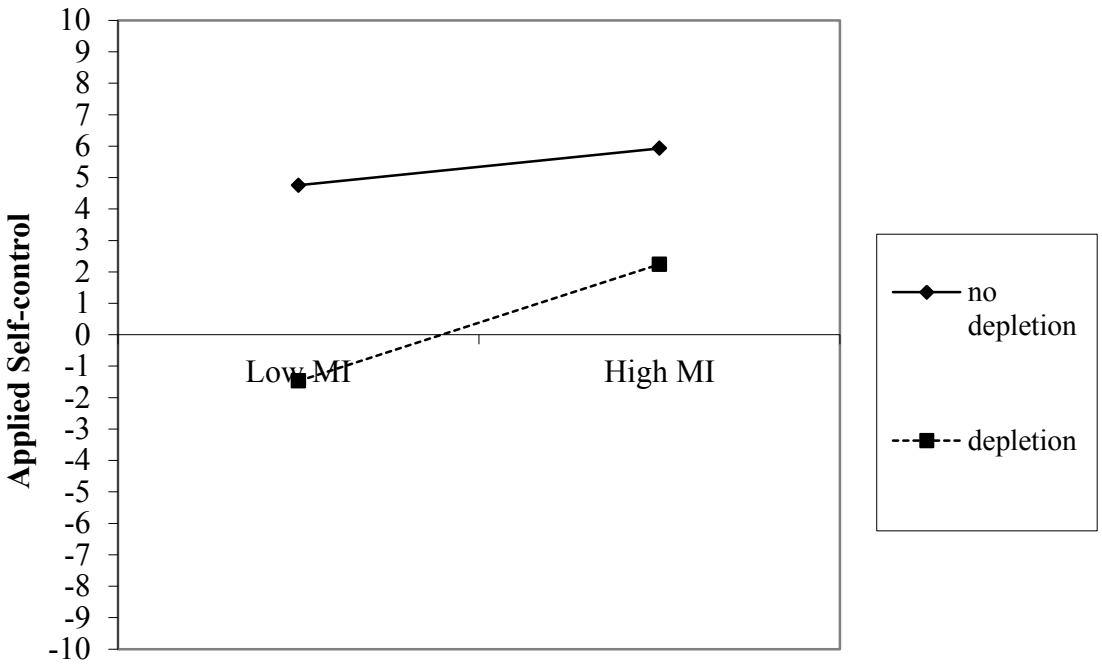

Figure 3. Study 1 simple slopes for interaction of moral identity and depletion on applied self-control.

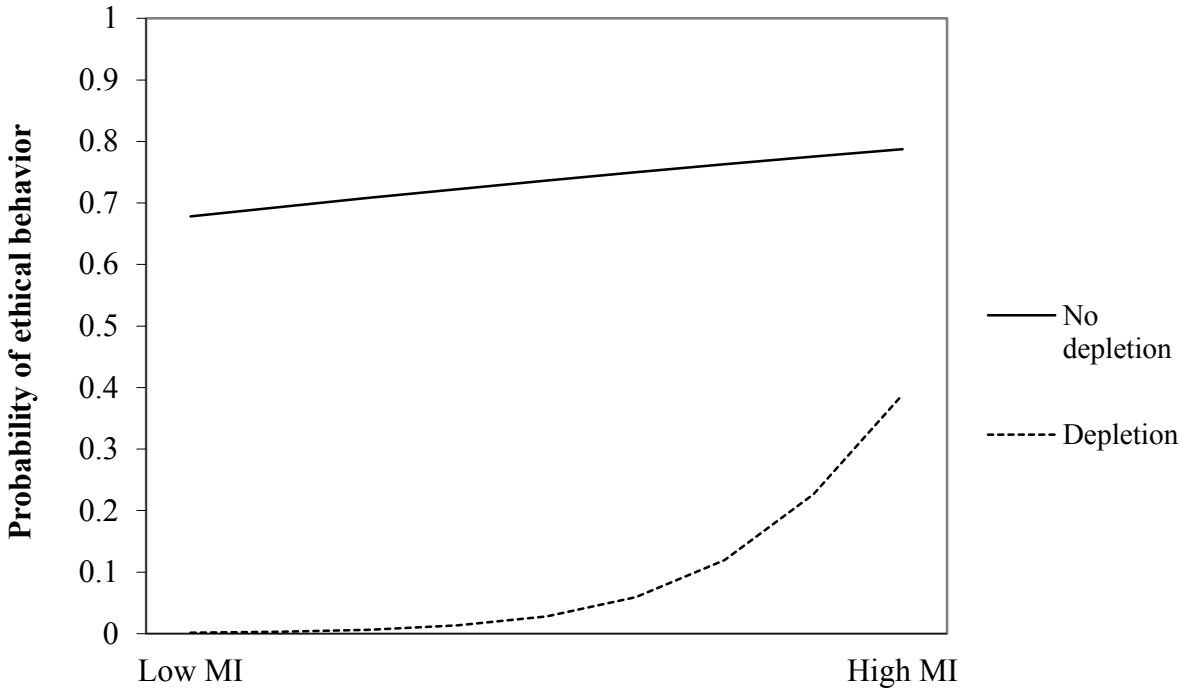

Figure 4. Study 1 simple slopes for interaction of moral identity and depletion on ethical behavior.

