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WHEN KNOWING JUST ISN'T ENOUGH: EXAMINING OF THE ROLE OF
MORAL EMOTIONS IN HEALTH DECISION MAKING USING THE THEORY OF
PLANNED BEHAVIOR

by

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WHEN *KNOWING* JUST ISN'T ENOUGH: EXAMINING OF THE ROLE OF MORAL
EMOTIONS IN HEALTH DECISION MAKING USING THE THEORY OF
PLANNED BEHAVIOR

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University of Nebraska, 2011

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A proposed integrated Theory of Planned Behavior (TPB) model aimed to examine the role of moral emotions and two health outcomes: prosocial behaviors and smoking outcomes. Based on Tangney's work with shame and guilt-proneness, it was expected that those more prone to guilt would engage in more prosocial behaviors and those more prone to shame would engage in more smoking behaviors. Prosocial behaviors were found to be negatively associated with smoking outcomes. However, results suggested that guilt and shame-proneness seem to function similarly in predicting behavioral outcomes. Components within the TPB were generally positively correlated with each health outcome, however findings indicated that only parts of the TPB predicted certain health behaviors. For example, when examined with moral emotions, the TPB was associated with public and anonymous behaviors for specific gender groups. In contrast, when parts of the TPB were examined without moral emotions in a mediation analysis, intention was associated with smoking outcomes. It could be speculated that engaging in prosocial behaviors may require both cognitive and emotional evaluations of the behavior rather than acting on a need to fulfill an addiction as with smoking. Thus, the integrated model may better predict prosocial behaviors. Furthermore, the TPB failed to mediate between moral emotions and health behaviors. Rather, intentions emerged as the mediating variable between guilt-proneness and smoking indices such that higher levels guilt-proneness was associated with fewer intentions to engage in smoking. Shame-proneness was not associated with smoking outcomes as expected. Future experimental and longitudinal studies are needed to examine the role of guilt and shame-proneness taking into account cultural differences and age.

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Introduction

Health is becoming more important to us as a society now more than ever. There is an increase in grocery stores that are dedicated to providing only organic produce, dairy, and meat products. Local grocers now have expanding sections for locally grown organic produce treated without pesticides and even offering home delivery services with boxes full of fresh items straight from their crops. Restaurants are increasing their scrutiny of healthy ingredients in their dishes as well as fast food companies. Bookstores have growing aisles of healthy cookbooks, weight loss books, and motivational books to aid in educating the public. Television commercials portray a picture of health from actresses' dramatic weight loss using the Jenny Craig's point system. However, statistics from the Centers of Disease Control and Prevention indicate that the health of the average American is declining with the rise of diabetes, cardiovascular disease, cancer, HIV, a myriad of sexually transmitted diseases and many other preventable diseases. Despite the abundance of research interest with regards to health behaviors, an important variable that is not being integrated in health research, messages, and advertisements is morality.

The premise of this study is based on investigating the link between moral emotions and health decision-making using the components from the Theory of Planned Behavior (Ajzen, 1985; 1988; 1991). The purpose for this investigation was to further understand whether being shame or guilt-prone would influence engaging in or refraining from certain health behaviors. A proposed integrated Theory of Planned Behavior (TPB) was created to learn more about the link between health decision-making and how moral emotions influence these decisions.

This dissertation will be organized starting first with an overview of the topics of moralization of health behaviors, the mechanisms behind moralization, and research linking moral variables to health behaviors. Second, an introduction into the components of the Theory of Planned Behavior (TPB, Ajzen, 1985; 1988; 1991) represented by moral norms, attitudes, perceived behavioral control, and intentions with a discussion of past research findings supporting the utility of this theory in explaining health behaviors. Third, a brief review of relevant moral development theories including Piaget's structural developmental approach, Kohlberg's cognitive-developmental stage theory, Turiel's domain theory, and care-based approaches by Gilligan, Skoe, and Eisenberg will follow. Fourth, a more focused discussion on moral emotions central to this study: guilt and shame along with consequences of adaptation or maladaptation and gender related differences to each emotion. Fifth, a discussion of the conceptual link between moral emotions and health behaviors will be presented. Sixth, the proposed integrated model consisting of moral variables, Theory of Planned Behavior components, and health behaviors will be presented followed by a summary of the research hypotheses will be presented. Finally, the methodology, an overview of data analytic procedures, results, and the discussion will be presented.

Moralization of Health Behaviors

The health behaviors that will be examined are smoking and prosocial behaviors as these behaviors have moral health consequences. When engaging in a behavior, the direct and immediate benefit or detriment towards another person determines if the behavior is indeed moral. This criterion is a crucial element as any behavior may be

argued to have a moral element to it. For instance, becoming a vegetarian has no direct and immediate benefits or consequences for another person.

In the present dissertation, the study of health behaviors will be divided into positive and negative moral behaviors. Smoking will be considered the negative health behavior while prosocial behaviors will indicate positive health behaviors. A short discussion will be presented for each health behavior as it relates to morality in the following sections. A brief introduction to each set of behaviors and a brief discussion of gender-related differences along with reasons and as to why they are relevant to this review study and the proposed model are presented below.

Engaging in negative health behaviors yields risks for one's self as well as others. For example, smoking has implications for one's health and second-hand smoking is deemed harmful towards others. The moral consequences of negative health behaviors are obvious: a person engaging in such behaviors causes direct and, in some instances, irreversible harm towards others. The focus of negative health behaviors is to discourage engaging in them for moral and health reasons. Understanding negative health behaviors is critical as previous studies have examined its link to morality and their findings will serve as a catalyst to investigate other types of negative behaviors.

In contrast, engaging in positive health behaviors, specifically prosocial behaviors have been found to yield benefits for the individual as well as others. Prosocial behaviors can be considered a positive health behavior because engaging in these behaviors not only benefits others who receive help, but also the person giving help. For example, someone who does charity work for children or spends their life helping those in poverty is an individual who is behaving in a prosocial manner. These individuals who exhibit

high levels of prosocial behaviors benefit from a number of positive mental and physical health outcomes because they are more likely to help others thus fostering positive moods (Carlson & Miller, 1987). Positive moods then lead to additional health outcomes such as healthier patterns of cardiovascular activity, better immune functioning (Booth-Kewley & Friedman, 1987; Herbert & Cohen, 1993), and an increased willingness to engage in healthy behavioral practices such as breast cancer screenings (Irving, Snyder, & Crowson, 1998). A study done examining resiliency and risk for substance use in Latin American immigrants found that individuals who engaged in more prosocial behaviors were more likely to have greater resilience against substance use (Marsiglia, Luengo, & Villar, 2006). Animal research studies have also found important links between neuropeptides such as oxytocin and vasopressin with prosocial behaviors during maternal care behaviors (e.g., breast feeding) in addition to other prosocial behaviors (Carter, 1998; Gimpl & Fahrenholz, 2001). Finally, there is evidence that individuals who exhibit high levels of prosocial behaviors live longer and report better overall health (Penner, Dovidio, Piliavin, & Schroeder, 2005). Therefore, including prosocial behaviors as a positive health behavior in the proposed model is relevant due to its link to both positive behavioral and neurophysiological health outcomes. The focus of positive health behaviors is to encourage individuals to make and subsequently engage in decisions. Therefore, the moralization of health behaviors is essential to understand how moral cognitions and emotions influence each other to result in health behavioral changes.

Moralization

Moralization (Rozin, 1997) is the process where a behavior that was once free of any attached moral meanings, gains a moral element and leads to behavioral alterations.

For instance, when behaviors that were once personal preferences or seen as personal rights (e.g., smoking) are transformed into ones that society deem morally wrong, the individual's value and belief system is altered. New values are integrated into the current belief system and as a result, behavioral changes take place (e.g., choosing not to smoke in close proximity to one's family in knowing the consequences of second-hand smoke). Both moral cognitions and emotions are influencing each other during this process to impact decision-making and eventually, health behaviors.

There are extrinsic and intrinsic reasons that influence why individuals choose to engage in any type of behavior, such as using condoms or helping an ill relative (McCauley, Rozin, & Schwartz, 1998). External reasons resulting from outside sources such as laws, groups, and society reflect moralization because they act as sources of motivation for the individual to engage in certain behaviors. These behaviors such as obeying the law or stopping at a red light to avoid a ticket helps the individual avoid being shunned or labeled as a deviant that carries negative social repercussions (Rozin, 1997). Internal reasons such as a personal desire or determination (e.g., I want to lose weight) to behave in ways that are beneficial to the individual and others (e.g., I want to lose weight to see my children grow up) can act as a catalyst to motivate the person into action. The mechanisms behind internalizing of specific health behaviors have yet to be discovered. However, it is important to acknowledge that internalization may play an important role in how individuals make health decisions and whether or not they eventually engage in a particular health behavior (e.g., quit smoking, drinking, or start running).

Meat consumption is a primary example used in the literature that demonstrates how a behavior can become moralized. Decisions about meat consumption can take place through a combination of cognitions and emotions. When meat became associated with disgust, it initially led to the emotional rejection of meat (Rozin, Haidt, & McCauley, 1993). In the Hindu culture for example, the consumption of beef is deemed disgusting and immoral because the cow is a holy animal, making disgust an emotion associated with immoral behaviors (Schweder, Much, Mahapatra, & Park, 1997). One may physically visit a slaughterhouse and become overwhelmed by the sights and sounds. Then, through associations of disgust and anguish with either watching or reading about the slaughtering of animals for consumption, the person may cease to consume meat (Dwyer, Kandal, Mayer & Mayer, 1973; Amato and Partridge, 1989; Rozin et al., 1997). This shows that emotions alone may drive decisions about engaging in health behaviors.

Research has shown that emotions may contribute in motivating individuals to behave in appropriate ways to preserve their health. Smoking campaigns have used graphic images depicting health consequences from smoking: breathing tubes coming out of someone's neck or someone in a wheelchair connected to an oxygen tank to induce fear, disgust, guilt, sadness, or shame in hopes of helping others to quit smoking. However, there is a lack of literature that bridges together the aspect of moral emotions to health decision-making. The future findings from this study may aid in strengthening the bridge and serve to contribute helpful findings for both the scientific and policy arena.

The aims and hypotheses of this dissertation are presented below:

Specific Aim 1: To demonstrate the relation between guilt-proneness, shame-proneness, and health behaviors: prosocial behaviors, smoking behavior (number of cigarettes

smoked), negative smoking expectancy outcome (perceptions of negative consequences), and positive expectancies outcomes (likelihood and desirability of positive reinforcement).

Hypothesis 1: Higher scores on guilt-proneness would predict higher a likelihood of engaging in prosocial behaviors, lower likelihood of engaging in smoking, higher likelihood of expecting negative outcomes from smoking, and lower likelihood of expecting positive outcomes from smoking.

Hypothesis 2: Higher scores on shame-proneness would predict a lower likelihood of engaging in prosocial behaviors, higher likelihood of engaging in smoking, lower likelihood of expecting negative outcomes from smoking, and higher likelihood of expecting positive outcomes from smoking.

Specific Aim 2: To examine the relations of the Theory of Planned Behavior components in relation to prosocial behaviors and smoking behavior.

Hypothesis 3: Each component, that is, norms, attitudes, perceived behavioral control, and intentions would be positively correlated to each prosocial behavior and smoking behavior.

Hypothesis 4: Higher scores on perceived behavioral control would predict a higher likelihood to engage in prosocial behaviors and smoking behavior

Hypothesis 5: Higher scores on intentions would predict a higher likelihood of engaging in prosocial behaviors and smoking behavior.

Specific Aim 3: To examine the relation between guilt proneness and shame proneness with the Theory of Planned Behavior components: moral norms, attitudes, perceived

behavioral control, and intentions towards engaging in prosocial behaviors and smoking behavior.

Hypothesis 6: Higher scores on guilt-proneness would be associated with a higher likelihood to agree with moral norms towards prosocial behaviors and smoking behaviors. However, higher scores on shame-proneness would be associated with lower likelihood to agree with moral norms towards prosocial and smoking behaviors.

Hypothesis 7: Higher scores on guilt-proneness would be associated with more positive attitudes towards prosocial behaviors and less positive attitudes towards smoking behaviors. However, higher scores on shame-proneness would be associated with less positive attitudes towards prosocial behaviors and more positive attitudes towards smoking behaviors.

Hypothesis 8: Higher scores on guilt-proneness would be associated with more perceived behavioral control towards engaging in prosocial behaviors and refraining from smoking. However, higher scores on shame-proneness would be associated with more perceived behavioral control towards refraining from prosocial behaviors and engaging in smoking behavior.

Hypothesis 9: Higher scores on guilt-proneness would be associated with more intentions to engage in prosocial behaviors and less intentions to engage in smoking. However, higher scores on shame-proneness would be associated with fewer intentions to engage in prosocial behaviors and more intentions to engage in smoking.

Hypothesis 10: Perceived behavioral control would mediate the relation between moral emotions and health behaviors. However, intentions would mediate the relation between moral emotions and health behaviors, also.

Specific Aim 4: To demonstrate the negative relations between prosocial behaviors, smoking behavior and outcome expectancies.

Hypothesis 11: The relations between prosocial behaviors, smoking behavior, and outcome expectancies would be negatively related to one another to demonstrate that they are different types of behaviors (e.g., positive versus negative health behaviors).

Specific Aim 5: To explore the gender related differences in the proposed integrated model.

Health Behaviors

Smoking

The meat consumption example shows that one's feelings and thoughts may influence the decisions made concerning particular behaviors. The moralization of smoking (Rozin & Singh, 1999) is a candidate example constructed to comprehensively examine how moral cognitions and emotions influence each other in health decision-making.

Smoking has a long history and is one behavior that has changed radically in the eyes of American people over the course of fifty years. By the end of World War II, smoking had become a popular social behavior and was considered the icon of American life (Brandt, 1997). The executives at tobacco companies masterminded intriguing advertisements (e.g., Virginia Slims, Marlboro) that would appeal to people of all ages, ethnicities, and gender. While adults were the initial targets of tobacco companies, in order to increase profits, the industry sought out to target adolescents, ages 15-19, with a new brand called Newport. The adolescents who bought into this appeal were primarily African Americans with low socioeconomic status. Furthermore, adolescents believed

that smoking would promote their social status as a member of the modern generation, (Katz, 1997).

Nonetheless, epidemiological studies have uncovered the detrimental effects of first- and second-hand cigarette smoking that causes serious health implications. According to the Environmental Protection Agency (1992), first-hand smoke is defined as smoke that is primarily inhaled by the smoker. Second-hand smoke is defined as smoke that is exhaled by a smoker and inhaled by a non-smoker. Second-hand smoke is considered more detrimental because the chemicals in the smoke are more concentrated. These studies resulted in the Surgeon General Luther Terry's report in 1964 that revolutionized the way society and individuals thought about smoking, leading to the moralization of cigarette smoking in the 20th century. This report impacted the public by bringing a new perspective on the deadly effects of smoking and demonstrated that smoking was no longer a desirable habit but a destructive one causing lung cancer and emphysema to not only the smoker but also those around them.

A major aspect of this report, aside from linking cigarette smoking to lung cancer, altered the way people thought about their health and gave the public a greater sense of empowerment in exercising their rights to breathe and live healthier lives without being subjected to cigarette smoke. Most importantly, when people started understanding the risks and consequences of cigarette smoke exposure, especially when they chose not to be smokers, they started asserting their rights to protect their health and applying moral meanings to the act of smoking. Brandt (1997) concluded that because the public was given information that allowed them to freely make decisions, rather than being told, about to determine whether being or not being exposed to smokers second-hand smoke or

smoking themselves was a risk; they people were more likely to assess the this risk as a personal one. The moralization of smoking, through the influences of moral cognitions (i.e. thoughts of health being harmed) and emotions (i.e., guilty feelings of hurting others) serves as a springboard to study other behaviors where similar cognitions and emotions are applicable.

Prosocial Behaviors

Sets of behaviors that have moral health implications are called prosocial behaviors (i.e., behaviors intended to benefit others: see Carlo, 2006; Eisenberg & Fabes, 1998; Staub, 1978). Prosocial behaviors have been found to be associated with empathic emotions, social cognitions, and sympathy, which are important in developing moral values and fostering moral behaviors (Davis & Oathout, 1987; Eisenberg et al., 1990, 1993; Estrada, 1995; Batson, 1987). Prosocial behaviors are also negatively related to delinquency, aggression, and externalizing behaviors (see Eisenberg & Fabes, 1998). Since prosocial acts are related to empathy and sympathy, emotions that perpetuate caring and helping others, including these behaviors will serve as components for a model of positive health outcomes.

There are many different ways to define prosocial behaviors, but for the purposes of this dissertation, the classification of these behaviors will be drawn from a measure of prosocial tendencies developed by Carlo and Randall (2001). Using prior theories and research (Batson, 1998; Eisenberg & Fabes, 1998; Latane & Darley, 1970; Staub, 1978) to develop this measure, Carlo and Randall (2001) identified six categories of prosocial behaviors consisting of: altruism, dire, emotional, public, anonymous, and compliant. Operationally, each behavior is defined as follows: *altruistic* actions benefit others with a

cost to oneself, *dire* behaviors refer to actions that benefit others in emergency situations, *emotional* actions occur in response to emotionally charged situations, *public* actions are those done in front of other people, *anonymous* tendencies are done without other people's knowledge, and lastly, *compliant* acts are done only when someone requests or asks for help.

Prosocial behaviors are generally thought of as either norm- or convention-based (See Turiel, 1989) or moral-based behaviors. Some prosocial behaviors are norm- or convention-based behaviors, such as helping an elderly person with his groceries. Analogous to smoking and risky sexual behaviors, there are also prosocial behaviors that are moral-based such as committing to the care of one's offspring. Taking care of one's child is an obligation and expectation that should be met by both parents; however, not committing to the care of their offspring however becomes a moral-based behavioral issue because of harmful consequences resulting from lack of basic needs such as lack of shelter, food, and water that could result in death since infants and young children cannot fend for themselves.

Determining what type of norm childcare falls under may differ between ethnic groups or societies where a father's commitment to their offspring is viewed differently thus leading to different behaviors. (e.g., polygamist societies). For example, Shiono and Quinn (1994) have shown that African-American children are five to nine times more likely to live in a home without their biological father or father figure present. Moreover, between 1980 and 2006, the data show that African-Americans have the highest rate of single parent family births (Centers for Disease Control and Prevention). However, it is important to note that many social, economic, and psychological factors influence this

behavior and thus not all African-American males relinquish their duties as a father. Children growing up in a single mother household face a number of psychological, economical, and emotional problems such as poverty, chemical dependency and abuse, teenage pregnancy, sexual promiscuity, and depression (Bureau of the Census, 1997). By relinquishing one's duty as a father, the consequences for the child include early onset drug and alcohol use, increased likelihood of going to jail (Pergamit, Huang, & Lane, 2001), and four times more likely to report teen pregnancy (Browder, Vazsonyi, Jeannin, & Michaud, 2009). Abandoning parental responsibilities not only results in physical and emotional risk factors like lack of shelter and depression but also morally based behavioral risk factors as well.