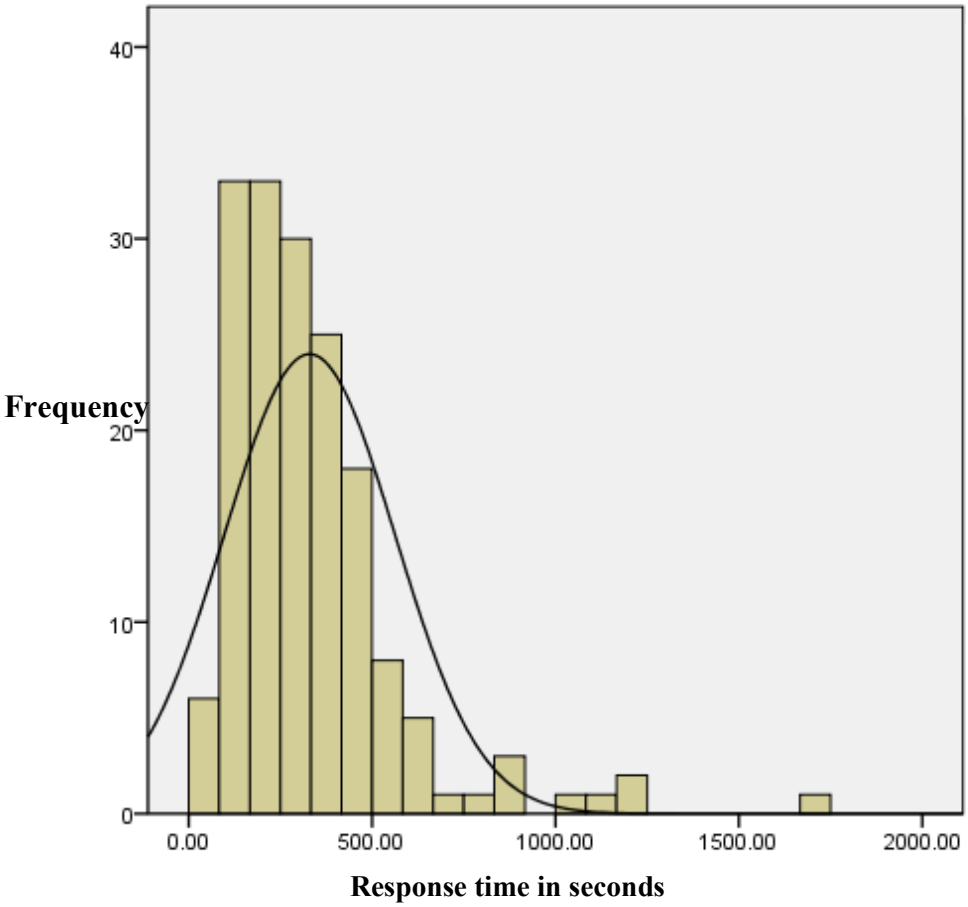

Figure 5. Histogram for response time during the self-reporting of performance on the matrix task.

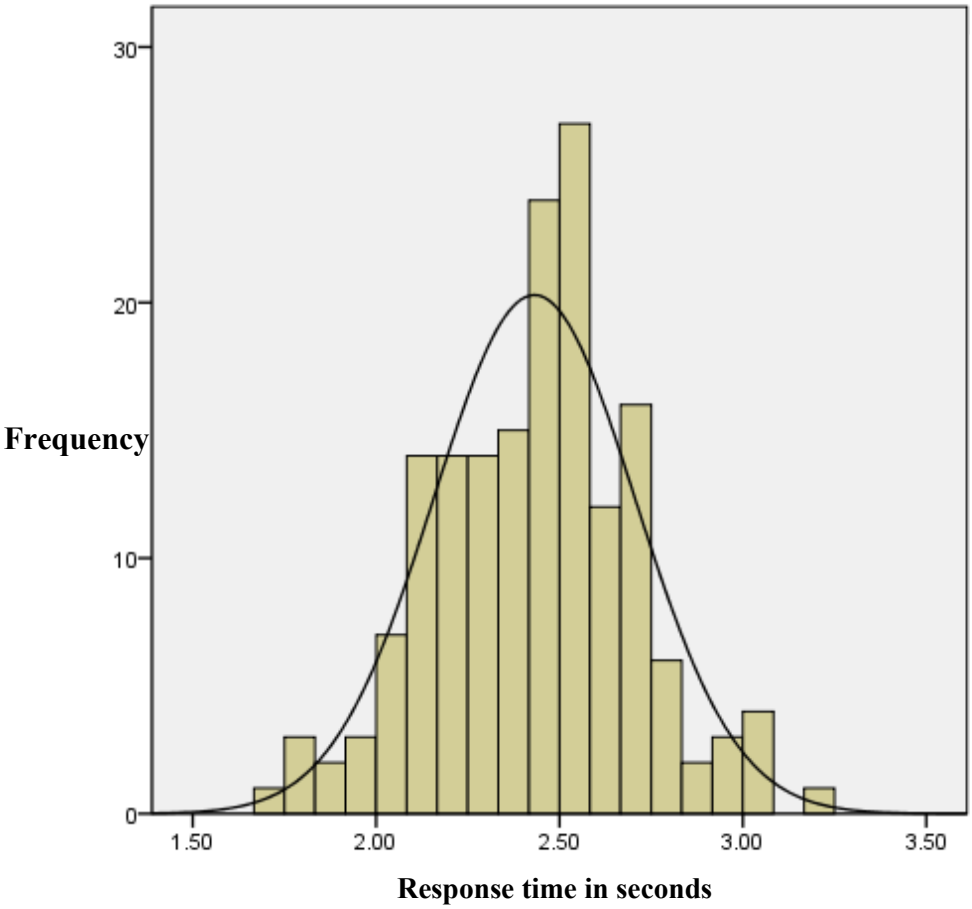

Figure 6. Histogram for log_10 transformation of response time during the self-reporting of performance on the matrix task.

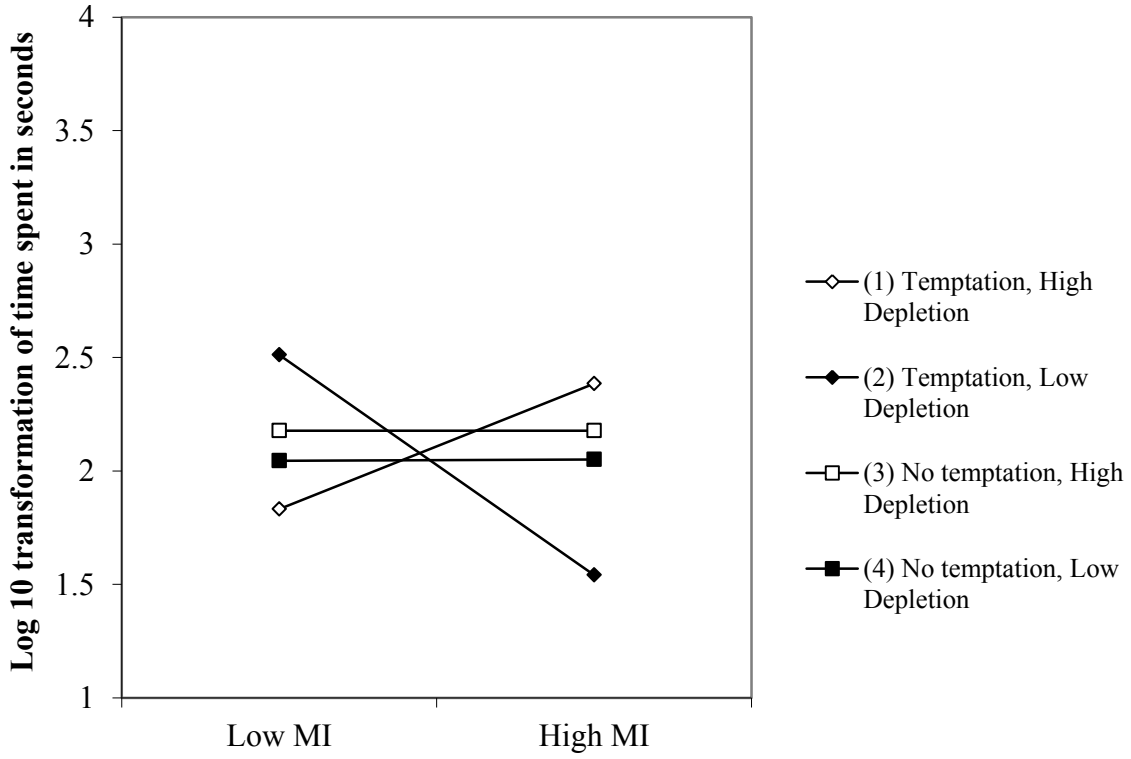

Figure 7. Study 1 simple slopes for interaction of moral identity, depletion and temptation on log_10 transformation of time spent during self-reporting of one's performance in the matrix task.

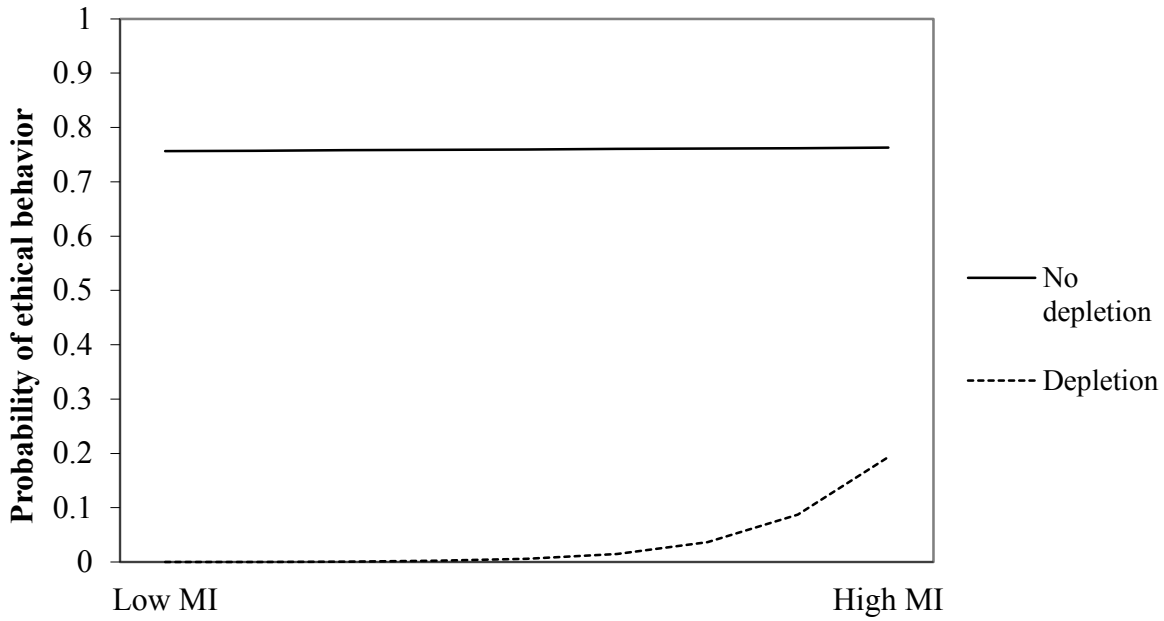

Figure 8. Study 2 simple slopes for interaction of moral identity and depletion on ethical behavior.

Appendices

Appendix A

Moral Identity Scale (Aquino & Reed, 2002)

Listed below are some characteristics that may describe a person. The person with these characteristics could be you or it could be someone else. For a moment, visualize in your mind the kind of person who has these characteristics. Imagine how that person would think, feel, and act. When you have a clear image of what this person would be like, answer the following questions.

Caring, Compassionate, Fair, Friendly, Generous, Hardworking, Helpful, Honest, Kind

		Strongly Disagree				Strongly Agree
	1. It would make me feel good to be a person who has these characteristics	1	2	3	4	5
	2. Being someone who has these characteristics is an important part of who I am.	1	2	3	4	5
(R)	3. I would be ashamed to be a person who had these characteristics.	1	2	3	4	5
(R)	4. Having these characteristics is not really important to me.	1	2	3	4	5
	5. I strongly desire to have these characteristics.	1	2	3	4	5

(R) Reversed

Appendix B

Self-control Scale (Tangney, Baumeister, & Boone, 2004)

Using the scale provided, please indicate how much each of the following statements reflects how you typically are.

			Not at all — Very much
	1.	I am good at resisting temptation	1———2———3———4———5
R	2.	I have a hard time breaking bad habits.	1———2———3———4———5
R	3.	I am lazy	1———2———3———4———5
R	4.	I say inappropriate things	1———2———3———4———5
	5.	I never allow myself to lose control	1———2———3———4———5
R	6.	I do certain things that are bad for me, if they are fun.	1———2———3———4———5
	7.	People can count on me to keep on schedule.	1———2———3———4———5
R	8.	Getting up in the morning is hard for me	1———2———3———4———5
R	9.	I have trouble saying no.	1———2———3———4———5
R	10.	I change my mind fairly often	1———2———3———4———5
R	11.	I blurt out whatever is on my mind.	1———2———3———4———5
R	12.	People would describe me as impulsive.	1———2———3———4———5
	13.	I refuse things that are bad for me	1———2———3———4———5
R	14.	I spend too much money.	1———2———3———4———5
	15.	I keep everything neat	1———2———3———4———5
R	16.	I am self-indulgent at times	1———2———3———4———5
R	17.	I wish I had more self-discipline.	1———2———3———4———5
	18.	I am reliable.	1———2———3———4———5
R	19.	I get carried away by my feelings	1———2———3———4———5

Appendix B (continued)

			Not at all				Very much
R	20.	I do many things on the spur of the moment	1	2	3	4	5
R	21.	I don't keep secrets very well	1	2	3	4	5
	22.	People would say that I have iron self- discipline	1	2	3	4	5
R	23.	I have worked or studied all night at the last minute	1	2	3	4	5
	24.	I'm not easily discouraged	1	2	3	4	5
R	25.	I'd be better off if I stopped to think before acting	1	2	3	4	5
	26.	I engage in healthy practices	1	2	3	4	5
	27.	I eat healthy foods.	1	2	3	4	5
R	28.	Pleasure and fun sometimes keep me from getting work done	1	2	3	4	5
R	29.	I have trouble concentrating	1	2	3	4	5
	30.	I am able to work effectively toward long-term goals	1	2	3	4	5
R	31.	Sometimes I can't stop myself from doing something, even if I know it is wrong.	1	2	3	4	5
R	32.	I often act without thinking through all the alternatives	1	2	3	4	5
R	33.	I lose my temper too easily	1	2	3	4	5
R	34.	I often interrupt people	1	2	3	4	5
R	35.	I sometimes drink or use drugs to excess	1	2	3	4	5
	36.	I am always on time	1	2	3	4	5

(R) Reversed

Appendix C

Orientation for Materialism (Richins & Dawson, 1992)

			Strongly Disagree				Strongly Agree
	1.	I admire people who own expensive homes, cars, and clothes	1	2	3	4	5
	2.	Some of the most important achievements in life include acquiring material possessions	1	2	3	4	5
(R)	3.	I don't place much emphasis on the amount of material objects people own as a sign of success.	1	2	3	4	5
	4.	The things I own say a lot about how well I'm doing in life.	1	2	3	4	5
	5.	I like to own things that impress people.	1	2	3	4	5
(R)	6.	I don't pay much attention to the material objects other people own.	1	2	3	4	5
(R)	7.	I usually buy only the things I need.	1	2	3	4	5
(R)	8.	I try to keep my life simple, as far as possessions are concerned.	1	2	3	4	5
(R)	9.	The things I own aren't all that important to me.	1	2	3	4	5
	10.	I enjoy spending money on things that aren't practical.	1	2	3	4	5
	11.	Buying things gives me a lot of pleasure.	1	2	3	4	5
	12.	I like a lot of luxury in my life	1	2	3	4	5
(R)	13.	I put less emphasis on material things than most people I know.	1	2	3	4	5
(R)	14.	I have all the things I really need to enjoy life.	1	2	3	4	5