Socially, prosocial behaviors require sound emotion regulation and social cognitive skills (Eisenberg & Fabes, 1998) and, as a result, have been found to have positive impacts on interpersonal relationships as well (Carlo, 2006). Prior research have shown that individuals who frequently engage in prosocial behaviors are deemed more popular, more trustworthy, report less loneliness, exhibit high academic performance (see Carlo, 2006 for review) and show higher levels of self esteem (McCarroll, Lindsey, MacKinnon-Lewis, Chambers, & Frabutt, 2009). Prosocial behaviors have also been linked to increased positive mood in individuals who help others (Guéguen, & De Gail, 2003) as well as those who receive gratitude from those they have helped (Tsang, 2006). Additionally, a longitudinal study with nuns showed that prosocial behaviors such as helping others, cooking for one another, and teaching others were associated with increased positive mood, positive outlooks on the future, more positive mental health, and lived longer lives which is one indication of good physical health (Danner, Friesen,

& Collier, 2008). Furthermore, altruistic prosocial behaviors were negatively related to cigarette smoking (Carlo, Wilkinson, & Sandman, 2010), substance use (Duncan, Duncan, Stryker, & Chaumeton, 2002; Prinstein, Boergers, & Spirito, 2001), aggression (McCarroll, Lindsey, MacKinnon-Lewis, Chambers, & Frabutt, 2009), and delinquency (Henry, 2008). Thus, prosocial behaviors are and have been linked to behaviors that foster positive and negative health outcomes.

While there is abundant research establishing the link between cultural differences, prosocial behaviors, and health outcomes, examining these differences are beyond the scope of the present dissertation. Nonetheless, these studies demonstrate the theory that prosocial behaviors have diverse influences that span from cognition, emotion, and culture with health-like elements. The present dissertation then will focus on understanding prosocial behaviors as a health behavior that has been linked to moral emotions by utilizing the Theory of Planned Behavior.

Gender-Related Differences in Health Behaviors. Since this study includes gender differences as a variable of interest, it is necessary to briefly examine the relevant findings as it relates to moral development and health behaviors. Prosocial behavior research spurred by Gillian (1982) found that females from a young age are socialized toward issues of care and interpersonal relationships, which in turn continue to influence how they perceive and handle situations as women. These gender-specific socializations lead to differences in prosocial moral reasoning resulting in differences in prosocial behaviors in certain contexts (Carlo, Koller, Eisenberg, Dasilva, & Frohlich, 1996). For example, girls, more so than boys, are encouraged to show care type behaviors towards others (Whiting & Edwards, 1988; Fabes et al., 1999) such as showing concern for a

friend who is crying or hugging a sibling who is hurt. In contrast, boys who exhibit similar behaviors suffer negative responses by their peers leading to feelings of shame and abandonment. Furthermore, Eagly and Crowley (1986) found that men were had a greater tendency to engage in chivalrous types of prosocial behaviors whereas women were more likely to engage in more nurturing types of behaviors. Moreover, additional studies support previous findings by showing that girls and women scored higher than boys and men on care-based or prosocial moral reasoning whereas boys and men scored higher in justice-oriented moral reasoning (Jaffe & Hyde, 2000). These findings illustrate that gender related differences in prosocial behaviors exist and may likely stem from early childhood socializations that are influenced by specific circumstances (e.g., care-oriented versus justice-oriented situations).

Gender differences have also been found between men and women with regards to smoking. A study by Burger and Gochfield (1989) examined smoking behavior in a university setting and found that men smoked more cigarettes, inhaled significantly more, talked to more men, and took longer breaks than females. In situations where social interaction was abundant, men smoked more cigarettes. This suggests that social interactions encourage smoking in men by serving as an easy outlet to commiserate and converse with people they may otherwise not have interacted with. Females however, held cigarettes closer to their faces in a lounge setting yet smoked fewer cigarettes when engaging in social interactions. This suggests that if there were increased opportunities for social support or interactions for women, less smoking would occur. Furthermore, cross-cultural studies examining smoking behaviors in Taiwan also support the finding that men smoked significantly more cigarettes than women and were found to be more

sensitive to social environmental factors such as being at a bar or lunch break with coworkers (Tsai, Tsai, Yang, & Kuo, 2008).

Interestingly, researchers also found differences in female smoking behaviors. Women in Taiwan started smoking later than their western counterparts, approximately 20 years of age versus 12 to aid in weight control as well as emotional anxiety (Thorner, Jaszyna-Gasior, Epstein, & Moolchan, 2007). Although young women in western societies started smoking sooner than their Taiwanese counterparts (but later than young boys), they also smoked more cigarettes on a daily basis. This suggests that young girls could be more susceptible to tobacco addiction based on metabolic, genetic, and hormonal factors (Spear, 2000). Furthermore, young girls who start smoking early and frequently are also at an increased risk of cervical and uterine cancer leading to fertility dysfunction, premature loss of bone density, early onset emphysema and chronic obstructive pulmonary disease (Johnson & Richter, 2002). These findings show evidence of gender differences in smoking behavior between men and women for varying social and personal reasons. However, it is not clear what role guilt and shame-proneness have in predicting engaging in smoking behaviors.

Research has shown that gender differences exist between men and women for both prosocial behaviors and smoking. Social cues and personal factors influence whether an individual engages in a behavior. This dissertation takes into consideration the possibility that moral emotions may influence health decision-making, specifically whether being prone to shame or guilt will affect the actually engaging in such behaviors or not. An understanding of the role of moral emotions and engaging in health behaviors is further explored through the Theory of Planned Behavior.

Theory of Planned Behavior

This dissertation aims to merge the affective aspects of morality with health decision-making. Therefore, the theory of planned behavior (Ajzen, 1985; 1988; 1991) will be integrated with moral emotion variables due to its robustness in predicting health behaviors. These variables, such as norms, attitudes, perceived behavioral control, and intentions, are central to the theory of planned behavior and have been demonstrated to influence diverse health behaviors.

Description

The theory of planned behavior (Ajzen, 1985; 1988; 1991) was developed as an extension of the theory of reasoned actions (Fishbein & Ajzen, 1975; 1977; 1980), which states that a person's behavior is a function of the intentions. Intentions are measured by asking questions such as "*How likely is it that, in the next six months, you will use a condom the next time you have vaginal sex?*" using a Likert-type scale (CDC, 1993a). Therefore, intentions can be influenced by attitudes towards the behavior and subjective norms. Attitude is defined as "the degree to which a person has a positive or negative evaluation of the behavior" that is measured by using bipolar semantic differential scales such as: *comfortable-uncomfortable* and *pleasant-unpleasant* (CDC, 1993a). Subjective norm is defined as "the perception that someone important to you thinks you should or should not perform a behavior" and is measured by questions such as "*People who are important to me think I should use quit smoking,*" using Likert-type scales (Fisher, Fisher, & Rye, 1995). Behavioral outcomes are examined in two ways; the first is an outcome belief using questions such as "*Using condoms will prevent AIDS*" with responses such as *likely vs. unlikely* (Chan, 1994). The second is an outcome evaluation using statements

such as “*Preventing AIDS is...*” with outcome descriptors such as *good* vs. *bad* (Chan, 1994).

A key component integrated into the theory of reasoned actions was perceived behavioral control that resulted in the theory of planned behavior (Ajzen, 1985; 1988; 1991). Perceived behavioral control is an individual’s perception of his or her own control over a certain behavior (e.g., *I believe I have control to quit smoking*) and has been found to relate to past behaviors (Ajzen, 1985). Research by Ajzen and Fishbein (1975) and others have found that individuals with higher perceived behavioral control are more likely to form intentions towards a certain behavior compared to those who have low perceived behavioral control (Albarracin, Johnson, Fishbein, & Muellerleile, 2001).

Research using the Theory of Planned Behavior

The theory of planned behavior has been used to predict a wide array of behaviors including dieting (Sejwacz, Ajzen & Fishbein, 1980), seatbelt use (Trafimow & Fishbein, 1994), using contraceptives (Fisher, 1984), smoking (Fishbein, 1980), and condom usage (Gerrard, Gibbons, & Bushman, 1996). With smoking in particular, studies have examined the utility of the theory of planned behavior in a variety of smoking behaviors such as intentions to quit, relapse, and to predict future smoking behaviors. Intentions have been shown to be a strong positive predictor for future nonsmoking behaviors (McMillan & Conner, 2003; Smith, Bean, Mitchell, Speizer, & Fries, 2007; Stanton, Barnett, & Silva, 2005). The other components in the theory of planned behavior including attitudes, subjective norms, and perceived behavioral control have shown significant relations with intentions to quit smoking in African-American teenage girls (Hanson, 1997). Additionally, a study by Stockdale and colleagues (2005) demonstrate

that college student attitudes towards smoking issues such as marketing and smoking restrictions were significant predictors of smoking attitudes. These studies support the findings that components of the theory of planned behavior are useful in predicting smoking behaviors. Therefore, this dissertation will use smoking as the base health behavior because of the extensive amount of research that has been done in order to provide further support for the utility of the theory of planned behavior and to serve as a guideline to help examine prosocial behaviors as a health behavior.

The theory of planned behavior has been extended beyond the realm of health behaviors that we are most familiar with such as smoking or dental exams into ones that include prosocial types of behaviors such as blood donation (Giles & Caines, 1995), volunteering (Warburton & Terry, 2000), altruism and helping (Konkoly & Perloff, 1990), and charitable giving (Smith & McSweeney, 2007). This dissertation aims to expand the types of prosocial behaviors examined using the theory of planned behavior by integrating moral variables due to their direct link to these variables (e.g., guilt and shame). These prosocial behaviors will consist of: altruism, direct, anonymous, public, emotional, and compliance.

To address the types of norms used in examining different outcomes, a meta-analysis of 185 studies testing the theory of planned behavior concluded that the subjective norm was the weakest predictor of behavioral intentions (Armitage & Conner, 2001). Thus, from this finding, although norms are important and influential, there is a critical need to modify the types of norms in order to examine what people should do compared to what people actually do (Cialdini, Reno, & Kallgren, 1990; Terry & Hogg, 1996). The subjective norm construct from the original theory of planned behavior

(Ajzen, 1985; 1988; 1991) was distinguished into three different types of norms (Cialdini, Reno, & Kallgren, 1990; Reno, Cialdini, & Kallgren, 1993): injunctive norm which is equivalent to the original subject norm (e.g., what significant others think you should do), descriptive norm (e.g., perception of whether other people also perform the behavior), and moral norm (e.g., norms that have personal feelings of responsibility attached to them).

Many studies have adopted this new distinction ranging in behaviors such as tobacco and alcohol use (McMillan & Conner, 2003), safe sex behaviors (White, Terry, & Hoag, 1994), drug use (Conner & McMillan, 1999), and playing the lottery (Sheeran & Orbell, 1999). Findings show that using descriptive norms successfully predict intentions and behavioral outcomes independent of injunctive and moral norms (Rivis & Sheeran, 2003), particularly in predicting anti-social behaviors such as littering (Cialdini, Reno, & Kallgren, 1990) and alcohol and tobacco use (McMillan & Conner, 2003a). The distinction of descriptive norms and injunctive norms has further helped to explain as well as promote prosocial behaviors (Warburton & Terry, 2000).

However, moral norms have shown a direct influence on intentions by predicting, on average, an additional 4% of the variance in intentions. Moral norms have been particularly useful in predicting prosocial behaviors such as blood donation (Pomazel & Jaccard, 1976), organ donation (Schwartz & Tessler, 1972), volunteering (Warburton & Terry, 2000), and charitable giving (Smith & McSweeney, 2007). Therefore, for this dissertation, moral norms will be used to test the theory of planned behavior in relation to prosocial behaviors and smoking. As indicated in past research, examining moral norms will be more applicable in elucidating prosocial behaviors and smoking behaviors

compared to descriptive and injunctive norms. Furthermore, investigating moral norms will provide an additional measure for the moral emotion aspect of the dissertation.

Gender-Related Differences in the Theory of Planned Behavior

Limited studies have examined gender differences among the components of TPB with low-risk single-occasion drinking as the behavioral health outcome. Hassan and Shiu (2007) found that attitudes and social norms were significant predictors of intentions for both genders, whereas perceived behavioral control was not a significant predictor. Interestingly, this finding differs from Murgraff and colleagues' (2001) report that found perceived behavioral control as the single most influential predictor of intentions, followed by attitudes to engage in a behavior (Murgraff et al., 2001). Taken together, these studies demonstrate that social norms are a major contributor and may explain the variance observed in women. This suggests that norms play a key role in influencing the behaviors of women. Furthermore, Hassan and Shui (2007) found that the TPB model was not as an effective model in the behavioral analysis of women relative to men, suggesting that while the model in full does not predict low-risk single-occasion drinking, some components may still influence behavior nonetheless. Although research regarding this topic is limited and is beyond the scope of the current study, it is necessary to briefly acknowledge that evidence for gender differences exist not only in moral emotions or health behaviors, but within the TPB components as well.

Theories of Moral Development

Although pioneering theories of moral development below display strong cognitive components such as perspective taking, reasoning, and formulating judgments, these theories are not comprehensive and lack key elements in explaining the role of

emotions in understanding human behavior, particularly health behaviors. Nonetheless, the proposed theories offer an important approach that morality develops with age. An understanding of the groundwork from where research on moral development originated in psychological research helps to highlight the gaps within the literature and elements that needs to be integrated.

Psychoanalytic Approach

Sigmund Freud's psychosocial stages provided the foundation from which the early theories of moral development emerged. While controversial in nature, the importance of including this approach as background for the current study is to better understand where moral development began. According to Freud (1930, 1955), each stage is sexually charged where the individual, namely the infant, is constantly struggling between the need to comply with society's demands and the need to fulfill one's physical desires. The way the individual copes with these conflicts through each stage then dictates one's personality as well as social and emotional functioning.

The most critical stage associated with moral development is the third stage, commonly referred to as the phallic stage (Freud, 1930; 1935). Freud proposed that this phase occurs around three to six years of age when a young boy begins to view his mother, as an object of sexual affection while his father becomes his rival. The development of unacceptable feelings for his mother in addition to the fear of retaliation by his father such as castration (i.e., Oedipus Complex) produces a feeling of anxiety within the boy and in turn alleviates such feelings. In conjunction with this proposal, Carl Jung postulates that young girls encounter the same dilemma (i.e., Electra Complex) (Jung, 1913). In both cases, the child learns to cope by identifying, emulating, and

internalizing the values and norms shared by the same-sex parent. The moral behaviors instilled in boys result from internalized moral values set by society as well as the incorporation of his father's demands for compliance. In contrast, girls' internalized moral behaviors originate from a more personal approach guided by emotions and a need to care for others (Freud, 1930; 1955). Therefore, by internalizing the moral values from each parent, the feelings of anxiety are transformed into feelings of guilt and a need to avoid it. Taken together, the individual copes by conforming to moral values, social norms, and rules set by the parental unit (Hoffman, 1970a; Grusec, 2006). Freud and Jung, through psychoanalysis, scratched the surface of what roles social norms, emotions, and justice might play into what eventually developed into the moral development literature. Building on constructs of norms, emotions, and justice led to the progress of other theories of moral development from a more social and cognitive development standpoint.

Piaget

A pivotal force in research on morality was Piaget's (1932) two-stage theory of moral development. This theory focuses on two aspects of moral reasoning: respect for rules and notions of justice. Before children enter the first stage of moral development, they are in a pre-moral period. This is where preschool aged children tend to show no awareness of social rules. Then, between the ages of five to ten, they enter the first stage known as heteronomous morality. At this stage, children believe that powerful authority figures (e.g., God, policemen) create rules and laws that are rigid and cannot be altered. With regards to rules, children believe there is only a "right" or "wrong" way to act. They make judgments based on the consequences of a behavior, rather than the person's intent.

In terms of justice, they believe in immanent justice where those who violate social rules will eventually be punished. The second stage, called the autonomous morality, occurs by age ten or eleven where children realize that social rules can be altered. They make judgments for punishment based on the person's intent rather than the consequence. Piaget believed that in order to progress from one stage to the other, a child must have well developed role-taking skills (i.e., perspective taking). Thus, the two-stage theory introduced the importance of moral judgments in understanding moral development.

Kohlberg

Kohlberg (1969) extended Piaget's work with the cognitive-developmental stage theory of moral development that also equated the core of morality with justice. Here, the individual must also successfully pass through each stage before advancing to the next. The stages range from understanding right and wrong to seeking approval from others to having an understanding of personal rights and justice. Kohlberg has been the driving force behind research on the development of morality because of his six stage theory (Kohlberg, 1976) which consists of the following: Stage 1: Child takes the perspective of authority figure and believes it is in their best interest to obey this person to avoid punishment, Stage 2: Child develops their own perspective as well as others' and believes reciprocity equals fairness in social interactions. Between stage 2 and 3, the child shifts from egocentrism that is viewing the world from their own perspectives, to sociocentrism where they begin to take the views of other's into consideration. Stage 3: Child starts to take on the group's perspective and believes it is best to conform with the group, Stage 4: Adolescent takes society's perspective and believes laws must be obeyed to maintain order in society, Stage 5: Adult creates their own moral principles which center around a

social contract that is agreed upon by the majority, and Stage 6: Individuals apply universal ethical principles. However, researchers have found little supportive data for stage 6. Therefore, it has been omitted from the most recent scoring manual (Colby & Kohlberg, 1987). Kohlberg's theory expanded and elaborated on Piaget's work by demonstrating that moral development is a complex transformation from egocentrism to social-centrism. For the purposes of this review paper, Piaget and Kohlberg's theory of moral development shows the importance of a child's ability to shift from their own personal needs to the needs of others which is relevant for understanding moral judgments of risky behaviors.

Turiel

Turiel's (1979; 1983; 1989) domain theory, also cognitively based, is a reflection of Piaget's and Kohlberg's work of stage-based development, with stages ranging from pre- to post-conventional stages. These stages also incorporate judgments of welfare, rights, and justice. However, the difference between Piaget and Kohlberg's stage-based theory and Turiel's pre- to post-conventional stages is perhaps in the conceptualization of morality in the form of domains, rather than stages. With stages, one has to successfully pass each stage before moving to the next stage. Also, one cannot regress back to previous stages. With domains, one can freely move from one domain of cognitive functioning to another. The three domains are derived from research done in children and their interpretation of how the social world is structured. These consist of moral, social-convention, and personal domains. The moral domain includes issues of justice, welfare, trust, and responsibility while focusing the concern on how individuals ought to behave towards one another. The social-conventional domain concerns knowledge about what is

socially appropriate and accepted which is acquired through social interactions with individuals and other social systems. Lastly, the personal domain that refers to the understanding of other's feelings and one's own feelings, intentions, and personality differences acquired through social interactions with parents and friends (Smetana, 1983). Turiel's theory and its relevance to this paper show that health behaviors will not be considered moral issues if clear cut arguments are not presented. If a person feels the health behavior falls into the personal or conventional domain, they will be less likely to make good health decisions and will be less likely to comply to doctor's instructions. However, cross culturally, some behaviors are not considered moral issues (e.g., eating with one's hands) but rather as conventional or personal issues. These cross cultural differences will be helpful in understanding why certain health behaviors may be deemed moral or immoral.

Care-Based Approaches

In addition to these theories which focus on justice, welfare, and rights of others, and moral cognitions, Gilligan postulated that men and women differ in their moral orientation which is how they organize and understand moral dilemmas (Gilligan, 1982). In a study by Gilligan and Attanucci (1988), they utilized real-life dilemmas (e.g., a situation with a pregnant woman considering an abortion) to examine the differences between adolescent male and female perspectives with care and justice. They found that people are generally concerned about both justice and care for others, but tend to focus on one or the other depending on gender. That is, women focused more on care dilemmas and men focused more on justice dilemmas. Furthermore, when dilemmas surrounded relationships (e.g., family, wife, children), both men and women focused on care for

others. But, when dilemmas concern other's rights (e.g., child's right to education), both men and women tended to focus on justice.