Appendix C (continued)

		Strongly Disagree				Strongly Agree
	15. My life would be better if I owned certain things I don't have.	1	2	3	4	5
(R)	16. I wouldn't be any happier if I owned nicer things.	1	2	3	4	5
	17. I'd be happier if I could afford to buy more things.	1	2	3	4	5
	18. It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like.	1	2	3	4	5

(R) Reversed

Appendix D

Scale of Social Desirability (Crowne & Marlowe, 1960)

1. Before voting I thoroughly investigate the qualifications of all the candidates. (T)

2. I never hesitate to go out of my way to help someone in trouble. (T)

3. It is sometimes hard for me to go on with my work if I am not encouraged. (F)

4. I have never intensely disliked anyone. (T)

5. On occasion I have had doubts about my ability to succeed in life. (F)

6. I sometimes feel resentful when I don't get my way. (F)

7. I am always careful about my manner of dress. (T)

8. My table manners at home are as good as when I eat out in a restaurant. (T)

9. If I could get into a movie without paying and be sure I was not seen I would probably do it. (F)

10. On a few occasions, I have given up doing something because I thought too little of my ability. (F)

11. I like to gossip at times. (F)

12. There have been times when I felt like rebelling against people in authority even though I knew they were right. (F)

13. No matter who I'm talking to, I'm always a good listener. (T)

14. I can remember "playing sick" to get out of something. (F)

15. There have been occasions when I took advantage of someone. (F)

16. I'm always willing to admit it when I make a mistake. (T)

17. I always try to practice what I preach. (T)

18. I don't find it particularly difficult to get along with loud mouthed obnoxious people. (T)

Appendix D (continued)

19. I sometimes try to get even rather than forgive and forget. (F)

20. When I don't know something I don't at all mind admitting it. (T)

21. I am always courteous, even to people who are disagreeable. (T)

22. At times I have really insisted on having things my own way. (F)

23. There have been occasions when I felt like smashing things. (F)

24. I would never think of letting someone else be punished for my wrongdoings. (T)

25. I never resent being asked to return a favor. (T)

26. I have never been irked when people expressed ideas very different from my own. (T)

27. I never make a long trip without checking the safety of my car. (T)

28. There have been times when I was quite jealous of the good fortune of others. (F)

29. I have almost never felt the urge to tell someone off. (T)

30. I am sometimes irritated by people who ask favors of me. (F)

31. I have never felt that I was punished without cause. (T)

32. I sometimes think when people have a misfortune they only got what they deserved. (F)

33. I have never deliberately said something that hurt someone's feelings. (T)

Appendix E

The PANAS (Watson, Clark, & Tellegen, 1988)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent **you feel this way right now, that is, at the present moment**. Use the following scale to record your answers.

very slightly or not at all	a little	moderately	quite a bit	extremely
1	2	3	4	5

_ interested	_ irritable
_ distressed	_ alert
_ excited	_ ashamed
_upset	_ inspired
_ strong	_ nervous
_ guilty	_ determined
_ scared	_ attentive
_ hostile	_jittery
_ enthusiastic	_ active
_ proud	_ afraid

Appendix F

Measure for Perception of Others' Reported Performance

Study 1

On average, what do you think is the reported obtained score by other participants in the visual processing task?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Study 2

On average, what do you think is the number of claimed tickets based on performance by other participants in the visual processing task?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

Appendix G

Measure for Hours of Sleep Participants Had the Night Before

How many hours of sleep did you get last night?

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Appendix H

Visual Procession Task – 20 Matrices

5.19	1.69	6.36
4.67	2.91	5.06
4.57	3.05	4.28
4.81	1.82	5.82

Matrix 1

7.21	4.69	2.63
5.23	5.91	6.43
3.57	3.05	8.26
7.84	1.08	4.09

Matrix 2

3.19	1.43	7.21
6.61	2.96	4.95
4.52	5.05	4.28
4.81	1.82	6.81

Matrix 3

8.19	1.69	5.79
1.67	2.91	3.06
4.57	7.04	7.68
4.21	8.31	6.82

Matrix 4

6.56	1.69	2.36
2.61	7.95	7.17
3.58	3.05	3.21
6.31	1.82	7.64

Matrix 5

4.12	2.69	3.34
2.63	7.91	5.75
7.57	8.05	1.25
6.56	3.82	5.88

Matrix 6

5.19	8.69	3.36
3.37	4.28	2.48
6.73	7.72	3.13
4.81	1.31	6.54

Matrix 7

8.19	7.61	3.39
3.81	3.98	8.06
5.52	1.94	7.28
3.48	2.82	6.02

Matrix 8

4.79	8.69	3.36
5.63	4.97	5.06
6.54	3.05	2.28
4.81	3.89	5.21

Matrix 9

3.39	8.19	7.61
8.06	3.81	3.98
7.28	5.52	1.94
6.02	3.48	1.82

Matrix 10

2.12	3.34	2.69
2.63	5.75	7.91
7.57	1.25	8.05
6.66	5.88	3.82

Matrix 11

3.61	6.26	6.92
7.19	4.18	3.17
3.74	6.27	2.57
5.82	3.72	8.81

Matrix 12

4.69	2.63	7.21
5.91	6.53	5.23
3.05	8.26	3.57
1.08	4.09	7.84

Matrix 13

3.39	8.19	7.61
8.06	3.81	3.98
7.28	5.52	1.94
6.02	3.48	1.82

Matrix 14

7.61	3.39	8.19
4.98	8.06	2.81
1.94	7.28	5.02
1.82	5.02	3.48

Matrix 15

4.12	3.34	2.69
2.63	5.75	7.91
7.57	1.25	8.05
6.66	5.88	3.82

Matrix 16

5.19	1.69	6.36
3.67	2.91	5.06
4.57	4.18	4.28
4.81	1.82	5.82

Matrix 17

4.12	3.34	2.69
2.63	5.75	7.91
7.57	1.25	8.05
6.36	5.88	3.82

Matrix 18

7.61	3.39	8.19
3.98	8.06	3.81
1.94	7.28	5.52
1.82	6.02	3.48

Matrix 19

5.19	3.36	8.69
3.37	2.48	4.28
6.73	3.13	7.72
4.71	6.64	1.31

Matrix 20

Appendix I

Manipulation Check for the Writing Task

		Not at all				Very much
1.	How difficult did you find the writing task?	1	2	3	4	5
2.	How much self-control did you have to apply not to use the indicated letters in your essay?	1	2	3	4	5

Appendix J

Manipulation check for Ethical Decision Making: Word Generation Task

_ _ _ EST (honest)

_ _ _ TH (truth)

_ _ _ AL (moral)

_ _ _AL (steal)

_ _ _ _ _ FUL(truthful)

_ _ _ AT(cheat)

_ _ _ _ RAL (immoral)

_ _ _ _CAL(ethical)

_ _ _ _ _OUS (virtuous)

_ _ E (lie)

_ _ _ _ENT (decent)

_ _ _ HT (right)

_ _ _ LE (noble)

_ _ _ _ _ BLE (honorable)

_ _ _ ENT (decent)

_ _ _ D (good)

_ _ _ AD (bread)

_ _ _ DY (candy)

_ _ _ TER (sweater)

_ _ _ OD (flood)

_ _ _ RM (storm)

_ _ _ _ URE (picture)

_ _ _ WER (flower)

_ _ _ DLE (candle)

_ _ _ ER (paper)

_ _ _ DE (grade)

Appendix K

Manipulation Check for Food and Beverage Intake

When was the last time you consumed any food?