Other moral researchers like Skoe and Eisenberg expanded on Gilligan's care-based approach as well. Skoe developed the Ethic of Care Interview (ECI) to examine levels of care reasoning between males and females (Skoe, 1987; Skoe & Maria, 1991). Eisenberg and colleagues (Eisenberg, Miller, Shell, McNally, and Shea, 1991) developed the theory of prosocial moral reasoning that focuses on decision making in behaviors that affects others. These researchers have shown that engaging in behaviors and in some cases, health behaviors, may be contingent upon reasoning abilities that elicit caring and empathy. The importance of care-based reasoning with regards to moral issues is its influence on health decision-making and the way these decisions impact others.

It is important to show that the earliest work in morality started off as cognitively based sequence-stage models where the focus was on dilemmas centering on justice, rights, and welfare. The common thread among Piaget, Kohlberg, Turiel, Eisenberg and others is the emphasis they placed on moral reasoning as an important element of understanding moral behavior. The work of these scholars yields important evidence that moral reasoning might be linked to and explains some health behaviors. However, over a span of fifty years from Piaget's (1932) structural developmental theory, research on morality started to incorporate more than cognitions and what people thought about certain situations. The way individuals felt about dilemmas, otherwise known as moral affect, became recognized as a driving force behind morally based behaviors and emotions. Thus, the focus of this proposal will be on furthering the understanding that moral emotions such as shame and guilt-proneness have on health behaviors.

Moral Emotions: Guilt and Shame-Proneness

The theories reviewed have a cognitive-based platform from which moral thought and behavior develop. To date, there exists research that examines the role of moral emotions with regards to predicting behaviors. Moral emotions such as empathy has been found to be positively associated to prosocial behaviors (Eisenberg & Miller, 1987) and negatively related to antisocial, aggressive behaviors (Miller & Eisenberg, 1987). Research in behavioral health outcomes (e.g., exercise for cardiovascular health) note the predictive power of cognitions over emotion (see Gallo, Ghaed, & Bracken, 2004; Powell & Thelen, 1996). However, there is limited research available that examines the role of moral emotions in predicting health behaviors although moral emotions have been found to play a critical role in behavioral adherence (e.g., applying a nicotine patch every 4 hours) (Tangney, Stuewig, & Mashek, 2007). Therefore, it might be expected that some health behaviors might be influenced by moral emotions.

While not all health behaviors are the same, not all moral emotions are the same. Some health behaviors may be influenced by guilt-proneness such as withholding an ill child prescription medicine while others may be more influenced by shame-proneness such as strangers scolding a pregnant mother for smoking. Even though individuals may acknowledge that a certain kind of behavior may be harmful towards another person, it is important that they *feel* that their actions have an impact on others. Kroll and Egan (2004) argued, “Moral emotions provide the motivational force – power and energy – to do good and to avoid doing bad.” Thus, it may be curious to consider that emotions may play a bigger role in *different* types of health behaviors.

Feelings of guilt and shame-proneness have been shown to differ between genders. Only a few studies have examined gender-related changes with regards to moral emotions and health behaviors, while less is known about gender-differences in relation to the TPB model as a whole. Therefore, a review of the different dimensions of guilt and shame-proneness is presented below covering the following topics regarding the main theories of moral emotions focusing on conceptualizing and defining these emotions for this dissertation study, adaptation resulting from each emotion, and a brief discussion about gender-related differences.

Guilt-Proneness

Though there are several ways to characterize guilt and shame-proneness, the current definitions of guilt and shame-proneness are based on the work of Tangney and her colleagues for this dissertation (Tangney, 1990; 1991; 2007; Tangney, Miller, Flicker, & Barlow, 1996a). These researchers have established the links between guilt and shame-proneness with decision-making and behavioral outcomes that are relevant to this dissertation. Furthermore, their research has resulted in the differentiation of painful feelings associated with guilt and shame-proneness. While pain is not a moral emotion and will not be examined in this study, it is important to highlight that other emotions may influence these moral emotions that ultimately impact health decision-making.

Guilt has been prevalently defined as an emotion that is experienced in private (Ausubel, 1955; Benedict, 1946). That is, it is an emotion that may be felt when one is entirely alone, where one's conscience has a chance to speak loudly to one's personal breach of personal standards (e.g., moral transgression) (Tangney, Miller, Flicker, & Barlow, 1996). The cause of guilt stems from the person's choice of behaviors in a given

situation, rather than their core beliefs, values or personality (Lewis, 1971). Research has shown that people who have a choice of behaving differently in a situation often time ruminate about the 'other' choice so much that the guilt actually motivates them to seek reparative actions (e.g., prosocial behavior such as apologizing) (Tangney, Miller, Flicker, & Barlow, 1996). Guilt and seeking reparative actions may be beneficial in promoting better decision-making and in turn may lead to better health outcomes. Further, an individual feeling guilt-prone is more likely to experience guilty feelings leading to a difference in which types of behaviors (i.e., health behaviors) they engage in.

Individuals inflicted with guilt were less likely to participate in negative behaviors (Tangney et al., 1996a) and engage in more internalized behaviors. By internalizing, individuals take more time to process and evaluate information with their existing values, thus reinterpreting the situation in a more rational state of mind. This, in turn, may help with anger management resulting in more prosocial behaviors such as apologizing (Stuewig, Tangney, Heigel, & Harty, 2006). That is, the guilt-prone individual may experience some level of anger, but is more likely to accept responsibility and have an enhanced ability to empathize with others (Tangney, 1990; 1991; 1995; Tangney, Wagner, Fletcher, & Gramzow, 1992). Feelings of guilt lead the guilt-prone individual to engage in more prosocial behaviors by being proactive (e.g., making promises with the intent of quitting smoking permanently) with the ultimate goal of making amends.

Painful feelings that result from shame and guilt vary across different situations (e.g., public vs. private) and in intensity. Those who are prone to guilt have been shown to exhibit less intense feelings for pain since feeling guilty is not an emotion presented for public display, intense scrutiny, cause one to feel a sense of exposure, or make one

feel physically small (Tangney, 1993). Nevertheless, guilty feelings are associated with feelings of regret such as not choosing the better alternative behavior or choice (Wicker, Payne, & Morgan, 1983). Thus, the guilt-prone individual is more likely to engage in ruminations resulting in a nagging focus on a specific transgression where the individual wished that s/he had behaved differently by choosing the better alternative. This rumination causes guilt to build (Tangney et al., 1996a; Tangney, Stuewig, & Mashek, 2007) and leads the guilt-prone individual to undo the bad deed (Tangney, Miller, Flicker, & Hill-Barlow, 1996). Ultimately, it is hypothesized that because guilt-prone individuals have been shown to be more adaptive, their health-related decisions leads to better health outcomes. For instance, those who are more guilt-prone will engage in more prosocial behaviors and less negative behaviors such as smoking.

Shame-Proneness

The other moral emotion central to this dissertation is shame-proneness. For the purposes of this dissertation, the conceptualization and definition of shame-proneness is based on the work of Tangney and colleagues (Tangney, 1990; 1991; 2007; Tangney, Miller, Flicker, & Barlow, 1996a). Shame has been operationalized as an affective response following *public* disapproval of one's shortcomings (Ausubel, 1955; Benedict, 1946). The central core of the individual, that is, their morals, values, and beliefs is negatively evaluated rather than the specific behavior they engaged in (Lindsay-Hartz, 1984). Shame has been considered an "ugly" emotion because it draws attention away from the situation or the affected individual and back onto the individual who committed the shameful act (Tangney, 1991). The individual's behavior is deemed as a direct reflection of his or her character and is often times accompanied by feelings of

psychological pain, a sense of exposure, belittlement, loneliness and a desire to hide or escape (Lewis, 1971; Tangney, 1993; Tangney, Miller, Flicker, & Barlow, 1996; Edelmann, 1981; Tangney, Stuewig, & Mashek, 2007). Being shame-prone then is conceptualized as an individual who is more likely to experience shameful feelings that lead to differences in the types of health behaviors they choose to engage in and ultimately health outcomes.

The feelings of pain associated with being prone to shame are more intense than prone to guilt because it affects one's core sense of self. The pain experienced by those prone to shame is similar to embarrassment (Izard, 1977) but on a more intense level (Borg, Staufenbiel, & Scherer, 1988). Embarrassing moments result in reactions such as laughing and blushing. In contrast, shameful moments result in feelings of condemnation, being futile and incapable, and a strong desire to hide (Buss, 1980; Lewis, 1992; Ortony, Clore, & Collins, 1988; Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996). Because the experience of shame is painful and focuses on the self, it does not allow the individual an opportunity to make cognitive reinterpretations or emotional inquiries to the other affected individuals. (Tangney, Stuewig, & Mashek, 2007; Tangney et al., 1994; Tangney, 1991; 1995a; 1995b; Tangney et al., 1996b). Shame causes the individual to perceive themselves as full of deficiencies and results in negative attributions such as being closely tied to the self (Modigliani, 1968; Shott, 1979; Klass, 1990).

Therefore, it is hypothesized that those prone to shame will be less adaptive in the methods they use to cope with their emotions, leading to poor health decisions and resulting in poor health outcomes. Specifically, those who are more shame-prone will engage in less prosocial behaviors and more negative behaviors (e.g., smoking) based on

the increased likelihood for engaging in negative behaviors that are harmful to themselves and potentially others while in a shameful state.

Adaptation

It is important to elaborate briefly about the adaptation of each emotion because of the potential impacts emotion have on behavioral health outcomes. First, those who are guilt-prone appear to be more adaptive in the ways they learn to cope with their guilt-inducing situation and have healthier relationships (Baumeister, Stillwell, & Heatherton, 1994; 1995a; 1995b). The key reason is because those who are guilt-prone are more likely to be empathetic as well. Tangney (1991) suggests three reasons for this relation: 1) when one focuses on the ‘bad’ behavior and how it may affect someone else, one may be engaging in role taking that encourages empathic responses, 2) a sense of responsibility to ‘do right’ is associated with guilt, and 3) motivation fueled by empathy leads the guilt-prone individual to engage in prosocial behaviors like seeking reparations (Lindsay-Hartz, 1984; Tangney, 1989; Wicker, Payne, & Morgan, 1983). Thus, those who engage in role taking (e.g., perspective taking) and are guilt-prone may be more likely to make healthier decisions.

However, it is important to note that while being guilt-prone is the more adaptive emotion because it correlates with empathy, too much of a good thing can be detrimental. If an individual experiences too much guilt or is too guilt-prone, it becomes maladaptive and results in chronic self-blame and obsessive rumination. When this occurs, it is thought to be a result of guilt-proneness infused with shame-proneness (Blatt, 1974; Ellis, 1962; Hartman & Loewenstein, 1962; Weiss, 1993). An example of this is called “survival guilt” which has been linked to psychological maladjustment such as

depression and occurs when the individual fails to help someone else in distress (Kubany, Owens, Iannce-Spencer, McCaig, et al., 1995; 2005). Conversely, those who are highly prone to guilt are also less likely to engage in antisocial and risky behaviors (Tangney, 1994) such as promiscuous sex, reckless driving, and drug and alcohol use (Tangney & Dearing, 2002). Thus, it can be posited that certain levels of guilt-proneness may help invoke the use of morals resulting in better, healthier decision making leading to better behavioral health outcomes.

On the other hand, shame-prone individuals have been shown to exhibit defensive behaviors such as externalization and passive aggressiveness. By externalizing their shame-proneness, individuals often blame others for their shameful situation and react in hostile manners by way of physical or verbal attacks. When shame-prone individuals react in angry and defensive ways towards others, Lewis (1971) suggests that this is an attempt to regain a sense of control, pride, and agency. Those who act out in passive aggressive ways engage in behaviors such as deliberately doing something requested of them. For example, smoking in the house when it was previously agreed upon not to, intentionally withdrawing from others, or using technological advances such as Facebook or Twitter to send cryptic messages that are directed at a specific individual (Andrews, Brewin, Rose, & Kirk, 2000; Bennett, Sullivan, & Lewis, 2005; Harper & Arias, 2004; Paulhus, Robins, Trzeniewski, & Tracy, 2004; Tangney & Dearing, 2002; Tangney, Burggraf, Hamme, & Domingos, 1988; Burggraf, 1989; Lewis, 1971; Lindsay-Hartz, 1984). Because irrational judgments, feelings, and behaviors result from shame, those who are shame-prone have a decreased capacity to feel empathy towards others (Tangney, 1991). Painful feelings associated with being prone to shame may then be

maladaptive in promoting healthy behaviors and instead cause the individual to continue making poor health decisions which may lead to harm or pain in others (e.g., continuing to smoke while pregnant after being ostracized in public by strangers).

Gender-Related Differences

By reviewing how guilt and shame-proneness affects men and women differently, it may help us better understand how emotions influence the decision-making process and the resulting health outcomes. Researchers have shown that a predictor of guilt-proneness in young females was related positively to how well they controlled their anger and negatively to outward expressions of anger (Lutwak, Panish, Ferrari, & Razzino, 2001). This finding suggests that because girls are socialized to care for others and that expressing anger is undesirable, they are better able to control showing their angry feelings than their male counterparts (Gilligan, 1982; Chodorow, 1978). Findings by Walter and Burnaford (2006) are consistent with previous research in showing that girls were more prone to guilt and shame than boys. These findings support previous research that a girl's experiences of guilt become intensified during adolescence resulting in a tendency to ruminate. In addition, society holds a girl's behavior to a higher standard than boys and may influence how well they manage their guilty or shameful feelings (Stegall, Zeman, & Cassano, 2004). With regards to gender differences in shame-proneness, Akbag and Imamoglu (2010) also found that women were more likely to be prone to shame than men (Gross, 1996; Tangney & Dearing, 2002; Woien, Ernst, Patock-Peckham, & Nagoshi, 2003). Furthermore, researchers suggest that women are more affected by their wrong doings than men (Kochanska, Gross, Lin, & Nichols, 2002) because they are more interpersonally sensitive than men (Zahn-Waxler, Kochanska,

Krupnick, & McKnew, 1990). This finding could be explained by attachment and parenting styles, however these variables are beyond the scope of the current dissertation.

There is reasonable evidence to support that gender differences exist in guilt and shame-proneness. As discussed above, there is a considerable amount of evidence that supports gender differences in health behaviors and elements of the Theory of Planned Behavior. This dissertation thus draws on previous research to propose an integrated TPB model including moral emotions, prosocial and smoking behaviors, and outcome expectancies from smoking. Considerations of possible effects of gender-related differences across all the variables were also taken into account. However, since no research to date has specifically examined these variables together in its entirety, gender differences were explored within the proposed model.

The Links

Moral Emotions and Health Behaviors

Insofar, an introduction of a phenomenon called moralization, health behaviors, the Theory of Planned Behavior, theories of moral development and moral emotions consisting of guilt and shame-proneness including brief reviews in research examining gender-related differences for each variable have been discussed. Before moving on, it is necessary to discuss the literature that supports the link between moral emotions and health behaviors as well as moral emotions and the Theory of Planned Behavior (Ajzen, 1985; 1988; 1991).

It should be noted that the literature examining the relation between guilt- and shame-proneness with the health behaviors is rather limited. This is due to the fact that past research has examined guilt- and shame-proneness with psychological outcomes

such as depression and anxiety (see Tangney et al., 1996; Tangney, Miller, Flicker, & Barlow, 1996), rather than health outcomes. This dissertation aims to examine the relation between moral emotions with health outcomes in hopes that it may yield useful information to help to fill the present gap that is present between the moral development and health literature.

Research examining guilt, shame, and smoking has primarily been done through qualitative methods. In a study by Chapple, Zieband, and McPherson (2004), participants were interviewed about how they felt, particularly feelings of stigma and blame, about their lung cancer. Participants stated feelings of shame and guilt; often blaming for their disease on watching smoking advertisements and family members. Older participants were less likely to be blamed for having lung cancer compared to their younger counterparts. The reason may be that during the time older individuals were smoking, it was socially acceptable. Furthermore, another possible cause of lung cancer for older participants was through exposure from asbestos. For younger participants with lung cancer, they stated feeling more ashamed because they have no acceptable reasons such as asbestos exposure or socially accepted smoking for their cancer. However, to help curb the blame and shame felt in younger participants, research has shown that prolonged exposure to second-hand smoke plays a large role in the development of lung cancer in non-smokers.

A population that has become a particular source of interest with regards to smoking and moral emotions is women. The first study interviewed women living with advanced chronic obstructive pulmonary disease who require the use oxygen tanks in order to have a continual flow of oxygen (Jonsdottir & Jonsdottir, 2007). These women

also relapse repeatedly after many attempts to quit smoking in spite of their current health situation. Women in this sample stated that they particularly felt shame in two instances: not being able to quit smoking and exposing their children to smoking during childhood resulting in their children becoming smokers themselves or fanatic anti-smokers.

A second study interviewed mother's confessions and justifications for smoking from mothers. Women in this study expressed feelings of guilt for exposing their children to tobacco and for hiding their smoking from others (Irwin, Johnson, & Bottorff, 2005). They also expressed that by openly sharing their feelings of guilt it would help shield them from experiencing shame from others finding out about their smoking behaviors. This coincides with past findings that shame is a more painful emotion because of the public exposure component (i.e., getting caught, others finding out).

In both studies, women expressed both shame and guilt in relation to smoking, but primarily in situations where their children's health was concerned. Interestingly, they did not express these feelings in relation to their own health. It should also be noted that only state guilt and shame have been examined in relation to smoking behaviors but not trait guilt- and shame-proneness. Because specific situations (e.g, state) elicit either guilt or shame, behavioral outcomes may be different when compared to an individual who more guilt- or shame-prone (i.e., trait) in most situations. Given that the literature relating shame- and guilt-proneness to smoking is limited in women and men, this dissertation aims to further understand the role moral emotions have in influencing men, women, and their smoking behaviors and to provide information that may help fill this gap.

Research linking shame and guilt-proneness to the other health behavior in question, prosocial behaviors are also very limited. One recent study examined the link

between guilt and shame-proneness in relation to bullying, victimization, and prosocial behaviors in a group of children aged 9-11 years of age (Menesini & Camodeca, 2008). These findings show that children who were more prosocial reported feeling more guilt and shame compared to bullies. This is consistent with past research where being both guilt- and shame-prone in adaptive amounts prevented people from committing transgressions and promoted prosocial behaviors (Bybee & Quiles, 1998; Olthof, 2002; Williams, 1998). However, these findings are meager compared to the abundant literature that examines the relation of shame and guilt and prosocial behaviors as moral behaviors, rather than health behaviors. Thus, this dissertation will be the first to examine this link by conceptualizing prosocial behaviors as a health behavior. It is hypothesized that those who are more guilt-prone will be more likely to engage in prosocial behaviors and those who are more shame-prone will be less likely to engage in prosocial behaviors.

Moral Emotions and The Theory of Planned Behavior

One of the main features of the proposed integrated Theory of Planned Behavior model is the integration of moral emotions. However, the research evidence associating moral emotions and TPB components is also limited. For example, a study by Murgraff and colleagues' (2001) found PBC as the single most influential predictor of intentions, followed by attitudes, to engage in a behavior (Murgraff et al., 2001). Research by Ajzen and Fishbein (1975) found that individuals with higher PBC were more likely to form intentions towards a certain behavior compared to those who have low PBC control (Albarracin, Johnson, Fishbein, & Muellerleile, 2001). Azjen (2002) also found moderating effects of PBC on intentions, where intentions were strong when perceived behavioral control was also strong. Taking into consideration Azjen's (1985; 1988; 1991)

TPB path model where there is a direct path from PBC to behaviors and an indirect path to behaviors via intentions, suggesting that PBC may be influencing behaviors directly or indirectly via intentions as well. On the other hand, there was evidence that supports intentions as a strong predictor of health behaviors. For example, in examining smoking behaviors such as quitting, relapsing, and predicting future smoking behaviors, researchers found intentions to be a strong positive predictor of these outcomes ((McMillan & Conner, 2003; Smith, Bean, Mitchell, Speizer, & Fries, 2007; Stanton, Barnett, & Silva, 2005). A meta-analysis by Webb and Sheeran (2006) found that self-reported intentions accounted for approximately one-third of the variance in behavior. Similarly, Godin and Kik (1996) and Armitage and Conner (2001) found that correlations between self-reported intentions and health-related behaviors ranged from $r = .35$ to $.56$, $p < .05$. These various findings provide evidence that PBC and intentions influence behaviors both independent of each and simultaneously and varied depending on behavior (e.g., health behavior: smoking vs. other behaviors: attending class). Therefore, the hypothesis as to whether these variables would mediate between moral emotions and health behaviors would be exploratory in nature.

While there was evidence to support both PBC and intentions as predictors of health behaviors, evidence linking how guilt- and shame-proneness was limited thus the hypotheses would largely be conceptual in nature. Therefore, it was an aim of this dissertation to explore whether perceived behavioral control (PBC) or intentions would mediate between the relation between moral emotions and health behaviors (Hypothesis 10). This hypothesis was based on research findings that provided evidence that both variables were the strongest predictors in health behaviors compared to the other TPB

variables (i.e., norms and attitudes). It was expected, conceptually, since guilt-proneness was associated with being more adaptive and shame-proneness led to poorer adjustment (Tangney, 2003) that:

1. The effect of guilt-proneness on positive health behaviors (i.e., prosocial behaviors) would be positively mediated by PBC or intentions, whereas the effect of shame-proneness would be negatively mediated by PBC or intentions.
2. The effect of guilt-proneness on negative health behaviors (i.e., smoking) would be negatively mediated by PBC or intentions, whereas the effect of shame-proneness would be positively mediated by PBC or intentions.

Proposed Integrated Theory of Planned Behavior Model

The theories of reasoned action and planned behavior were developed to account for health behaviors. The evidence yielded from studies testing these theories show that health behaviors undergo moralization. Moralization requires an integration of moral variables, norms, attitudes, perceived control, and intentions (i.e., variables in the theory of planned behavior model) in order to encourage change in how health behaviors are perceived on both an individual and social level. The main reason for focusing on moral emotions such as guilt- and shame-proneness is based on past research that has examined these emotions with the health behaviors in question: smoking and prosocial behaviors. In particular, guilt-proneness in particular has been found to act as a catalyst propelling the individual to initiate positive health behaviors such as helping others (Lindsay-Hartz, 1984; Tangney, 1989; Wicker, Payne, & Morgan, 1983) and help towards fighting the desire to engage in negative behaviors such as aggression (see Tangney & Dearing, 2002, Tangney, 1994; Chapple, Zieband, & McPherson, 2004). Whereas, shame-proneness has

been linked to individuals engaging in more negative health behaviors such as smoking as well as more outward acts of aggression towards others (Tangney, 1990; Tangney, Wagner, Fletcher, & Gramzow, 1992). To date, there is no research that exists that has examined the relations between moral variables, planned behavior variables, and actual health behaviors under one proposed model. Therefore, an integrated model is needed to spur research in this area. *Figures 1a and 1b* depicts the proposed model for prosocial behaviors and expected directions of relations for guilt- and shame-proneness, respectively. *Figures 2a and 2c* illustrates proposed models for smoking behavior and positive outcome expectancies (i.e., desirability and likelihood of positive reinforcement from smoking) for guilt- and shame-proneness, respectively. *Figures 2b and 2d* illustrates proposed models for negative outcome expectancies (i.e., perceptions of negative consequences) for guilt- and shame-proneness, respectively.

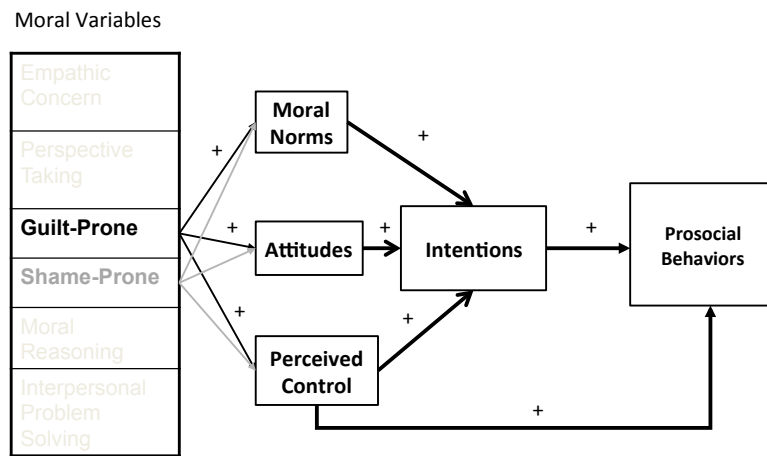


Figure 1a. Proposed Integrated Theory of Planned Behavior Model and Expected Directions of Relations for Guilt-Proneness.

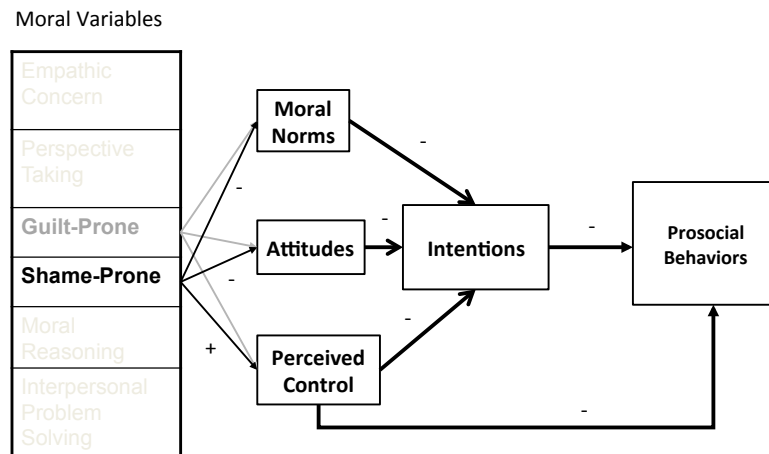


Figure 1b. Proposed Integrated Theory of Planned Behavior Model and Expected Directions of Relations for Shame-Proneness.

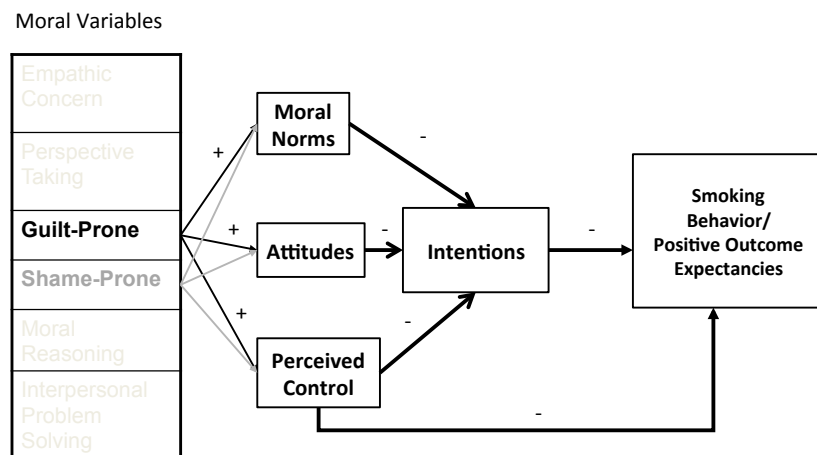


Figure 2a: Proposed Integrated Theory of Planned Behavior Model and Expected Directions of Relations for Guilt-Proneness for Smoking Behavior and Positive Outcome Expectancies (i.e. Likelihood and Desirability of Positive Reinforcement from Smoking).

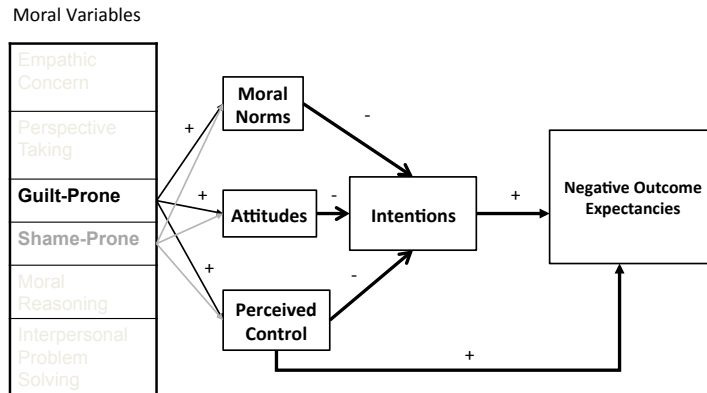


Figure 2b: Proposed Integrated Theory of Planned Behavior Model and Expected Directions of Relations for Guilt-Proneness for Negative Outcome Expectancy (i.e., Perceptions of Negative Consequences from Smoking).

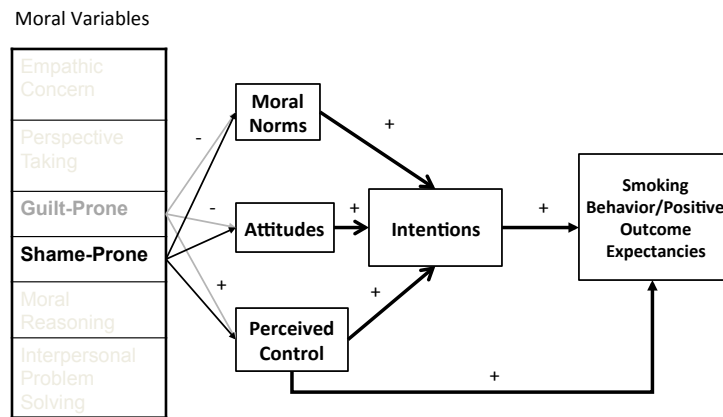


Figure 2c: Proposed Integrated Theory of Planned Behavior Model and Expected Directions of Relations for Shame-Proneness for Smoking Behavior and Positive Outcome Expectancies (i.e. Likelihood and Desirability of Positive Reinforcement from Smoking).

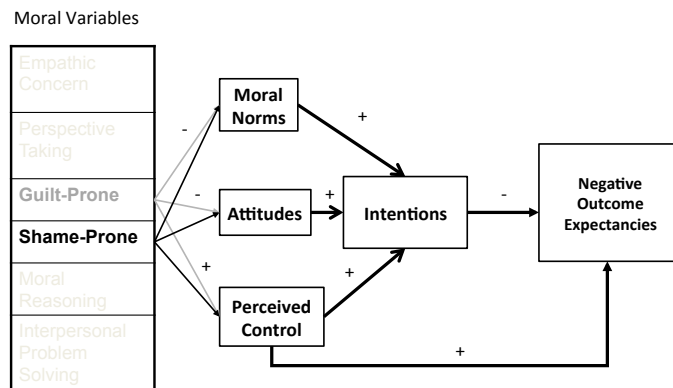


Figure 2d: Proposed Integrated Theory of Planned Behavior Model and Expected Directions of Relations for Shame-Prone for Negative Outcome Expectancies (i.e. Perceptions of Negative Consequences from Smoking).

The proposed model posits that guilt and shame may influence an individual's attitudes, norms, perceived control, and intentions that ultimately may influence their decision towards engaging in or avoiding specific health behaviors (i.e., smoking and prosocial behaviors).

First, in order to examine the links between variables established in the literature between guilt, shame associated with smoking, and prosocial behaviors, the following hypotheses were tested:

- 1) Higher scores on guilt-proneness would be associated with a higher likelihood of engaging in prosocial behaviors, lower likelihood of engaging in smoking, higher likelihood of expecting negative outcomes from smoking, and lower likelihood of expecting positive outcomes from smoking. This hypothesis was based on past research findings where guilt-proneness was related to empathy that fostered

cognitive abilities such as perspective taking, which was positively associated with prosocial behaviors and negatively with antisocial behaviors (Batson, 1990; Batson & Coke, 1981; Batson et al., 1988).

- 2) Higher scores on shame-proneness would be associated with a lower likelihood of engaging in prosocial behaviors, higher likelihood of engaging in smoking, lower likelihood of expecting negative outcomes from smoking, and higher likelihood of expecting positive outcomes from smoking. This hypothesis was based on past research findings that shame-proneness elicited blame, withdrawal, and other aggressive behaviors (Andrews, Brewin, Rose, & Kirk, 2000; Bennett, Sullivan, & Lewis, 2005; Harper & Arias, 2004; Paulhus, Robins, Trzeniewski, & Tracy, 2004; Tangney & Dearing, 2002).

The second empirically tested relationship between the components of the Theory of Planned Behavior (see Ajzen, 1985; 1988; 1991; Fishbein & Ajzen, 1975; 1977; 1980) established in the literature between smoking and prosocial behaviors resulted in the following hypotheses:

- 3) Norms, attitudes, perceived behavioral control, and intentions would each be positively correlated with smoking and prosocial behaviors, respectively.
- 4) Higher scores on perceived behavioral control would be associated with a higher likelihood to engage in prosocial behaviors and smoking behavior. This hypothesis was based on past research findings that found perceived behavioral control was a single variable that directly influenced

engaging in a behavior (Ajzen, 1985; 1988; 1991; Fishbein & Ajzen, 1975; 1977; 1980).

5) Higher scores on intentions would be associated with a higher likelihood of engaging in prosocial behaviors and smoking behavior. This hypothesis was based on previous research showing that those who had more intentions to engage in a behavior were more likely to actually engage in the behavior (Ajzen, 1985; 1988; 1991; Fishbein & Ajzen, 1975; 1977; 1980; Gerrard, Gibbons, & Bushman, 1996; Fishbein, 1980; Albarracin et al., 2001).

Third, in order to examine in more detail how the antecedent moral variables of guilt- and shame- proneness may influence the components of the TPB (i.e., norms, attitudes, perceived control, and intentions) (Ajzen, 1985; 1988; 1991), it must be noted that these posited relations were conceptual in nature. The posited relations between these variables are presented as follows: a) guilt- and shame-proneness and moral norms, b) guilt- and shame-proneness and attitudes, c) guilt- and shame-proneness and perceived control, and d) guilt- and shame-proneness and intentions.

Starting with guilt- and shame-proneness and moral norms, such norms can reflect values with how one ought to act towards others and feelings of personal responsibility to engage in behaviors that benefit others from a moral standpoint (e.g., is my behavior hurting or helping someone?). Thus, the following hypothesis was examined:

6) Higher scores on guilt-proneness would be associated with a higher likelihood to agree with moral norms towards prosocial behaviors and smoking behaviors. However, higher scores on shame-proneness would be

associated with lower likelihood to agree with moral norms towards prosocial and smoking behaviors.

Next, in assessing the relation between guilt- and shame-proneness and attitudes, the following hypothesis was tested:

7) Higher scores on guilt-proneness would be associated with more positive attitudes towards prosocial behaviors and less positive attitudes towards smoking behaviors. However, higher scores on shame-proneness would be associated with less positive attitudes towards prosocial behaviors and more positive attitudes towards smoking behaviors.

Then, in examining the relation between guilt- and shame-proneness and perceived behavior control, it was posited that:

8) Higher scores on guilt-proneness would be associated with more perceived behavioral control towards engaging in prosocial behaviors and avoiding smoking. However, higher scores on shame-proneness would be associated with more perceived behavioral control towards avoiding prosocial behaviors and engaging in smoking behavior.

Next, it was hypothesized that the relation between guilt- and shame-proneness and intentions would result in the following:

9) Higher scores on guilt-proneness would be associated with more intentions to engage in prosocial behaviors and less intentions to engage in smoking. However, higher scores on shame-proneness would be associated with fewer intentions to engage in prosocial behaviors and more intentions to engage in smoking.

Lastly, it is hypothesized that:

10) Perceived behavioral control would mediate the relation between moral emotions and health behaviors. However, intentions would mediate the relation between moral emotions and health behaviors, also. This was based on previous research findings that intentions were found to be a strong positive predictor for future nonsmoking behaviors (McMillan & Conner, 2003; Smith, Bean, Mitchell, Speizer, & Fries, 2007; Stanton, Barnett, & Silva, 2005). Furthermore, perceived behavioral control has also been found to influence a person's behavior independent of norms, attitudes, and intentions (Ajzen, 1985; 1988; 1991; Fishbein & Ajzen, 1975; 1977; 1980; Murgraff et al., 2001).

In investigating the relation between the health behaviors themselves, it was posited that:

11) Smoking and prosocial behaviors would be negatively correlated in order to show that they are different types of behaviors (e.g., positive versus negative health behaviors). Prior research has shown that altruistic prosocial behaviors are negatively related to cigarette smoking (Carlo, Wilkinson, & Sandman, 2010). Additional studies have also shown similar negative relations between prosocial behaviors and substance use (Duncan, Duncan, Stryker, & Chaumeton, 2002; Prinstein, Boergers, & Spirito, 2001). The rationale for studying prosocial behaviors is because engaging in positive health behaviors versus negative health behaviors may result in findings that different mechanisms are influencing different behaviors (e.g., guilt proneness may be more influential in engaging in

positive health behaviors while shame proneness may be more influential in engaging in negative health behaviors).

Lastly, to further examine the utility of the proposed model, gender differences were explored among the paths in the proposed integrated model.

Method

Participants

The sample consisted of primarily undergraduate participants from introductory to psychology course and upper level psychology courses from a large, Midwest university. A power analysis was conducted using MPLUS statistical software (Muthén & Muthén, 2004) by using the Monte Carlo study (Muthén & Muthén, 2002) determining that an $N = 300$ would be sufficient. The sample size was $N = 330$ of which $n = 120$ were males and $n = 210$ were females. Participants ranged from 19 to 51 ($M = 20.7$, $SD = 3.2$) with a majority being 19 years old (44.2%). Eighty-five percent reported being White, 3.3% Latino, 2.1% African American, 3% Black, and 3% Asian. Forty percent reported being freshmen, 11% sophomores, 24% juniors, 24% were seniors. Forty-five percent reported living in the dorms, 23% in an apartment or house, 10% in a Greek house, 14% in an apartment with roommates, and 6% at home with their parents.