4 hours ago	3 hours ago	2 hours ago	1 hour ago	Right before attending this study

When was the last time you drank any beverages other than water?

4 hours ago	3 hours ago	2 hours ago	1 hour ago	Right before attending this study

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action-control: From cognition to behavior* (pp. 11-39). Heidelberg: Springer.

Akers, R. L. (1991). Self-control as a general theory of crime. *Journal of Quantitative Criminology*, *7*(2), 201-211.

Alberts, H. J. E. M., Martijn, C., Greb, J., Merckelbach, H., & de Vries, N. K. (2007). Carrying on or giving in: The role of automatic processes in overcoming ego depletion. *British Journal of Social Psychology, 46(2)*, 383-399.

Ameriks, J., Caplin, A., Leahy, J., & Tyler, T. (2004). *Measuring self-control* (No. w10514). National Bureau of Economic Research.

Aquino, K., & Becker, T. E. (2005). Lying in negotiations: How individual and situational factors influence the use of neutralization strategies. *Journal of Organizational Behavior*, *26(6)*, 661–79.

Aquino, K., & Freeman, D. (2009). Moral identity in business situations: A social-cognitive framework for understanding moral functioning. In D. Narvaez & D. Lapsley (Eds.), *Personality, identity, and character: Explorations in moral psychology* (pp. 375-395). New York: Cambridge University Press.

Aquino, K., Freeman, D., Reed, A., Lim, V. K. G., & Felps, W. (2009). Testing a social-cognitive model of moral behavior: The interactive influence of situations and moral identity central. *Journal of Personality and Social Psychology*, *97(1)*, 123-141.

Aquino, K., & Reed, A. (2002). The self-importance of moral identity. *Journal of Personality*

and Social Psychology, *83 (6),* 1423–1440.

Aquino, K., Reed, A., Thau, S., & Freeman, D. (2007). A grotesque and dark beauty: How moral identity and mechanisms of moral disengagement influence cognitive and emotional reactions to war. *Journal of Experimental Social Psychology*, *43(3)*, 385–392.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes, 50(2)*, 248-287.Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review, 3(3)*, 193-209.

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review, 3(3)*, 193-209.

Barber, L., Munz, D., Bagsby, P., & Powell, E. (2009). Sleep consistency and sufficiency: Are both necessary for less psychological strain? *Stress and Health.* Advance online publication. doi: 10.1002/smi.1292.

Bargh, J. A., & Chartrand, T. L. (1999). The unbearable automaticity of being. *American Psychologist, 54(7),* 462-479.

Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis, & C. M. Judd (Eds.), *Handbook of research methods in social and personal psychology* (pp. 253-285). New York: Cambridge University Press.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51(6)*, 1173-1182.

Baumeister, R. F. (1997). Esteem threat, self-regulatory breakdown, and emotional distress as

factors in self-defeating behavior. *Review of General Psychology, 1(2)*, 145-174.

Baumeister, R. F. (2002). Ego depletion and self-control failure: An energy model of the self's executive function. *Self and Identity, 1(2)*, 129-136.

Baumeister, R. F. (2003). Ego depletion and self-regulation failure: A resource model of self-control. *Alcoholism: Clinical and Experimental Research, 27(2),* 281-284.

Baumeister, R. F., Bratslavksy, E., Muraven, M., & Tice, D. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology, 74(5)*, 1252-1265.

Baumeister, R. F., & Exline, J. J. (1999). Virtue, personality, and social relations: Self-control as the moral muscle. *Journal of Personality, 67(6)*, 1165-1194.

Baumeister, R. F., & Exline, J. J. (2000). Self-control, morality and human strength. *Journal of Social and Clinical Psychology, 19(1)*, 29-42.

Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry, 7(1)*, 1-15.

Baumeister, R. F., Heatherton, T. F., & Tice, D. (1994). Losing control: How and why people fail at self-regulation. San Diego, CA: Academic Press.

Baumeister, R. F., Leith, K. P., Muraven, M., & Bratslavsky, E. (1998). Self regulation as a key to success in life. In D. Pushkar & W. M. Bukowski (Eds.), *Improving competence across the lifespan: Building interventions based on theory* (pp. 117-132), New York: Plenum Press.

Baumeister, R. F., & Schmeichel, B. J. (2004). Self-regulatory strength. In R.F. Baumeister, & K. D. Vohs (Eds.), Handbook of self-regulation: Research, theory and applications (pp. 84-98), New York: The Guilford Press.

Baumeister, R. F., Vohs, K. D., & Tice, D.M. (2007). The strength model of self-control. *Current Directions in Psychological Science, 16(6),* 351-355.

Baumhart, R. C. (1961). How ethical are businessman? *Harvard Business Review, 39(4)*, 6-176.

Blasi, A. (1983). Moral cognition and moral action: A theoretical perspective. *Developmental Review*, *3(2)*, 178–210.

Blasi, A. (1984). Moral identity: Its role in moral functioning. In W. M. Kurtines & J. L. Gewirtz (Eds.), *Morality, moral behavior, and moral development* (pp. 128–139). New York: John Wiley & Sons.

Blasi, A. (2004). Moral functioning: Moral understanding and personality. In D. K. Lapsley & D. Narvaez Eds.), *Moral development, self, and identity* (pp. 335–347). Mahwah, NJ: Erlbaum.

Blasi, A. (2005). Moral character: A psychological approach. In D. K. Lapsley & F. C. Power (Eds.), *Character psychology and character education* (pp. 67–100). Notre Dame, IN: University of Notre Dame Press.

Bolger, N., & Amarel, D. (2007). Effects of social support visibility on adjustment to stress: Experimental evidence. *Journal of Personality and Social Psychology, 92(3),* 458-475.

Bommer, M., Gratto, C., Gravander, J., & Tuttle, M. (1987). A behavioral model of ethical and unethical decision making. *Journal of Business Ethics, 6(4),* 265-280.

Boyle, J. M. (1980). Toward understanding the principle of double effect. *Ethics*, *90*(4), 527-538.

Bruyneel, S. D., Dewitte, S., Franses, P. H., & Dekimpe, M. G. (2009). I felt low and my purse feels light: Depleting mood regulation attempts affect risk decision making. *Journal of Behavioral Decision Making, 22(2)*, 153-170.

Burton, V. S., Cullen, F. T., Evans, T. D., Alarid, L. F., Dunaway, R. G. (1998). Gender, self-control and crime. *Journal of Research in Crime and Delinquency, 35(1)*, 123-147.