Procedure

Participants were recruited to participate by offering extra credit for research as part of satisfying course requirements. They were debriefed by giving proper information regarding the study as well as contact information if they had questions after participation. Once debriefed, they were given one consent form to sign and one to keep for their records. Then, they were administered a paper-pencil questionnaire in a designed

room in Burnett Hall. The questionnaire took approximately 35-45 minutes to complete. Once the questionnaires were completed, data were locked in a secure filing cabinet in Burnett Hall (Room 54) where access was limited to two undergraduate assistants, my advisor, and me. The questionnaires remained boxed in this secure filing cabinet until the information contained in them was ready to be entered into a database for analyses. The database was accessible only through a desktop housed in the designated room in Burnett Hall (Room 54).

Materials

Guilt- and Shame-Proneness. The Test of Self-Conscious Affect (TOSCA-A), adult version, was used to assess individual differences in proneness to guilt, proneness to shame, detachment-unconcern, externalization of blame, pride in self (alpha pride), and pride in behavior (beta pride) (Tangney, Wagner, Galvas, & Gramzow, 1991b) (please see Appendix A). For the purpose of this dissertation, only shame-proneness and guilt-proneness were used for the analyses. The measure is comprised of 16 brief scenarios (11 negative, 5 positive) and each scenario is followed by a number of responses (negative scenarios had four responses, positive scenarios had five responses). Both guilt- and shame-proneness had sixteen items each. These responses corresponded to shame proneness, guilt proneness, detachment-unconcern, externalization of blame, pride in self and pride in behavior. An example of a negative scenario read, “*You make plans to meet a friend for lunch. At 5 o’clock, you realize you stood your friend up.*” The response options are *a) You would think the company did not like the coworker (shame proneness), b) You would think “Life is not fair” (detachment), c) You would keep quiet and avoid the coworker (guilt proneness), and d) You would feel unhappy and eager to correct the*

situation (externalization). Conversely, a positive example reads, “*You are out with friends one evening, and you are feeling especially witty and attractive. Your best friend’s spouse seems to particularly enjoy your company.*” The responses are not forced-choice and participants ranked ordered how likely it would be for them to react in each of the given scenarios with 1 = *most likely*, 2 = *next likely*, and so on. Two composite scores were created for each guilt-proneness and shame-proneness by reverse scoring the appropriate responses, summing, and then averaging these responses. The internal reliability estimate for shame-proneness subscale was $\alpha = .57$ and guilt-proneness was $\alpha = .65$ (see Table 1).

Theory of Planned Behavior. The Theory of Planned Behavior (TPB) components: norms, attitudes, perceived behavioral control, and intentions were taken directly from Ajzen’s (2006) while referencing a study by Smith & McSweeney (2007) to modify questions pertaining to the health behaviors (i.e., smoking and prosocial behaviors) accordingly.

Attitudes for smoking and prosocial behaviors were measured based on a component of the TPB using one question that contained eight different descriptors which were rated on a 7-point Likert type scale. An example of smoking attitudes was, “*My [smoking] in the next 4 weeks would be: unpleasant-pleasant, useful-useless, satisfying-unsatisfying, favorable-unfavorable, positive-negative, considerate-inconsiderate, pointless-worthwhile, and good-bad.*” The internal reliability estimate for attitudes towards smoking was $\alpha = .93$. Similarly, for prosocial attitudes, the question was, “*My being prosocial in the next 4 weeks would be...*” with the same descriptors. The internal reliability estimate for attitudes towards prosocial behaviors was $\alpha = .94$ (see Table 1).

Higher scores on attitudes indicate more positive attitudes towards the behavior; lower scores on attitudes indicate less positive or more negative attitudes towards the behavior.

Moral norms for smoking and prosocial behaviors were measured based on a component of the TPB using four items rated on a 7-point Likert type scale with endpoints being 1 = *very unlikely* and 7 = *very likely*. For example, a question for smoking moral norms read, “*I would feel guilty if I did smoke.*” The internal reliability estimate for smoking moral norms was $\alpha = .74$. An example of a question for prosocial moral norms read, “*I believe I have a moral obligation to engage in prosocial behaviors.*” The internal reliability estimate for prosocial moral norms was $\alpha = .74$ (see Table 1). Higher scores on moral norms indicate agreeing more moral norms that prosocial behaviors are “good” and smoking behavior is “bad”.

Perceived behavioral control (PBC) for smoking and prosocial behaviors were also measured based on a component of the TPB using five items rated on a 7-point Likert type scale with endpoints being 1 = *definitely not* and 7 = *definitely*. For example, a question for perceived control of smoking behavior was, “*If I wanted to, I could smoke in the next 4 weeks.*” The internal reliability estimate for perceived behavioral control of smoking behaviors after dropping one item that had a low loading improved from $\alpha = .59$ to $\alpha = .67$. Similarly, a question for perceived control of prosocial behaviors was, “*It is mostly up to me whether I am prosocial in the next 4 weeks.*” The internal reliability estimate for perceived behavioral control of prosocial behaviors after dropping one item that had a low loading also improved from $\alpha = .29$ to $\alpha = .82$ (see Table 1). Higher scores on perceived behavioral control indicate more control to engage in prosocial behaviors,

whereas higher scores on perceived behavioral control in smoking behavior indicate more control towards choosing to smoke.

Lastly, intentions were assessed using a component from the theory of planned behavior using five items also rated on a 7-point Likert type scale. For example, a question for smoking intentions was, "*I will smoke in the next four weeks*" with endpoints of 1 = *not at all* and 7 = *frequently*. The internal reliability estimate for intentions towards engaging in smoking was $\alpha = .89$. An example for prosocial intentions (that was reversed scored) was, "*I do not intend to be prosocial in the next 4 weeks.*" With endpoints of 1 = *strongly disagree* and 7 = *strong agree*. The internal reliability estimate for prosocial intentions was $\alpha = .85$ (see Table 1). Higher scores on intentions indicate having more intentions to engage in prosocial behaviors and smoking; lower scores indicate fewer intentions to engage in prosocial behaviors and smoking.

Prosocial Behaviors. These were assessed using the twenty-three-item Prosocial Tendencies Measure (Carlo & Randall, 2002) which measures six types of prosocial behaviors (altruism, dire, emotional, public, anonymous, and compliant. Altruistic behaviors are those that refer to actions that benefit others, with a cost to one's self (e.g. *There should be more recognition of people who give their time and energy for charity work-* items on this scale were reversed scored). Dire behaviors refer to actions that benefit others in emergency situations (e.g. *It is easy for me to help others when they are in a dire situation.*). Emotional behaviors result from a response to emotionally charged situations (e.g. *It is most fulfilling to me when I can comfort someone who is very distressed.*). Public behaviors are ones that are done in front of others (e.g. *When other people are around, it is easier for me to help others in need.*). Anonymous acts are ones

that are done without other's knowledge (e.g. *Most of the time, I help others when they do not know who helped them.*). Compliant behaviors are done when someone requests it (e.g. *I never hesitate to help others when they ask for it.*). Higher scores on each behavior indicate a higher tendency to perform that behavior, with the exception of altruistic behaviors where lower scores indicate a higher tendency to perform this behavior. The internal reliability estimates for the subscales are the following: altruistic ($\alpha = .55$), dire ($\alpha = .79$), emotional ($\alpha = .84$), public ($\alpha = .84$), anonymous ($\alpha = .73$), and compliant ($\alpha = .79$) (refer to Table 1). Composite scores were created by summing and average the questions pertaining to each subscale. The altruistic subscale was reversed scored before creating a composite score.

Smoking Behavior. In examining smoking behaviors, a total of four questions open-ended questions were asked. The first index questioned how *often* the individual smoked in 4 weeks. The second index questioned how *many times* the individual smoked in 4 weeks. The third question asked the individual how *many days* out of 4 weeks they smoked. The last question asked individuals how *many cigarettes* they smoked in the past 4 weeks. In determining which of these questions reflected an unhealthy person or a person most at risk for health consequences from smoking, the question asking how *many cigarettes* were smoked in the past 4 weeks was most relevant. Thus, this single question out of the four was used as the primary index to analyze smoking behaviors. This question however was also positively skewed. Therefore, it was transformed to correct positive skewness by first correcting for 0 values, a constant was added to all data to shift distribution to the right, then the natural log of the original variable was taken (Tabachnick & Fidell, 2007; Howell, 2007).

Smoking Outcome Expectancies.

Negative Outcome Expectancy.

Perceptions of Health Consequences from Smoking. This measure assessed perceptions of health consequences of smoking (White, Webster, & Wakefield, 2008), that is, whether they agreed or disagreed that smoking caused a number of different illnesses. This measure is considered a measure of negative outcome expected from smoking because of the health consequences. This scale was measured using five items on a 5-point Likert type scale with 0 = *disagree* and 1 = *agree* (i.e., Smoking causes mouth and throat cancer). The internal reliability estimate was $\alpha = .79$ (See Table 1). A composite score was created by summing and average all five items together.

Positive Outcome Expectancies.

Smoker's Consequence Questionnaire. A second measure assessed by Brandon and Baker (1991) contained fifty statements describing 1) the likelihood of the effects of smoking and 2) the desirability of the effects of smoking. Within these two categories, participants assessed four subscales based on likelihood of effects and desirability of effects from smoking. In setting a criteria for those at higher health risks, it was determined that those who scored higher on the *positive reinforcement* subscale most reflected an unhealthy person who actually desired and expected a higher likelihood of the harmful effects from smoking. While these effects are negative ones, an unhealthy individual will feel as though they are gaining positive effects or reinforcement from smoking. This measure is considered a measure positive outcomes expected from smoking. An example of the likelihood of positive reinforcement obtained from smoking with fifteen items, rated on a 9-point Likert type scale with end points being 0 = *very*

unlikely and 9 = *very likely*, “*I enjoy the taste while smoking.*” The internal reliability estimate was $\alpha = .97$. An example of the desirability of positive reinforcement received from smoking with fifteen items, rated on a scale ranging from -5 = *extremely undesirable* to 5 = *extremely desirable*, “*Cigarettes taste good.*” The internal reliability estimate was $\alpha = .98$ (see Table 1).

Results

Data Analytic Procedure

The data analytic procedure consisted of the following steps:

1. First step in analyzing the data was to clean the data and ensure that the assumptions of normality and linearity were not violated, examine descriptive statistics, investigate possible outliers, and visually examine the distribution for skewness and kurtosis. (Please refer to Appendices B analyses using the sample from men and women separately.)
2. Second, using Cronbach’s alpha ($\alpha = .70$ or higher), an internal consistency estimate of reliability was measured.
3. Third, zero-order correlations were examined to explore the relations among the variables in the proposed integrated model (see Figure 1-2) for three sets of data: a) the entire sample, b) men, and c) women (for preliminary and zero-order correlational analysis results for men and women, please refer to Appendix B).
4. Fourth, main results begin with findings from the proposed integrated path model (see Figures 1a – 1b) for each of the six prosocial behaviors and each of the four smoking indices (see Figures 2a – 2d) using

MPLUS statistical software (Muthén & Muthén, 2004) and examined for model fit. Modification indices were also examined to determine where improvement of model fit would be appropriate to establish an acceptable baseline or target model for further multi-group analyses.

5. Fifth, the modified integrated path models results including model fit and modified paths for each health behavior are presented.
6. Sixth, results from multi-group analyses including model fit, partial measurement invariance, and any significance testing using Fisher's z-test (1915) for each health behavior are presented.
7. Finally, mediational path analyses addressing Hypothesis 10 and regression analyses addressing Hypotheses 1, 2, 4, and 5 are presented.

Preliminary Results

Descriptive Statistics.

Examination of outliers, skewness, and kurtosis yielded no evidence that the assumptions of normality were violated for guilt- and shame-proneness, prosocial behaviors, components of the Theory of Planned Behavior, outcome expectancies for smoking, and perceptions of smoking consequences. However, the question regarding the number of cigarettes smoked depicted both positive skewness and kurtosis that was corrected by performing a natural log-likelihood transformation. The internal consistency results were for the most part adequate except for shame-proneness and altruistic prosocial behaviors that fall below the $\alpha = .70$ (see Table 1).

Prosocial behaviors and TPB Components. Descriptive statistics for the study variables are presented in Table 1 for the variables in the study. Participants scored

higher on guilt-proneness than shame-proneness. Participants scored just above the mean on all prosocial behaviors except for public prosocial behaviors. They also generally had more positive attitudes, agreed with moral norms towards prosocial behaviors, perceived more behavioral control to engage in such behaviors and had more intentions towards engaging in prosocial behaviors.

Smoking Behavior, Outcome Expectancies, and TPB Components. Participants smoked few cigarettes in 30 days, perceived high levels of negative consequences from smoking, and did not desire or expect positive outcomes from smoking. Participants scored just above the mean in agreeing to moral norms towards avoiding smoking and perceived more behavioral control towards engaging to smoking. They had less positive attitudes towards smoking and had fewer intentions towards engaging in smoking.

Table 1

Means (M), Standard Deviations (SD), Internal Consistencies (α), and Number of Items per Measure for Moral Variables, Prosocial Behaviors, Smoking Behavior and Outcome Expectancies, and TPB Components per Health Behavior for the Total Sample

	<i>M</i>	<i>SD</i>	α	Number of items
Guilt-proneness	3.18	.45	.65	16
Shame-proneness	2.61	.53	.57	16
Prosocial Behaviors				
Public	2.11	.80	.84	5
Anonymous	3.01	.96	.73	5
Dire	3.79	.84	.79	3
Emotional	3.82	.85	.84	4
Compliant	4.00	.83	.79	2
Altruistic	3.59	.76	.55	4
Prosocial Attitudes	6.36	1.04	.94	8
Prosocial Norms	5.49	1.21	.74	4
Prosocial PBC	6.37	.87	.67	4
Prosocial Intentions	5.93	1.21	.85	5
Smoking Behavior and Outcomes				
Perceptions of Negative Consequences	3.54	.65	.79	5
Number of Cigarettes Smoked	1.90	6.09	-	1
Likelihood of Positive Reinforcement	1.12	2.07	.97	15
Desirability of Reinforcement	-3.59	2.52	.98	15
Smoking Attitudes	1.64	1.23	.93	8
Smoking Norms	5.29	1.63	.74	4
Smoking PBC	4.74	1.68	.82	4
Smoking Intentions	2.11	1.73	.89	5

N = 330. Guilt-proneness, shame-proneness, public, anonymous, dire, emotional, compliant, and altruistic behaviors were scored on a 1-5 scale. Attitudes, moral norms, PBC, and intentions were scored on a 1-7 scale. Smoking behavior is indicated by "How many" which is the number of cigarettes smoked in 30 days; internal consistency reliability for this cannot be calculated. Negative outcome expectancy is measured by perceptions, rated on a 0-4 scale. Positive outcome expectancies: "Likelihood" measures the likelihood of positive reinforcement expected from smoking, rated on a 0-9 scale. "Desirability" measures the desirability of positive reinforcement expected from smoking, rated on a -5 to 5 scale.

Zero-Order Correlational Analyses for Moral Variables, TPB Components, and Health Behaviors

Pearson product-moment correlation coefficients were used to address the relations stated in hypothesis #3, #6-9, and #11.

Hypothesis 3: Each component, that is, norms, attitudes, PBC, and intentions would be positively correlated to each prosocial behavior and smoking behavior. (See Tables 2 and 3 for prosocial behaviors and smoking behavior, respectively).

Prosocial behaviors. The correlations among the TPB components and prosocial behaviors were mostly positive and significant. Attitudes were positively correlated with dire, emotional, and compliant prosocial behaviors. Moral norms were positively related to public, anonymous, dire, emotional and compliant prosocial behaviors. Lastly, PBC and intentions were positively correlated with anonymous, dire, emotional, and compliant prosocial behaviors. This suggests that individuals, who had more positive attitudes, agreed with moral norms, had more intentions, and perceived more behavioral control towards engaging in prosocial behaviors, were generally more likely to report higher levels of PSB.

Smoking behavior. The correlations among the TPB components, attitudes, intentions, and PBC and smoking behavior were positive and significant. The correlation between moral norms and smoking behavior was negative and significant.

Table 2

Zero-Order Correlations for Moral Variables, TPB Components, and Prosocial Behaviors

	1	2	3	4	5	6	7	8	9	10	11	12
1. Guilt-proneness		.46**	-.03	.08	.19**	.17**	.24**	.14**	.14*	.11*	.09	.02
2. Shame-proneness			-.04	.12*	.04	.14*	.09	.08	.08	.04	-.004	-.10
3. Public				-.03	.13*	.07	.03	-.51**	.03	.11*	.02	.03
4. Anonymous					.22*	.14*	.16**	.03	.10	.27**	.14*	.12*
5. Dire						.50**	.49**	-.05	.25**	.29**	.22**	.23*
6. Emotional							.39**	.01	.29**	.24**	.21**	.20*
7. Compliant								.02	.23**	.24**	.24**	.23**
8. Altruistic									-.08	-.04	.04	-.003
9. Attitudes										.43**	.43**	.39**
10. Norms											.56**	.58**
11. PBC												.61**
12. Intentions												

N = 330. ** $p < .001$. * $p < .05$. Attitudes, Moral Norms, Perceived Behavioral Control (PBC), and Intentions are taken from TPB and items were modified accordingly for prosocial behaviors.

Table 3

Zero-Order Correlations for Moral Variables, TPB Components, Smoking Behavior and Outcome Expectancies Using All Data

	1	2	3	4	5	6	7	8	9	10
1. Guilt-proneness		.46**	.12	.01	-.16**	.13*	-.23**	.26**	-.04	-.12*
2. Shame-proneness			.08	.05	-.06	-.03	-.12*	.11*	-.01	.02
3. Perceptions				.03	-.14*	-.16*	-.21**	.25**	-.10	-.03
4. How many					.67**	.58**	.63**	-.53**	.29**	.61**
5. Likelihood						.84**	.68**	-.61**	.35**	.58**
6. Desirability							.59**	-.55**	.32**	.50**
7. Attitudes								-.58**	.33**	.59**
8. Norms									-.45**	-.64**
9. PBC										.38**
10. Intentions										

N = 330. ** $p < .001$. * $p < .05$. Attitudes, Moral Norms, Perceived Behavioral Control (PBC), and Intentions are taken from TPB and items were modified accordingly for smoking behaviors. Smoking behavior is indicated by “How many” which is the number of cigarettes smoked in 30 days. Negative outcome expectancy is measured by perceptions. Positive outcome expectancies: “Likelihood” measures the likelihood of positive reinforcement expected from smoking. “Desirability” measures the desirability of positive reinforcement expected from smoking.

Hypothesis 6: Higher scores on guilt-proneness would be associated with a higher likelihood to agree with moral norms towards prosocial behaviors and smoking behaviors. However, higher scores on shame-proneness would be associated with lower likelihood to agree with moral norms towards prosocial and smoking behaviors. (See Tables 2 and 3 for prosocial behaviors and smoking behavior, respectively).

Prosocial behaviors. The relation between guilt-proneness and moral norms towards prosocial behaviors were positive and significant. However, the relation between shame-proneness and moral norms towards prosocial behaviors were not statistically significant.

Smoking behavior. The relation between guilt-proneness and moral norms towards smoking behavior was positive and significant. The relation between shame-proneness and moral norms towards smoking behavior was also positive and statistically significant.

Hypothesis 7: Higher scores on guilt-proneness would be associated with more positive attitudes towards prosocial behaviors and less positive attitudes towards smoking behaviors. However, higher scores on shame-proneness would be associated with less positive attitudes towards prosocial behaviors and more positive attitudes towards smoking behaviors. (See Tables 2 and 3 for prosocial behaviors and smoking behavior, respectively).