Cavanagh, G. F., Moberg, D. J., & Velasquez, M. (1981). The ethics of organizational politics. *Academy of Management Review*, *6*(3), 363-374.

Clarkson, J. J., Hirt, E. R., Jia, L., & Alexander, M. B. (2010). When perception is more than reality: The effects of perceived versus actual resource depletion on self-regulatory behavior. *Journal of Personality and Social Psychology, 98(1)*, 29-46.

Colby, A., & Damon, W. (1992). *Some do care: Contemporary lives of moral commitment.* New York: The Free Press.

Crowne, D. P, & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24(4),* 349-354.

Dawson, J. F. (in press). Moderation in management research: What, why, when and how. *Journal of Business and Psychology*.

DeBono, A., Shmueli, D., & Muraven, M. (2010). Rude and inappropriate: The role of self-control in following social norms. *Personality and Social Psychology Bulletin, 37(1)*, 136-146.

Denson, T. F., von Hippel, W., Kemp, R. I., & Teo, L. S. (2010). Glucose consumption decreases impulsive aggression in response to provocation in aggressive individuals. *Journal of Experimental Social Psychology, 46(6)*, 1023-1028.

Detert, J. R., Trevino, L. K., & Sweitzer, V. L. (2008). Moral disengagement in ethical decision making: A study of antecedents and outcomes. *Journal of Applied Psychology*, *93(2)*, 374–391.

Deutz, R. C., Benardot, D., Martin, D. E., & Cody, M. M. (2000). Relationship between energy deficits and body composition in elite female gymnasts and runners. *Medicine and Science in Sports and Exercise, 32(3)*, 659-668.

DeWall, C. N., Baumeister, R. F., Gailliot, M. T., & Maner, J. K. (2008). Depletion makes the heart grow less helpful: Helping as a function of self-regulatory energy and genetic relatedness. *Personality and Social Psychology Bulletin, 34(12)*, 1653-1662.

Drummond, S. P., Bischoff-Grethe, A., Dinges, D. F., Ayalon, L., Mednick, S. C., & Meloy, M. J. (2005). The neural basis of the psychomotor vigilance task. *Sleep*, *28*, 1059-1068.

Duncan, J., & Owen, A. M. (2000). Common regions of the human frontal lobe recruited by diverse cognitive demands. *Trends in Neurosciences, 23(10)*, 475-483.

Elm, D. R., & Nichols, M. L. (1993). An investigation of the moral reasoning for managers. *Journal of Business Ethics, 12(11),* 817-833.

Finkel, E. J., & Campbell, W. K. (2001). Self-control and accommodation in close relationships: An interdependence analysis. *Journal of Personality and Social Psychology, 81(2)*, 263-277.

Finkel, E. J., Campbell, W. K., Brunell, A. B., Dalton, A. N., Scarbeck, S. J., & Chartrand, T. L. (2006). High-maintenance interaction: Inefficient social coordination impairs self-regulation. *Journal of Personality and Social Psychology, 91(3)*, 263-277.

Finkeneaur, C., Engels, R. C. M. E, & Baumeister, R. F. (2005). Parenting behavior and adolescent behavioral and emotional problems: The role of self-control. *International Journal of Behavioral Development, 29(1)*, 58-69.

Fischer, P., Greitemeyer, T., & Frey, D. (2008). Self-regulation and selective exposure: The impact of depleted self-regulation resources on confirmatory information processing. *Journal of Personality and Social Psychology, 94(3)*, 382-395.

Freud, S. (1923). The Ego and the Id. The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XIX (1923-1925): The Ego and the Id and Other Works, 1-66.

Fujita, K. (2008). Seeing the forest beyond the trees: A construal level approach to self-control. *Social and Personality Psychology Compass, 2(3)*, 1475-1496.

Fujita, K., Trope, Y., & Liberman, N. (2006). The role of mental construal in self-control. In D. De Cremer, M. Zeelenberg, & J. K. Murnighan (Eds.), *Social psychology and economics* (pp. 193-213). New Jersey: Lawrence Erlbaum Associates.

Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi, M. (2006). Construal Levels and Self-control. *Journal of Personality and Social Psychology, 90(3)*, 351-367.

Funder, D. C., & Block, J. (1989). The role of ego-control, ego-resiliency and IQ in delay of gratification in adolescence. *Journal of Personality and Social Psychology, 57(6)*, 1041-1050.

Funder, D. C., Block, J.H., & Block, J. (1983). Delay of gratification: Some longitudinal personality correlates. *Journal of Personality and Social Psychology, 44(6)*, 1198-1213.

Gailliot, M. T., & Baumeister, R. F. (2007a). Self-regulation and sexual restraint: Dispositionally and temporarily poor self-regulatory abilities contribute to failures at restraining sexual behavior. *Personality and Social Psychology Bulletin, 33(2)*, 173-186.

Gailliot, M. T. & Baumeister, R. F. (2007b). The Physiology of Willpower: Linking Blood Glucose to Self-Control. *Personality and Social Psychology Review, 11(4)*, 303-327.

Gailliot, M. T., Baumeister, R. F., DeWall, C. N., Maner, J. K., Plant, E. A., Tice, D. M., Brewer, L. E., & Schmeichel, B. J. (2007). Self-control relies on glucose as a limited energy source: Willpower is more than a metaphor. *Journal of Personality and Social Psychology, 92(2)*, 325-336.

Gailliot, M. T., Peruche, B. M., Plant, E. A., & Baumeister, R. B. (2009). Stereotypes and prejudice in the blood: Sucrose drinks reduce prejudice and stereotyping. *Journal of*

Experimental Social Psychology, 45(1), 288–290.

Gaudine, A., & Thorne, L. (2001). Emotion and ethical decision-making in organizations. *Journal of Business Ethics*, *31*(2), 175-187.

Gino, F., & Bazerman, M. H. (2009). When misconduct goes unnoticed: The acceptability of gradual erosion in others' unethical behavior. Journal of Experimental Social Psychology, 45(4), 708–719.

Gino, F., Schweitzer, M. E., Mead, N. L., & Ariely, D. (2011). Unable to resist temptation: How self-control depletion promotes unethical behavior. *Organizational Behavior and Human Decision Processes, 115(2)*, 191-203.

Goodman, J. F. (2000). Moral education in early childhood: The limits of constructivism. *Early Education and Development*, 11 (1), 37–54.

Gottfredson, M. R., & Hirschi, T. (1990). A general theory of crime. New York, NY: Macmillan Publishing Co.

Green, D. P., Ha, S. E., Bullock, J. G. (2010a). Enough already about "Black Box" experiments: Studying mediation is more difficult than most scholars suppose. *Annals of the American Academy of Political and Social Sciences, 628*, 200-208.

Green, D. P., Ha, S. E., Bullock, J. G. (2010b). Yes, but what is the mechanism? (Don't expect an easy answer. *Journal of Personality and Social Psychology, 98(4),* 550-558.

Greenberg, J. (1990). Employee theft as a reaction to underpayment inequity: The hidden cost of paycuts. *Journal of Applied Psychology, 75(5)*, 561-568.

Greene, J. D., & Haidt, J. (2002). How (and where) does moral judgment work? *Trends in Cognitive Sciences, 6(12)*, 517-523.