Prosocial behaviors. The relation between guilt-proneness and attitudes towards prosocial behaviors was positive and significant. However, the relation between shame-proneness and attitudes towards prosocial behaviors were not statistically significant.

Smoking behavior. The relation between guilt-proneness and attitudes toward smoking behavior was negative and significant. Similarly, the relation between shame-proneness and attitudes towards smoking behavior was negative and significant.

Hypothesis 8: Higher scores on guilt-proneness would be associated with more perceived behavioral control towards engaging in prosocial behaviors and refraining from smoking. However, higher scores on shame-proneness would be associated with more perceived behavioral control towards refraining from prosocial behaviors and engaging in smoking behavior. (See Tables 2 and 3 for prosocial behaviors and smoking behavior, respectively).

Prosocial behavior. The relation between guilt-proneness and PBC towards prosocial behaviors was not statistically significant. Similarly, the relation between shame-proneness and PBC towards prosocial behaviors was not statistically significant.

Smoking behavior. The relation between guilt-proneness and PBC towards smoking behavior was not statistically significant. Similarly, the relation between shame-proneness and PBC towards smoking behavior was not statistically significant.

Hypothesis 9: Higher scores on guilt-proneness would be associated with more intentions to engage in prosocial behaviors and less intentions to engage in smoking. However, higher scores on shame-proneness would be associated with fewer intentions to engage in prosocial behaviors and more intentions to engage in smoking. (See Tables 2 and 3 for prosocial behaviors and smoking behavior, respectively).

Prosocial behaviors. The relation between guilt-proneness and intentions towards engaging in prosocial behaviors was not statistically significant. Similarly, the relation

between shame-proneness and intentions towards engaging in prosocial behaviors were not statistically significant.

Smoking behavior. The relation between guilt-proneness and attitudes towards smoking behavior was negative and significant. However, the relation between shame-proneness and intentions towards smoking were not statistically significant.

Hypothesis 11: The relations between prosocial behaviors, smoking behavior, and outcome expectancies would be negatively related to one another to demonstrate that they are different types of behaviors (e.g., positive versus negative health behaviors).

The relations presented in Table 4 between the six prosocial behaviors and smoking behavior show that health perceptions were positive and significantly correlated with public, anonymous, dire, emotional, and compliant prosocial behaviors. In contrast, the relation between the six prosocial behaviors with smoking behavior and outcome expectancies were generally significant and mostly negative. The number of cigarettes smoked was negative and significantly correlated with dire and compliant prosocial behaviors. The likelihood of positive reinforcement gained from smoking was negatively and significantly correlated with anonymous, dire, emotional, and compliant prosocial behaviors. The desirability of positive reinforcement from smoking was negative and significantly correlated with anonymous, dire, and compliant prosocial behaviors. Additionally, these smoking outcomes were not significantly correlated with altruistic prosocial behaviors.

Zero-Order Correlations Conclusion.

In general, the correlational hypotheses were partially supported suggesting that the variables are, in some way, associated with each other. Also, the current findings show that the health behaviors being examined are negatively related. This was important to establish for further analyses.

Table 4

Zero-Order Correlations for Prosocial Behaviors, Smoking Behavior, and Outcome Expectancies for All Data

	Number of Cigarettes Smoked	Perceptions of Negative Consequences	Likelihood of Positive Reinforcement	Desirability of Positive Reinforcement
Public	-.002	.11*	-.05	-.03
Anonymous	-.10	.14*	-.16*	-.12*
Dire	-.19**	.18*	-.17*	-.12*
Emotional	-.11	.26*	-.14*	-.07
Compliant	-.17**	.12*	-.19*	-.15*
Altruistic	-.10	.01	.03	-.03

N = 330. ** $p < .001$. * $p < .05$. Smoking behavior is indicated by “How many” which is the number of cigarettes smoked in 30 days. Negative outcome expectancy is measured by perceptions. Positive outcome expectancies: “Likelihood” measures the likelihood of positive reinforcement expected from smoking. “Desirability” measures the desirability of positive reinforcement expected from smoking.

Proposed Integrated Theory of Planned Behavior Path Model Results

Path analysis was used to examine the relations between hypothesized observed variables in the proposed integrated model for each prosocial behavior and smoking behavior using MPLUS statistical software (Muthén & Muthén, 2004) and examined for model fit. Model fit indices reported were based on current practice and recommendations (Boomsma, 2000; McDonald & Ho, 2002) that include model chi-square, root mean square error of approximation (RMSEA, Steiger, 1990), Bentler comparative fit index (CFI; Bentler, 1990), and standardized root mean square residual (SRMR). Model chi-square or the global goodness-of-fit index was used to examine the presence or absence of items that did not fit well in the model; the higher the value, the worse the model describes the data. RMSEA measures the lack of fit in the model being tested. It is considered a “badness-of-fit” index in that the value of zero indicates the best fit and higher values indicate worse fit; desired values are .08 or smaller. Bentler’s comparative fit index or CFI measures the improvement of model fit between an original model and a modified model; values range from 0.00 to 1.00 with values approaching 1.00 being more desirable. The SRMR examines the average discrepancy between the correlations observed in the matrix and ones predicted by the model; the preferred cut off value is .08 or smaller (Kline, 2005).

Prosocial Behaviors. Model fit indices for the proposed integrated model across all six prosocial behaviors show that the hypothesized paths did not provide the best model for the sample data (see Table 5) therefore indicating inadequate model fit. Since model fit indices across six prosocial behaviors indicated poor fit, further analyses were conducted in order to find the best fitting target model for the sample data.

Smoking Behavior and Outcome Expectancies. Model fit indices for the proposed integrated model for the four smoking indices show that the hypothesized paths did not provide the best model for the sample data (see Table 5) therefore indicating inadequate model fit. The proposed path model fit results the four smoking indices also did not demonstrate adequate model fit, thus further analyses were conducted to find the best fitting target model for the sample data.

Modified Integrated Theory of Planned Behavior Path Model Results

Initial examination of the proposed integrated model for each prosocial and smoking behavior indicated poor model fit prompting further analyses to find the best fitting target model that best described the data. This was achieved by examining the modification indices for each health behavior. Modification indices provided suggestions for additional paths that would reduce the model chi-square value thus improving model fit. Considerations that were taken before adding paths was determined by whether or not it made theoretical sense and if so, was there research to support the relation between the two variables. Once an acceptable target model was established, further analysis based on these models included addressing relevant hypotheses and conducting multi-group analyses.

Prosocial Behaviors. The proposed integrated model for prosocial behaviors was altered for each behavior in order to find the best fitting overall target model. A common pattern emerged for all six behaviors that consisted of the following:

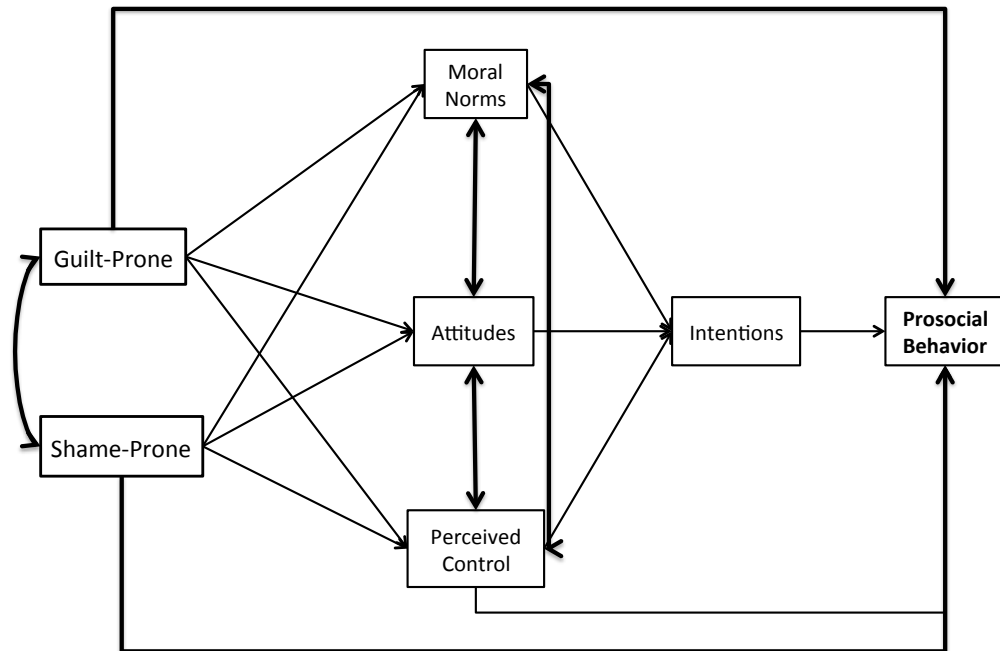


Figure 3. Modified Integrated Path Model for all Six Prosocial Behaviors.

1. Adding the same 3 correlational
 - a. Moral norms with attitudes
 - b. Moral norms with PBC
 - c. PBC with attitudes
2. Adding the same 2 direct paths
 - a. Behavior on guilt-proneness
 - b. Behavior on shame-proneness

Figure 3 depicts this pattern of modification indices by adding the correlational paths depicted by double-headed bold arrows in black between moral norms, attitudes, PBC and direct paths depicted by an arrow with a single head going from guilt and shame-proneness into the behavior. These paths were added because they made

theoretical sense, in that, these variables are components of the Theory of Planned Behavior that posits that these variables (i.e., attitudes, norms, PBC, and intentions) are associated with and influence one another (See page 17 for review on TPB). The correlational path values between these variables were all statistically significant and positive in direction across all prosocial behaviors (see Table 2). After reanalyzing the path model with the added correlational paths and direct paths, model fit indices indicated adequate fit (see Table 5).

Table 5

Summary of Model Fit Indices from Proposed and Modified Integrated Theory of Planned Behavior Models for Prosocial Behaviors

Fit Indices	Proposed Model Fit					
	Compliant	Public	Dire	Emotional	Anonymous	Altruistic
χ^2 value	200.95	457.19	202.48	204.67	459.38	208.06
Df	9	9	9	9	9	9
p-value	< .001	< .001	< .001	< .001	< .001	< .001
CFI	.35	.03	.02	.04	.03	.06
RMSEA	.25	.04	.26	.26	.39	.26
SRMR	.14	.22	.14	.14	.21	.14
Fit Indices	Modified Model Fit					
	Compliant	Public	Dire	Emotional	Anonymous	Altruistic
χ^2 value	4.81	2.83	6.01	4.85	2.48	4.14
df	4	4	4	4	4	4
p-value	.31	.59	.20	.30	.65	.39
CFI	.99	1.00	.99	.99	1.00	1.00
RMSEA	.02	.00	.04	.02	.00	.01
SRMR	.02	.02	.02	.04	.02	.02

Note. All prosocial behaviors had modified paths that included three correlational paths: moral norms with attitudes, moral norms with PBC, and PBC with attitudes with an addition of two direct paths: behavior on guilt-proneness and behavior on shame-proneness.

Smoking Behavior and Outcome Expectancies. The proposed integrated model for smoking indices was altered for each behavior as well in order to find the best fitting overall target model. Two patterns of modifications emerged:

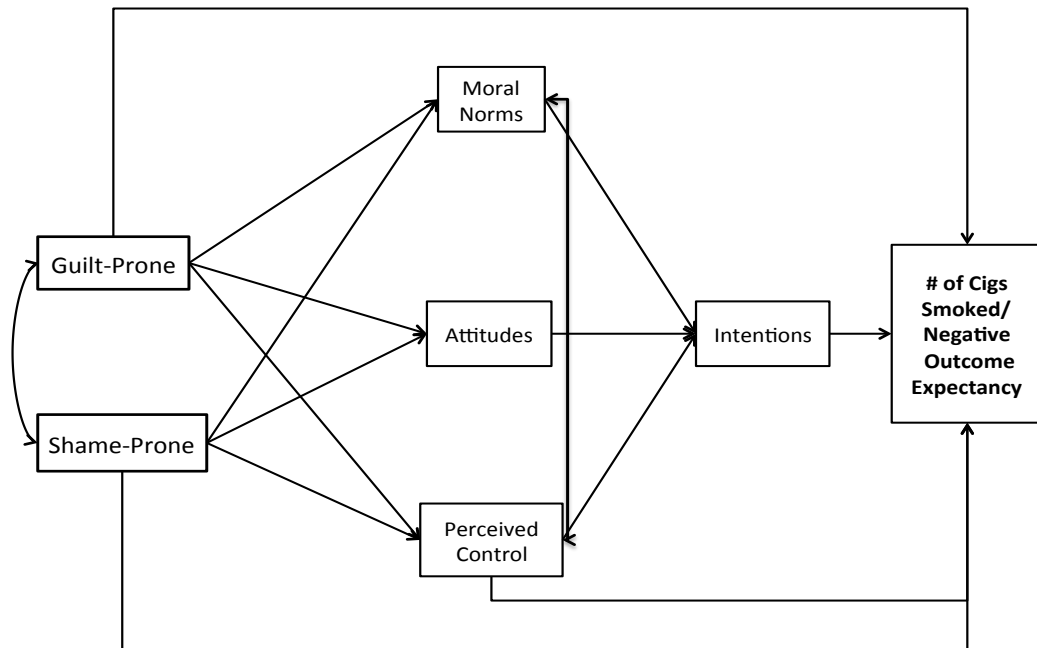


Figure 4a. Modified Integrated Path Model for Number of Cigarettes Smoked and Negative Outcome Expectancy (i.e. perceptions of negative consequences from smoking).

1. For perceptions of negative consequences and number of cigarettes smoked (see *Figure 4a.*). Adding 1 correlational path
 - a. PBC with moral norms
2. Adding 2 direct paths
 - a. Behavior on guilt-proneness
 - b. Behavior on shame-proneness

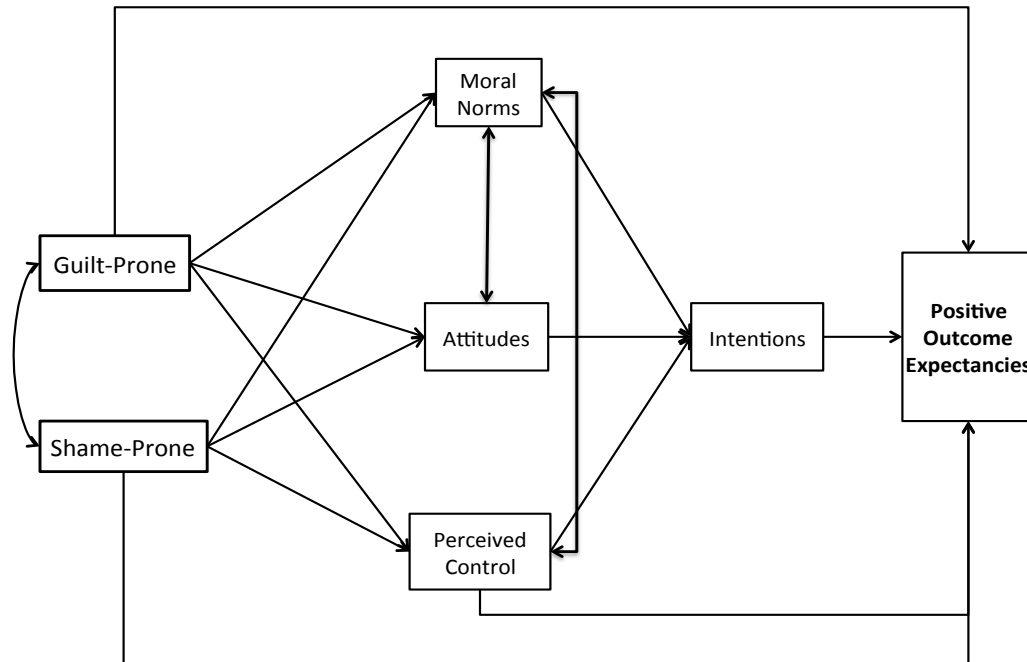


Figure 4b. Modified Integrated Path Model for Positive Outcome Expectancies (i.e., Likelihood and Desirability of Positive Reinforcement Gained from Smoking).

1. For likelihood and desirability of positive reinforcement from smoking (see Figure 4b.), adding 2 correlational paths
 - a. Attitude with moral norms
 - b. Moral Norms with PBC
2. Adding 2 direct paths
 - a. Behavior on guilt-proneness
 - b. Behavior on shame-proneness

The first set of modification indices, for example, in Figure 4a depicts the added correlation with double-headed arrows between moral norms and PBC. The correlational path value between moral norms and PBC was statistically significant and positive, $\beta = .42, p < .05$, for perceptions of negative health consequences and number of cigarettes

smoked. Similarly, the second set of modification indices depicted in Figure 4b depicts the added correlation paths with double-headed arrows between moral norms and attitudes and moral norms and PBC. The correlational path value between moral norms and attitudes and moral norms and PBC were statistically significant and positive, $\beta = .41, p < .05$, for desirability and likelihood of positive reinforcement gained from smoking. Also, direct paths depicted by an arrow with a single head going from guilt and shame-proneness into the health behavior. After reanalyzing these four path models, model fit indicated adequate fit for: perceptions of negative consequences, likelihood and desirability of positive reinforcement, but not for the number of cigarettes smoked (see Table 6). While only three of the four smoking indices approached or within the desired limits to establish acceptable model fit, further analyses were conducted examining all four indices.

Table 6

Summary of Model Fit Indices from Proposed Integrated Theory of Planned Behavior Models for Smoking Behavior and Outcome Expectancies

Fit Indices	Number of Cigarettes Smoked	Proposed Model Fit		
		Perception of Negative Consequences	Likelihood of Positive Reinforcement	Desirability of Positive Reinforcement
χ^2 value	198.42	105.01	187.84	150.69
Df	9	9	9	9
<i>p</i> -value	< .001	< .001	< .001	< .001
CFI	.65	.75	.55	.62
RMSEA	.25	.18	.25	.22
SRMR	.14	.12	.16	.14
Fit Indices	Number of Cigarettes Smoked	Modified Model Fit		
		Perception of Negative Consequences	Likelihood of Positive Reinforcement	Desirability of Positive Reinforcement
χ^2 value	118.31	7.09	1.38	15.02
df	6	6	5	5
<i>p</i> -value	< .001	.31	.02	.01
CFI	.79	.99	.98	.97
RMSEA	.24	.02	.07	.08
SRMR	.08	.02	.03	.03

Exploratory Multiple Group Path Analysis

Exploratory multiple-group path analyses using the modified integrated path model or the target model were conducted using MPLUS statistical software (Muthén & Muthén, 2004) to explore gender differences in the proposed integrated. Results are presented per behavior and outcome expectancy following the data plan below:

- 1) First, analyses were done using the target model and the same target model for both men and women where all paths were unconstrained; essentially three models were being examined: the full sample, men, and women. Overall model fit was examined.
- 2) Second, from output resulting from step 1, paths that were significant for both genders that will be referred to as “common paths” in subsequent text were constrained to be equal and reanalyzed against the unconstrained target model.
- 3) Third, to test for partial measurement invariance, the overall model fit from the unconstrained men-women models were compared to the model fit of the constrained target model. By using the χ^2 difference test, statistical significance differences in overall fit between the target models and the men-women models were examined. This test takes the difference between the χ^2 values of the two models; the target model and men-women model as well the difference between the two values of degrees of freedom, respectively. The χ^2 difference test examines the null hypothesis of two models. If the men-women model had overall model fit comparable to the model fit of the target model, it was concluded that there were no gender differences. If the men-women model had overall fit poorer

than the target model, the specific paths were reexamined to determine which paths in the men-women model were statistically different.