Greene, J. D., Nystrom, L. E., Engell, A. D., Darley, J. M., & Cohen, J. D. (2004). The neural

bases of cognitive conflict and control in moral judgment. *Neuron, 44(2)*, 389-400.

Hagger, M. S., Wood, C., Stiff, & Chatzisarantis, N. L. D. (2010). Ego depletion and the strength model of self-control: A meta-analysis. *Psychological Bulletin, 136(4)*, 495-525.

Hardy, S. A., & Carlo, G. (2005). Identity as a source of moral motivation. *Human Development, 48,* 232–256.

Hart, D., Atkins, R., & Ford, D. (1998). Urban American as a context for the development of moral identity in adolescence. *Journal of Social Issues*, *54(3)*, 513–530.

Hasher, L., & Zacks, R. T. (1979). Automatic and effortful processes in memory. *Journal of Experimental Psychology: General*, *108(3),* 356-388.Herman, C. P., & Polivy, J. (1975). Anxiety, restraint and eating behavior. *Journal of Abnormal Psychology, 84(6)*, 666-672.

Hoch, S. J., & Loewenstein, G. F. (1991). Time in-consistent preferences and consumer self-control. *Journal of Consumer Research, 17(4),* 492-507.

Isen, A. M., & Reeve, J. (2005). The influence of positive affect on intrinsic and extrinsic motivation: Facilitating enjoyment of play, responsible work behavior, and self-control. *Motivation and Emotion*, *29*(4), 295-323.

Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion?: Is it all in your head? *Psychological Science, 21(11)*, 1686-1693.Jones, T. M. (1991). Ethical decision making by individuals in organizations: An issue contingent model. *Academy of Management Review, 16(2)*, 366-395.

Jordan, J., Mullen, E., & Murnighan, J.K. (2009). On the pendulum of moral action: Contrasting effects of own and others' past moral behavior on future moral behavior. Manuscript submitted for publication. Kavla, G. S. (1983). When two wrongs make a right: An essay on business ethics. *Journal of Business Ethics, 2*, 61- 66.

Kohlberg, L. (1966). Moral education in the schools: A developmental view. *The School Review*, *74*(1), 1-30.

Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research, 39(2),* 329-358.

Levav, J., & Mcgraw, A. P. (2009). Emotional Accounting: How Feelings About Money Influence Consumer Choice. *Journal of Marketing Research, 46(1),* 66-80.

Lysonski, S., & Durvasula, S. (2008). Digital piracy of MP3s: consumer and ethical predispositions. *Journal of Consumer Marketing*, *25*(3), 167-178.

MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology, 58*, 593-614.

Martijn, C., Tenbuelt, P., Merckelbach, H., Dreezens, E., & de Vries, N. K. (2002). Getting a grip on ourselves: Challenging expectancies about loss of energy after self-control. *Social Cognition, 20(6)*, 441-460.

Masicampo, E. J., & Baumeister, R. F. (2008). Toward a physiology of dual-process reasoning and judgment: Lemonade, willpower, and expensive rule-based analysis. *Psychological Science, 19(3)*, 255-260.

Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research, 45(6)*, 633-644.

Mazar, N. & Ariely, D. (working paper). Temporal influences on cheating behavior: The "What the Hell" Effect," MIT Sloan School of Management.

Mead, N. L., Baumeister, R. F., Gino, F., Schweitzer, M. E., & Ariely, D. (2009). Too tired to tell the truth: Self-control resource depletion and dishonesty. *Journal of Experimental Social Psychology, 45(3)*, 594-597.

Metcalfe, J., & Mischel, W. (1999). A hot/cool system analysis of delay of gratification: Dynamics of willpower. *Psychological Review, 106(1),* 3-19.

Miller, E. K., & Cohen, J. D. (2001). An integrative theory of prefrontal cortex function. *Annual Review of Neuroscience, 24(1)*, 167-202.

Mischel, W. (1996). From good intentions to willpower. In P.M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 197 – 218). New York: Guilford Press.

Mischel, W., Shoda, Y., Rodriguez, M. L. (1989). Delay of gratification in children. *Science, 244*, 933-938.

Monin, B., & Miller, D. T. (2001). Moral credentials and the expression of prejudice. *Journal of Personality and Social Psychology, 81(1)*, 33-43.

Muraven, M., Baumeister, R. F., & Tice, D. M. (1999). Longitudinal improvement of self-regulation through practice: Building self-control strength through repeated exercise. *The Journal of Social Psychology*, *139(4)*, 446-457.

Muraven, M., Collins, R. L., & Nienhaus, K. (2002). Self-control and alcohol restraint: An initial application of the self-control strength model. *Psychology of Addictive Behaviors, 16(2)*, 113-120.

Muraven, M., Collins, R. L., Shiffman, S., & Paty, J. A. (2005). Daily fluctuations in self-control demands and alcohol intake. *Psychology of Addictive Behaviors, 19(2)*, 140-147.

Muraven, M., Gagné, M., Rosman, H. (2008). Helpful self-control: Autonomy support, vitality, and depletion. *Journal of Experimental Social Psychology, 44*, 573-585.

Muraven, M., Pogarsky, G., & Shmueli, D. (2006). Self-control depletion and the general theory of crime. *Journal of Quantitative Criminology, 22(3)*, 263-277.

Muraven, M., Shmueli, D., & Burkley, E. (2006). Conserving self-control strength. *Journal of Personality and Social Psychology, 91(3)*, 524-537.

Muraven, M., & Slessareva, E. (2003). Mechanisms of self-control failure: Motivation and limited resources. *Personality and Social Psychology Bulletin, 29(7)*, 894-906.

Muraven, M., Tice, D. M., & Baumeister, R. F (1998). Self control as a limited resource: Regulatory depletion patterns. *Journal of Personality and Social Psychology, 74(3)*, 774-789.

Nasir, N. S., & Kirshner, B. (2003). The cultural construction of moral and civic identities. *Applied Developmental Science*, 7 (3), 138–47.

Nucci, L. (1981). Conceptions of personal issues: A domain distinct from moral or societal concepts. *Child Development*, 114-121.

Oaten, M., & Cheng, K. (2006a). Improved self-control: The benefits of a regular program of academic study. *Basic and Applied Social Psychology, 28(1)*, 1-16.

Oaten, M., & Cheng, K. (2006b). Longitudinal gains in self-regulation from regular physical exercise. *British Journal of Health Psychology, 11(4)*, 717-733.

Oaten, M., & Cheng, K. (2007). Improvements in self-control from financial monitoring. *Journal of Economic Psychology, 28(4)*, 487-501.

O'Fallon, M. J., & Butterfield, K. D. (2005). A review of the empirical ethical decision making literature: 1996-2003. *Journal of Business Ethics, 59(4)*, 375-413.

Payne, S. L., & Nantz, K. S. (1994). Social accounts and metaphors about cheating. *College Teaching*, *42*(3), 90-96.

Pocheptsova, A., Amir, O., Dhar, R., & Baumeister, R. F. (2009). Deciding without resources: Resource depletion and choice in context. *Journal of Marketing Research, 46(3)*, 344-355.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, and Computers, 36(4)*, 717-731.