- 4) In the last step, significance testing was conducted by using Fisher's z-test (1915) with a Bonferroni correction to correct for family-wise error. The Bonferroni method corrects for the p-value by dividing the p-value by the number of comparisons (e.g., .05/number of comparisons). The new p-value becomes the standard for significance such that .05 is considered non-significant.

Prosocial behaviors. A multi-group path analysis approach was used to compare men and women on the path coefficients on six different prosocial behaviors. The path analysis utilized the new target model that included three correlational paths (i.e., norms with attitudes, norms with PBC, and attitudes with PBC) and two direct paths.

Table 7

Standardized Path Coefficients and z- Values Using the Revised Integrated Model for Partial Invariance Testing in Compliant Prosocial Behaviors for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
Compliant on Intent	-.41*	-8.10	-.42*	-8.69
Compliant on PBC	-.05	-.58	-.19*	-3.10
Compliant on Guilt	-.16	-1.17	.04	.47
Compliant on Shame	.18	1.28	-.02	-.26
Intent on Attitude	-.35	-.61	-.10	-1.24
Intent on Moral Norm	.25	.47	-.10	-1.28
Intent on PBC	.12	1.12	.04	.62
Attitude on Guilt	-.13	-.53	-.09	-.87
Attitude on Shame	-.42	-1.86	.01	.08
Norm on Guilt	-.11	-.48	-.02	-.16
Norm on Shame	-.42	-1.87	-.05	-.54
PBC on Guilt	-.07	-.38	.01	.10
PBC on Shame	-.18	-.68	-.02	-.22
Attitude <i>with</i> Norm	.98*	223.72	.42*	7.30
Attitude <i>with</i> PBC	.45	1.08	.37*	6.20
Norm <i>with</i> PBC	.43	1.06	.27*	4.28

Note: * Standard error > +/- 1.96, significant beta coefficient. “Guilt” and “shame” present guilt and shame proneness. “*With*” statements are correlational paths.

First, model fit results for an unconstrained model for compliant prosocial behavior ($\chi^2 = 23.95$, $df = 8$, $p = .002$, $CFI = .97$, $RMSEA = .11$, $SRMR = .09$) showed inadequate model fit. The direct path statistically significant and common between men and women was compliant and intentions (see Table 7 and refer to Appendix C for *Figure 10*). This direct path was constrained to be equal for both groups and the model was reanalyzed. Model fit results for the partial invariance model (constrained compliant behavior path model) had a fit that was comparable to the target model, ($\chi^2 = 24.66$, $df = 9$, $p = .003$, $CFI = .97$, $RMSEA = .10$, $SRMR = .09$); fit indices indicated inadequate model fit. The χ^2 difference test $\chi^2 = -.71$, $p > .05$, $df = 1$ confirmed there was not a significant difference between the constrained and unconstrained model.

Table 8

Standardized Path Coefficients and z- Values Using the Revised Integrated Model Dire Prosocial Behaviors for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
Dire on Intent	.05	.52	.16*	-.91
Dire on PBC	.08	.84	.15*	1.02
Dire on Guilt	-.13	-.81	-.01	-.47
Dire on Shame	.12	.70	-.12	1.05
Intent on Attitude	-.08	-.12	.10	-1.24
Intent on Moral Norm	.28	.54	.10	-1.28
Intent on PBC	.12	1.09	.05	.62
Attitude on Guilt	-.12	-.51	-.09	-.87
Attitude on Shame	-.43*	-2.00	.008	.08
Norm on Guilt	-.11	-.46	-.02	-.16
Norm on Shame	-.43*	-2.00	-.05	-.54
PBC on Guilt	-.07	-.38	.10	.10
PBC on Shame	-.20	-.80	-.02	-.22
Attitude <i>with</i> Norm	.98*	220.40	.42*	7.30
Attitude <i>with</i> PBC	.47	1.28	.37*	6.20
Norm <i>with</i> PBC	.46	1.26	.27*	4.28

Note: * Standard error > +/- 1.96, significant beta coefficient. “Guilt” and “shame” present guilt and shame proneness. “*With*” statements are correlational paths. These path coefficients represent path coefficients that are from the unconstrained model. No common paths were found to test partial invariance.

Second, model fit results for an unconstrained model for dire prosocial behavior across groups ($\chi^2 = 10.28$, $df = 8$, $p = .25$, $CFI = .99$, $RMSEA = .04$, $SRMR = .02$) showed acceptable model fit. Fit index values were comparable across groups in comparison to the overall sample. There were no common paths between men and women to examine the partial invariance model (see Table 8 and refer to Appendix C for *Figure 11*). This suggested that there were no gender differences between men and women in predicting engaging in dire prosocial behaviors.

Table 9

Standardized Path Coefficients and z- Values Using the Revised Integrated Model for Emotional Prosocial Behaviors for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
Emotional on Intent	.09	.94	.16*	2.43
Emotional on PBC	.07	.70	.15*	2.24
Emotional on Guilt	.05	.34	-.01	-.09
Emotional on Shame	-.24	-1.67	-.12	-1.17
Intent on Attitude	-.31	-.40	-.10	-1.24
Intent on Moral Norm	.25	.48	-.10	-1.28
Intent on PBC	.12	1.14	.05	.62
Attitude on Guilt	-.22	-.72	-.09	-.87
Attitude on Shame	-.21	-.67	.01	.08
Norm on Guilt	-.20	-.68	-.02	-.16
Norm on Shame	-.21	-.68	-.05	-.54
PBC on Guilt	-.10	-.44	.10	-.10
PBC on Shame	-.05	-.24	-.02	-.22
Attitude <i>with</i> Norm	.98*	259.99	.48*	7.30
Attitude <i>with</i> PBC	.38	.73	.37*	6.20
Norm <i>with</i> PBC	.37	.72	.27*	4.28

Note: * Standard error > +/- 1.96, significant beta coefficient. “Guilt” and “shame” present guilt and shame proneness. “*With*” statements are correlational paths. These path coefficients represent path coefficients that are from the unconstrained model. No common paths were found to test partial invariance.

Third, model fit results for an unconstrained model for emotional prosocial behavior across groups ($\chi^2 = 11.11$, $df = 8$, $p = .37$, $CFI = .99$, $RMSEA = .05$, $SRMR = .05$) showed acceptable model fit. Similar to the integrated path model for dire prosocial behaviors, fit indices were comparable across groups in comparison to the overall sample. There were no common paths between men and women to examine the partial invariance model (see Table 9 and refer to Appendix C for *Figure 12*). This suggested that there were no gender differences between men and women in predicting engaging in emotional prosocial behaviors.

Table 10

Standardized Path Coefficients and z- Values Using the Revised Integrated Model for Altruistic Prosocial Behaviors for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
Altruistic on Intent	-.03	-.32	-.04	-.62
Altruistic on PBC	-.04	-.44	.09	1.37
Altruistic on Guilt	-.07	-.47	-.15	-1.54
Altruistic on Shame	.20	1.26	.09	.93
Intent on Attitude	-.06	-.08	-.10	-1.24
Intent on Moral Norm	.28	.54	-.10	-1.28
Intent on PBC	.12	1.08	.05	.62
Attitude on Guilt	-.10	-.51	-.09	-.87
Attitude on Shame	-.54*	-2.90	.01	.08
Norm on Guilt	-.09	-.48	-.12	-.16
Norm on Shame	-.54*	-2.90	-.05	-.54
PBC on Guilt	-.06	-.35	.10	.10
PBC on Shame	-.26	-.95	-.02	-.22
Attitude <i>with</i> Norm	.97*	189.16	.42*	7.30
Attitude <i>with</i> PBC	.46	1.26	.37*	6.20
Norm <i>with</i> PBC	.45	1.24	.27*	4.28

Note: * Standard error > +/- 1.96, significant beta coefficient. "Guilt" and "shame" present guilt and shame proneness. "With" statements are correlational paths. These path coefficients represent path coefficients that are from the unconstrained model. No common paths were found to test partial invariance.

Fourth, model fit results for an unconstrained model for altruistic prosocial behavior across groups ($\chi^2 = 18.40$, $df = 8$, $p = .02$, $CFI = .98$, $RMSEA = .09$, $SRMR = .04$) showed acceptable model fit although the RMSEA was greater than the preferred .08 cut-off value. RMSEA and SRMR values improved across groups in comparison to the overall sample. Furthermore, there were no common paths between men and women in order to examine the partial invariance model (see Table 10 and refer to Appendix C for *Figure 113*). This suggested that there were no gender differences between men and women in predicting engaging in altruistic prosocial behaviors.

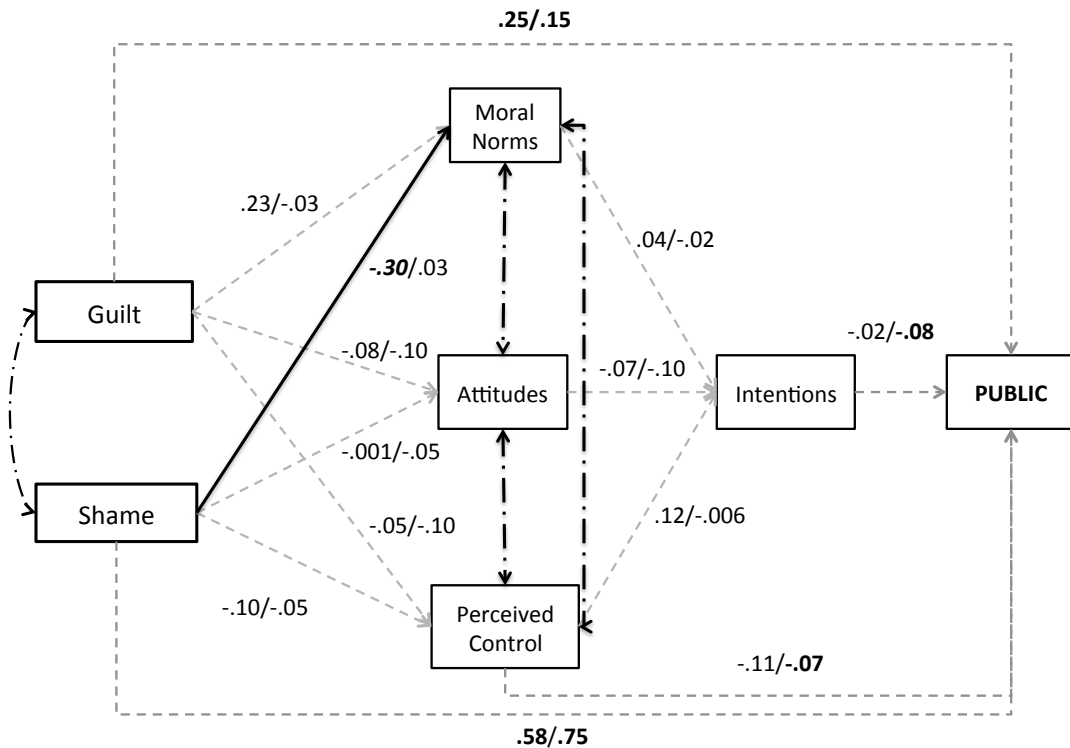


Figure 5. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Public Prosocial Behaviors. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- - -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bolded italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher’s Z test with Bonferroni corrections, $p < .0025$.

Fifth, model fit results for an unconstrained model for public prosocial behavior across groups ($\chi^2 = 12.54$, $df = 8$, $p = .13$, $CFI = .99$, $RMSEA = .05$, $SRMR = .02$) showed acceptable model fit. Model fit results for the partial invariance or constrained model across groups ($\chi^2 = 18.84$, $df = 10$, $p = .04$, $CFI = .98$, $RMSEA = .07$, $SRMR = .03$) showed acceptable model fit although the RMSEA was greater than the preferred cut-off value of .06. The χ^2 difference test $\chi^2 = -6.3$, $p < .05$, $df = 2$ confirmed there was a significant difference suggesting that the constrained model had poorer fit. The paths common between men and women were the two direct paths: public and guilt-proneness, public and shame-proneness. These paths were constrained to be equal for both groups and the model was reanalyzed. Further examination showed the direct path from guilt-proneness to public prosocial behaviors remained statistically significant in both groups, men: $\beta = .25$ and women: $\beta = .15$, $ps < .05$, Fisher's z-test $z = .90$, $p = .37$, and Bonferonni's p-value correction, $p = .0025$, confirmed this path was not statistically different between men and women. The direct path from shame-proneness to public prosocial behaviors also remained statistically significant in both groups, men: $\beta = .58$ and women: $\beta = .75$, $ps < .05$, Fisher's z-test $z = -2.68$, $p = .007$, and Bonferonni's p-value correction, $p = .0025$, confirmed this path was not statistically different between men and women. Additionally, the direct path from shame-proneness to moral norms remained statistically significant in men: $\beta = -.30$, $p < .05$ but not women: $\beta = .03$, $p > .05$, Fisher's z-test $z = -2.94$, $p = .002$, and Bonferonni's p-value correction, $p = .0025$, confirmed this direct path was statistically different between groups. The direct path from intentions to public prosocial behaviors remained statistically significant in women: $\beta = -.08$, $p < .05$ but not men: $\beta = -.02$, $p > .05$, Fisher's z-test $z = .52$, $p = .60$, and

Bonferonni’s p-value correction, $p = .0025$, confirmed this direct path was statistically not different between groups. The direct path from PBC to public prosocial behaviors remained statistically significant in women: $\beta = -.07$, $p < .05$ but not men: $\beta = -.11$, $p > .05$, Fisher’s z-test $z = -.35$, $p = .73$, and Bonferonni’s p-value correction, $p = .0025$, confirm this direct path was statistically not different between groups.

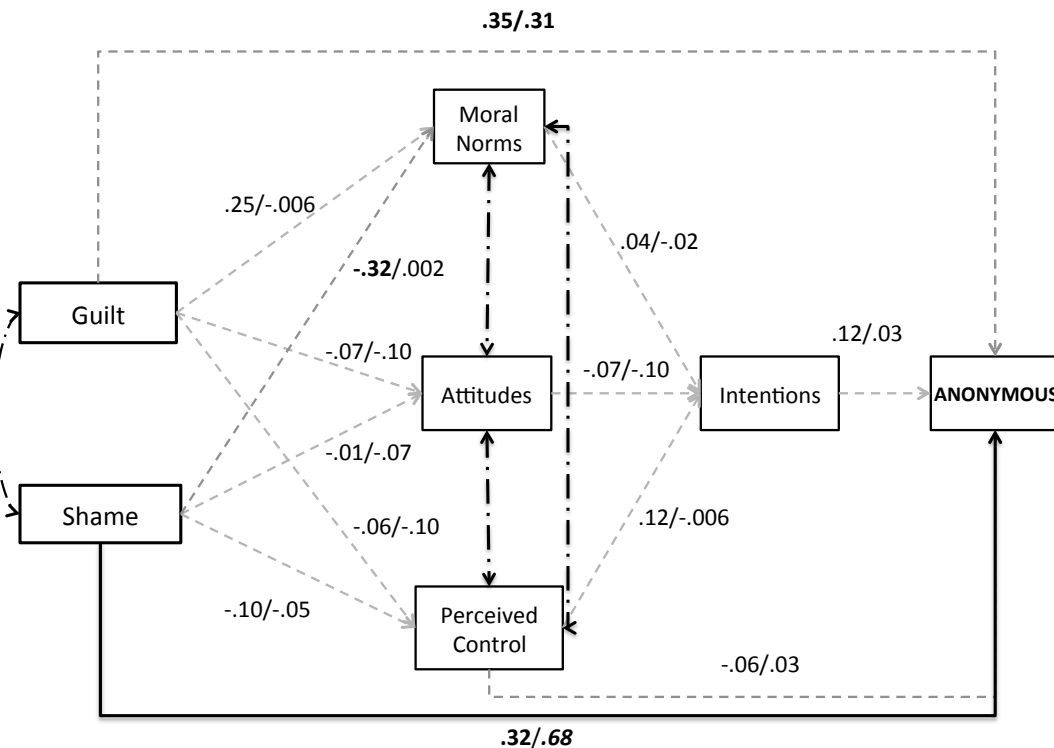


Figure 6. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Anonymous Prosocial Behaviors. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bolded italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher’s Z test with Bonferroni corrections, $p < .0025$.

Lastly, model fit results for an unconstrained model for anonymous prosocial behavior across groups ($\chi^2 = 2.62$, $df = 8$, $p = .96$, $CFI = .99$, $RMSEA = .01$, $SRMR = .02$) showed acceptable model fit. Model fit results for the partial invariance or constrained

model across groups ($\chi^2 = 32.39$, $df = 10$, $p < .001$, $CFI = .96$, $RMSEA = .11$, $SRMR = .03$) showed acceptable model fit although the RMSEA was greater than the preferred cut-off value of .06. The χ^2 difference test $\chi^2 = -29.67$, $p < .05$, $df = 2$ confirmed there was a significant difference suggesting that the constrained model had poorer fit. The paths common between men and women were the two direct paths: anonymous and guilt-proneness, anonymous and shame-proneness. These paths were constrained to be equal for both groups and the model was reanalyzed. Further examination showed the direct path from guilt-proneness to anonymous prosocial behaviors remained statistically significant in both groups, men: $\beta = .39$ and women: $\beta = .31$, $ps < .05$, Fisher's z-test $z = .39$, $p = .70$, and Bonferonni's p -value correction, $p = .0025$, confirmed this path was not statistically different between men and women. The direct path from shame-proneness to anonymous prosocial behaviors also remained statistically significant in both groups, men: $\beta = .32$ and women: $\beta = .68$, $ps < .05$, Fisher's z-test $z = -.43$, $p < .001$, and Bonferonni's p -value correction, $p = .0025$, confirmed this path was statistically different between men and women. Additionally, the direct path from shame-proneness to moral norms remained statistically significant in men: $\beta = -.32$, $p < .05$ but not women: $\beta = .002$, $p > .05$, Fisher's z-test $z = -2.82$, $p = .005$, and Bonferonni's p -value correction, $p = .0025$, confirmed this direct path was not statistically different between groups.

Smoking Behavior and Outcome Expectancies. A multi-group path analysis approach was used to compare men and women on the path coefficients on one smoking behavior, negative outcome expectancy measured by perceptions of negative consequences from smoking, and two positive outcome expectancies measured by likelihood and desirability of positive reinforcement from smoking. The path analysis

utilized the new target model that included one correlation path and two direct paths for smoking behavior and negative outcome expectancy.