Reed, A., & Aquino, K. F. (2003). Moral identity and the expanding circles of moral regard toward out-groups. J*ournal of Personality and Social Psychology*, *84 (6)*, 1270–1286.

Reed, A., II., Aquino, K., & Levy, E. (2007). Moral identity and judgments of charitable behaviors. *Journal of Marketing, 71(1),* 178 –193.

Rest, J. (1982). A Psychologist Looks at the Teaching of Ethics. *The Hastings Center Report*, *12(1)*, 29-36.

Richeson, J. A., & Shelton, J. N. (2003). When prejudice does not pay: Effects of interracial contact on executive function. *Psychological Science, 14(3)*, 287-290.

Richeson, J. A., & Trawalter, S. (2005). Why do interracial interactions impair executive function? A resource depletion account. *Journal of Personality and Social Psychology, 88(6)*, 934-947.

Richeson, J. A., Trawalter, S., & Shelton, J. N. (2005). African Americans' implicit racial attitudes and the depletion of executive function after interracial interactions. *Social Cognition, 23(4)*, 336-352.

Richins, M. L. (2004). The material values scale: Measurement properties and development of a short form. *Journal of Consumer Research, 31(1),* 209-219.

Richins, M. L.,& Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research, 19(3)*, 303-316.

Rose, P. (2007). Mediators of the association between narcissism and compulsive buying: The

roles of materialism and impulse control. *Psychology of Addictive Behaviors*, *21*(4), 576-581.

Russell, M. A. H. (1971). Cigarette smoking: Natural history of a dependence disorder. *British Journal of Medical Psychology, 4(1)*, 1-16.

Sage, L., Kavussanu, M., & Duda, J. (2006). Goal orientations and moral identity as predictors of prosocial and antisocial functioning in male association football players. *Journal of Sports Sciences, 24(5),* 455– 466.

Schmeichel, B. J. (2007). Attention control, memory updating, and emotion regulation temporarily reduce the capacity for executive control. *Journal of Experimental Psychology: General, 136(2)*, 241-255.

Schmeichel, B. J., Vohs, K. D., & Baumeister, R. F. (2003). Intellectual performance and ego depletion: Role of the self in logical reasoning and other information processing. *Journal of Personality and Social Psychology, 85(1)*, 33-46.

Schmeichel, B. J., & Vohs, K. D. (2009). Self-affirmation and self-control: Affirming core values counteracts ego depletion. *Journal of Personality and Social Psychology, 96(4)*, 770-782.

Shao, R., Aquino, K., & Freeman, D. (2008). Beyond moral reasoning: A review of moral identity research and its implications for business ethics. *Business Ethics Quarterly, 18(4),* 513–540.

Sheets, V. L., & Braver, S. L. (1999). Organizational status and perceived sexual harassment: Detecting the mediators of a null effect. *Personality and Social Psychology Bulletin, 25(9),* 1159-1171.

Skarlicki, D. P., & Folger, R. (1997). Retaliation in the workplace: The roles of distributive,

procedural, and interactional justice. *Journal of Applied Psychology, 82(3),* 434-443.

Skarlicki, D. P., van Jaarsveld, D. D., & Walker, D. D. (2008). Getting even for customer mistreatment: The role of moral identity in the relationship between customer interpersonal injustice and employee sabotage. *Journal of Applied Psychology, 93(6)*, 1335-1347.

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology, 89(6),* 845-851.

Stewart, C. C., Wright, R. A., Azor Hui, S. K., & Simmons, A. (2009). Outcome expectancy as a moderator of mental fatigue influence on cardiovascular response. *Psychophysiology, 46(6)*, 1141-1149.

Stone-Romero, E. F., & Rosopa, P. J. (2008). The relative validity of inferences about mediation as a function of research design characteristics. *Organizational Research Methods, 11(2)*, 326-352.

Stucke, T. S., & Baumeister, R. F. (2006). Ego depletion and aggressive behavior: Is the inhibition of aggression a limited resource? *European Journal of Social Psychology, 36(1)*, 1-13.

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self control predicts good adjustment, less pathology, better grades and better interpersonal success. *Journal of Personality, 72(2)*, 271-324.

Tenbrunsel, A. E., & Smith-Crowe, K. (2008). Ethical decision making: Where we've been and where we are going. *Academy of Management Annals, 2(1),* 545-607.

Tice, D. M., Bratslvasky, E., & Baumeister, R. F. (2001). Emotional distress regulation takes precedence over impulse control: If you feel bad, do it! *Journal of Personality and Social*

Psychology, 80(1), 53-67.

Trevino, L. K. (1986). Ethical decision making in organizations: A person-situation interactionist model. *Academy of Management Review, 11(3)*, 601-617.

Trevino, L. K., Weaver, G. R.,& Reynolds, S. J. (2006). Behavioral ethics in organizations: A review. *Journal of Management, 32(6)*, 951-990.

Tyler, J. M., & Burns, K. C. (2009). Triggering conservation of the self's regulatory resources. *Basic and Applied Social Psychology, 31(3)*, 255-266.

Tyson, T. (1990). Believing everyone else is less ethical: Implications for work behavior and ethics instruction. *Journal of Business Ethics, 9(9),* 715-721.

Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency: Individual variation in action identification. *Journal of Personality and Social Psychology, 57(4)*, 660-671.

Vohs, K. D., Baumeister, R. F., & Ciarocco, N. (2005). Self-regulation and self-presentation: Regulatory resource depletion impairs management and effortful self presentation depletes regulatory resources. *Journal of Personality and Social Psychology, 88(4)*, 632-657.

Vohs, K. D., Baumeister, J. M., Schmeichel, R. F., Twenge, B. J., Nelson, N. M., & Tice, D. M., (2008). Making choices impairs subsequent self-control: A limited-resource account of decision making, self-regulation, and active initiative. *Journal of Personality and Social Psychology, 94(5)*, 883-898.

Vohs, K. D., & Faber, R. J. (2007). Spent resources: Self-regulatory resource availability affects impulse buying. *Journal of Consumer Research, 33(4)*, 537-547.

Vohs, K. D. & Heatherton, T. F. (2000). Self-regulatory failure: A resource depletion approach. *Psychological Science, 11(3)*, 249-254.

Wang, X. T., & Dvorak, R. D. (2010). Sweet future. *Psychological Science, 21(2)*, 183-188.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54(6)*, 1063-1070.

West, S. G., Aiken, L. S., & Krull, J. L. (1996). Experimental personality designs: Analyzing categorical by continuous variable interactions. *Journal of Personality, 64(1)*, 1-48.

Wikström, P. H., & Treiber, K. (2007). The role of self-control in crime causation. *European Journal of Criminology, 4(2)*, 237-264.

Winterich, K. P., Mitial, V., & Ross, W. T. (2009). Donation behavior toward in-group and out-groups: The role of gender end moral identity. *Journal of Consumer Research, 36(2),* 199-214.

Zhong, C. B., Ku, G., Lount, R. B., & Murnighan, J. K. (2010). Compensatory ethics. *Journal of Business Ethics, 92(3),* 323-339.