Table 11

Standardized Path Coefficients and z- Values Using the Revised Integrated Model for Partial Invariance Testing in Smoking Behavior: Number of Cigarettes Smoked in 30 days for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
# Cig Smoke on Intent	.04	.63	.23	3.94
# Cig Smoke on PBC	.47	8.35	.44	9.02
# Cig Smoke on Guilt	.25	2.35	-.14	-1.74
# Cig Smoke on Shame	-.47	-4.59	.006	.09
Intent on Attitude	.11	1.40	.13	2.31
Intent on Moral Norm	.44	6.25	.26	6.82
Intent on PBC	.29	7.31	.41	7.10
Attitude on Guilt	.09	1.08	.22	2.66
Attitude on Shame	.41	3.99	.19	3.93
Norm on Guilt	-.09	-.69	-.11	-1.14
Norm on Shame	-.18	-1.32	-.06	-.60
PBC on Guilt	-.11	-.82	.02	.23
PBC on Shame	-.10	-.72	-.25	-2.64
Attitude <i>with</i> Norm	-	-	-	-
Attitude <i>with</i> PBC	-	-	-	-
Norm <i>with</i> PBC	.37	4.68	.45	8.06

Note: "Guilt" and "shame" present guilt and shame proneness. # of cig smoke represent number of cigarettes smoked in 30 days. "With" statements are correlational paths. These path coefficients represent path coefficients that are from the unconstrained model. No common paths were found to test partial invariance.

First, model fit results for an unconstrained model for number of cigarettes smoked ($\chi^2 = 121.54$, $df = 12$, $p < .001$, $CFI = .79$, $RMSEA = .24$, $SRMR = .08$) showed unacceptable model fit (see Table 11 and refer to Appendix C for *Figure 14*). The direct paths common between men and women were number of cigarettes and PBC, intentions and moral norms, intentions and PBC, and attitude and shame-proneness. These direct paths were constrained to be equal for both groups and the model was reanalyzed. Model fit results for the partial invariance model (constrained compliant behavior path model)

had a fit that was comparable to the target model, ($\chi^2 = 125.42$, $df = 16$, $p < .001$, $CFI = .80$, $RMSEA = .20$, $SRMR = .08$); $SRMR$ fit indices indicated acceptable model fit. The χ^2 difference test $\chi^2 = -3.88$, $p > .05$, $df = 4$ confirmed that there was not a significant difference between the constrained and unconstrained model suggesting the absence of gender differences.

Table 12

Standardized Path Coefficients and z- Values Using the Revised Integrated Model for Partial Invariance Testing in Negative Outcome Expectancy: Perceptions of Negative Consequences from Smoking for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
PercNegCons on Intent	.09	.85	-.08	-1.05
PercNegCons on PBC	.004	.04	.30	4.04
PercNegCons on Guilt	-.14	-1.00	-.24	-2.56
PercNegCons on Shame	-.02	-.12	.07	.72
Intent on Attitude	.11	1.30	.13	2.43
Intent on Moral Norm	.44	6.22	.26	6.63
Intent on PBC	.29	4.64	.41	6.66
Attitude on Guilt	.09	.75	.22	2.40
Attitude on Shame	.41	3.54	.19	2.08
Norm on Guilt	-.09	-1.14	-.11	-1.03
Norm on Shame	-.18	-1.34	-.06	-1.34
PBC on Guilt	-.11	-.95	.02	.34
PBC on Shame	-.10	-.60	-.25	-2.95
Attitude <i>with</i> Norm	-	-	-	-
Attitude <i>with</i> PBC	-	-	-	-
Norm <i>with</i> PBC	.37	4.68	.45	8.02

Note: "Guilt" and "shame" present guilt and shame proneness. "Percnegcon" represents perceptions of negative consequences from smoking. "With" statements are correlational paths. These path coefficients represent path coefficients that are from the unconstrained model. No common paths were found to test partial invariance.

Second, model fit results for an unconstrained model for negative outcome expectancy measured by perceptions of negative consequences across groups ($\chi^2 = 79.12$, $df = 12$, $p < .001$, $CFI = .82$, $RMSEA = .18$, $SRMR = .07$) showed acceptable model fit (see Table 12 and refer to Appendix C for *Figure 15*) through $SRMR$ although CFI and

RMSEA values were not within acceptable cut-off limits. CFI and RMSEA values did not improve across groups in comparison to the overall sample. Direct paths common between men and women were intentions and moral norms, intentions and PBC, and attitudes and shame-proneness. Model fit results for the partial invariance model (constrained negative outcome expectancy path model) had a fit that was poorer than the target model, ($\chi^2 = 81.89$, $df = 14$, $p < .001$, $CFI = .81$, $RMSEA = .17$, $SRMR = .08$); SRMR fit indices indicated acceptable model fit. The χ^2 difference test $\chi^2 = -2.77$, $p > .05$, $df = 2$ confirmed there was not a significant difference between the constrained and unconstrained model suggesting the absence of gender differences.

Table 13

Standardized Path Coefficients and z- Values Using the Revised Integrated Model for Partial Invariance Testing in Positive Outcome Expectancy: Likelihood of Positive Reinforcement from Smoking for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
LikePosReinf on Intent	.08	.92	-.07	-1.02
LikePosReinf on PBC	-.04	-.41	-.04	-.63
LikePosReinf on Guilt	.38	4.33	.22	4.15
LikePosReinf on Shame	.19	1.69	.37	6.41
Intent on Attitude	.11	1.39	.13	2.21
Intent on Moral Norm	.44	6.19	.26	6.76
Intent on PBC	.29	7.21	.41	7.00
Attitude on Guilt	.09	1.07	.22	2.68
Attitude on Shame	.41	4.00	.19	3.94
Norm on Guilt	-.09	-.71	-.11	-1.11
Norm on Shame	-.18	-1.30	-.06	-.62
PBC on Guilt	-.11	-.82	.02	.23
PBC on Shame	-.10	-.72	-.25	-2.63
Attitude <i>with</i> Norm	.09	-1.04	-.06	-1.01
Attitude <i>with</i> PBC	-	-	-	-
Norm <i>with</i> PBC	.37	4.62	.44	7.73

Note: "Guilt" and "shame" present guilt and shame proneness. "LikePosReinf" represent likelihood of positive reinforcement from smoking. "With" statements are correlational paths. These path coefficients represent path coefficients that are from the unconstrained model. No common paths were found to test partial invariance.

Third, model fit results for an unconstrained model for positive outcome expectancy measured by likelihood of positive reinforcement across groups ($\chi^2 = 15.89$, $df = 10$, $p = .10$, $CFI = .99$, $RMSEA = .06$, $SRMR = .03$) showed acceptable model fit (see Table 13 and refer to Appendix C for *Figure 16*). The direct paths common between men and women were likelihood of positive reinforcement and guilt-proneness, intentions and moral norms, intentions and PBC, and attitudes and shame-proneness. These direct paths were constrained to be equal for both groups and the model was reanalyzed. Model fit results for the partial invariance model (constrained likelihood of positive reinforcement path model) had a fit that was better than the target model, ($\chi^2 = 19.79$, $df = 14$, $p = .14$, $CFI = .99$, $RMSEA = .05$, $SRMR = .03$); The χ^2 difference test $\chi^2 = -3.90$, $p > .05$, $df = 4$ confirmed there was not a significant difference between the constrained and unconstrained model suggesting the absence of gender differences.

Table 14

Standardized Path Coefficients and z- Values Using the Revised Integrated Model for Partial Invariance Testing in Positive Outcome Expectancy: Desirability of Positive Reinforcement from Smoking for Men and Women

	Men		Women	
	β	Est/S.E.	β	Est/S.E.
DesPosReinf on Intent	.08	.88	-.10	-1.45
DesPosReinf on PBC	-.11	-1.15	-.09	-1.29
DesPosReinf on Guilt	.36	4.00	.21	3.80
DesPosReinf on Shame	.11	.69	.33	5.75
Intent on Attitude	.11	1.39	.13	2.24
Intent on Moral Norm	.44	6.21	.26	6.78
Intent on PBC	.29	7.25	.41	7.03
Attitude on Guilt	.09	1.07	.22	2.66
Attitude on Shame	.41	4.04	.19	3.95
Norm on Guilt	-.10	-.71	-.11	-1.14
Norm on Shame	-.18	-1.30	-.06	-.61
PBC on Guilt	-.11	-.82	.02	.20
PBC on Shame	-.10	-.72	-.25	-2.62
Attitude <i>with</i> Norm	.09	-1.04	-.06	-1.01
Attitude <i>with</i> PBC	-	-	-	-
Norm <i>with</i> PBC	.37	4.62	.44	7.78

Note: "Guilt" and "shame" present guilt and shame proneness. "DesPosReinf" represent desirability of positive reinforcement from smoking. "With" statements are correlational paths. These path coefficients represent path coefficients that are from the unconstrained model. No common paths were found to test partial invariance.

Lastly, model fit results for an unconstrained model for positive outcome expectancy measured by desirability of positive reinforcement across groups ($\chi^2 = 13.82$, $df = 10$, $p = .18$, $CFI = .99$, $RMSEA = .05$, $SRMR = .03$) showed acceptable model fit (see Table 14 and refer to Appendix C for *Figure 17*). The direct paths common between men and women were desirability of positive reinforcement and guilt-proneness, intentions and moral norms, intentions and PBC, and attitudes and shame-proneness. These direct paths were constrained to be equal for both groups and the model was reanalyzed. Model fit results for the partial invariance model (constrained desirability of positive reinforcement path model) had a fit that was poorer to the target model, ($\chi^2 =$

18.02, $df = 14$, $p = .21$, CFI = .99, RMSEA = .04, SRMR = .03); The χ^2 difference test $\chi^2 = -4.20$, $p > .05$, $df = 4$ confirmed that there was not a significant difference between the constrained and unconstrained model suggesting the absence of gender differences.

Mediation Analysis

Hypothesis 10: Perceived behavioral control would mediate the relation between moral emotions and health behaviors. However, intentions would mediate the relation between moral emotions and health behaviors, also.

To address the final hypothesis that PBC and intentions would mediate the relations between moral variables and health behaviors and outcome expectancies, further analyses were conducted utilizing the modified path models. However, after analyzing the correlation matrix, PBC was not significantly correlated with either guilt-proneness or shame-proneness violating the first rule of mediation where variables need to be related to one another. Based on literature stating that intentions alone may be a strong influence in motivating individuals to engage in certain behaviors (McMillan & Conner, 2003; Smith, Bean, Mitchell, Speizer, & Fries, 2007; Stanton, Barnett, & Silva, 2005); careful examination revealed that intentions were correlated with shame-proneness, albeit in positive smoking outcome expectancies. The results from a mediation test are presented below.

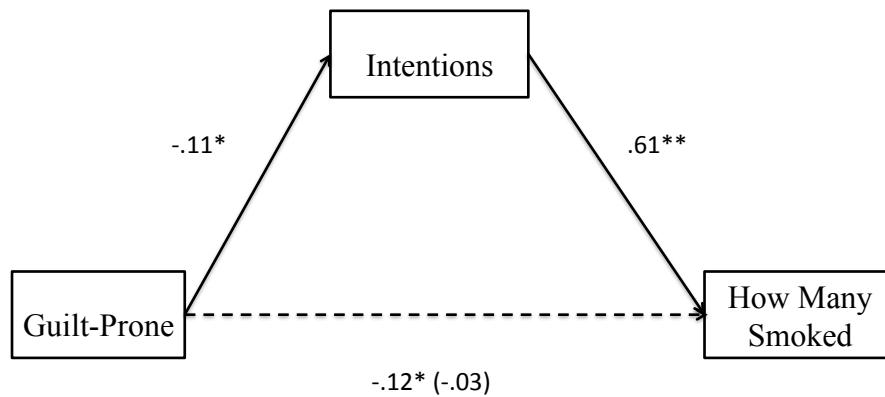


Figure 7. Smoking Intentions as a Mediator Between Guilt-Proneness and the Number of Cigarettes Smoked in the Past 30 Days $N = 330$, * = $p < .05$, ** = $p < .01$. *Note:* Values in the parenthesis are the standardized beta coefficients. Gender was entered as a control variable.

The Baron and Kenny (1986) approach for establishing mediation was used for smoking behavior and positive outcome expectancies from smoking: likelihood and desirability of positive reinforcement. The first mediational model contained the antecedent variable guilt-proneness, the mediator smoking intentions, and the outcome variable how many smoked (see *Figure 7.*) was evaluated. On Step 1, guilt-proneness was significantly associated with smoking intentions ($\beta = -.11$, $p = .04$; $R^2 = .01$, $p = .04$). On Step 2, guilt-proneness was significantly associated with the number of cigarettes smoked in the past 30 days, ($\beta = -.12$, $p = .03$; $R^2 = .12$, $p = .03$). On Step 3, number of cigarettes smoked was significantly associated with smoking intentions ($\beta = .61$, $p < .001$; $R^2 = .38$, $p < .001$). On step 4, guilt-proneness ($\beta = -.03$, $p = .52$) was not significantly associated with the number of cigarettes smoked and smoking intentions (β

= .61, $p < .001$) was significantly associated with the number of cigarettes smoked ($R^2 = .38, p < .001$). Since the relation between guilt-proneness and number of cigarettes smoked did not remain significant suggests that this relation was fully mediated by smoking intentions. The Sobel test confirmed that this mediated effect was statistically significant, $z = -2.16, p = .03$.

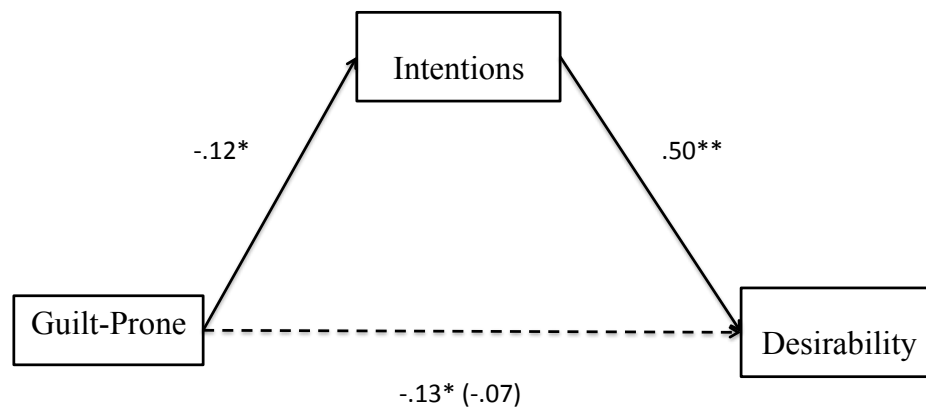


Figure 8. Smoking Intentions as a Mediator Between Guilt-Proneness and Desirability of Positive Reinforcement from Smoking. $N = 330$, * = $p < .05$, ** = $p < .01$. Note: Values in the parenthesis are the standardized beta coefficients. Gender was entered as a control variable.

The second mediational model contained the antecedent variable guilt-proneness, the mediator smoking intentions, and the outcome variable desirability of positive reinforcement from smoking (see *Figure 8*) was evaluated. On Step 1, guilt-proneness was significantly associated with smoking intentions ($\beta = -.12, p = .03; R^2 = .01, p = .03$). On Step 2, guilt-proneness was significantly associated with desirability of positive reinforcement from smoking ($\beta = -.13, p = .02; R^2 = .02, p = .02$). On Step 3, desirability

of positive reinforcement from smoking was significantly associated with smoking intentions ($\beta = .50, p < .001; R^2 = .25, p < .001$). On step 4, guilt-proneness ($\beta = -.07, p = .15$) was not significantly associated with desirability of positive reinforcement from smoking however smoking intentions ($\beta = .49, p < .001$) was significantly associated with desirability of positive reinforcement from smoking ($R^2 = .25, p < .01$). The relation between guilt-proneness and desirability of positive reinforcement from smoking did not remain significant suggesting that this relation was fully mediated by smoking intentions. The Sobel test confirmed that this mediated effect was not statistically significant, $z = -1.85, p = .06$.

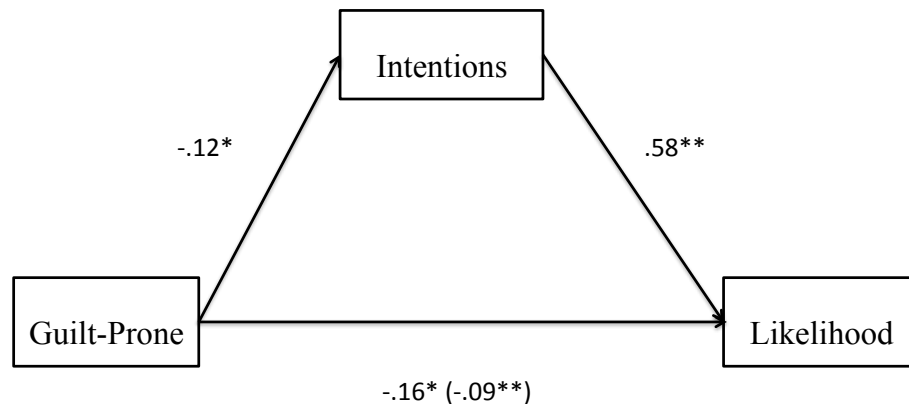


Figure 9. Smoking Intentions as a Mediator Between Guilt-Proneness and Likelihood of Positive Reinforcement from Smoking. $N = 330$, $* = p < .05$, $** = p < .01$. *Note:* Values in the parenthesis are the standardized beta coefficients. Gender was entered as a control variable.

The third mediational model contained the antecedent variable guilt-proneness, the mediator smoking intentions, and the outcome variable likelihood of positive

reinforcement from smoking (see *Figure 9*) was evaluated. On Step 1, guilt-proneness was significantly associated with smoking intentions ($\beta = -.12, p = .03; R^2 = .01, p = .03$). On Step 2, guilt was significantly associated with likelihood of positive reinforcement from smoking ($\beta = -.16, p = .003; R^2 = .03, p = .003$). On Step 3, likelihood of positive reinforcement from smoking was significantly associated with smoking intentions ($\beta = .58, p < .001; R^2 = .34, p < .001$). On step 4, guilt-proneness ($\beta = -.09, p = .04$) and smoking intentions ($\beta = .57, p < .001$) was significantly associated with likelihood of positive reinforcement from smoking ($R^2 = .34, p < .001$). The relation between guilt-proneness and likelihood of positive reinforcement from smoking remained statistically significant but was slightly lower than that found on step 2, suggesting that the relation between guilt-proneness and likelihood of positive reinforcement from smoking was partially mediated by smoking intentions. The Sobel test suggested that this mediated effect was statistically significant, $z = -2.16, p = .03$.

Multiple Regression Analyses

Multiple regression analyses were conducted to examine hypotheses #1, 2, 4, and 5 using the modified integrated path models or target models. The results presented (See Table 15) are presented based on behaviors and outcome expectancies, rather than per hypothesis because of the overlap some behaviors have across the four hypotheses. Specifically, hypotheses 1, 2, 4, and 5 aimed to predict the influence of guilt-proneness, shame-proneness, PBC, and intentions on all six prosocial behaviors and smoking behavior. However, outcome expectancies (e.g., perceptions of negative consequences, likelihood and desirability of positive reinforcement) were not examined in relation to

PBC or intentions because traditionally, PBC and intentions are variables geared towards predicting actual behavior (i.e., smoking).

Prosocial Behaviors. To evaluate how well guilt-proneness, shame-proneness, PBC, and intentions were associated with each of the six prosocial behaviors and smoking behavior:

Compliant prosocial behaviors. Guilt-proneness, shame-proneness, PBC, and intentions accounted for a significant amount of variance in compliant prosocial behaviors, $F(4, 322) = 11.43, p < .001, R^2 = .35$, 95% CI ranged from .26 to .43. The partial regression coefficient relating guilt-proneness to compliant behaviors was statistically significant, $\beta = .22, p < .001, CI = .10$ to .34. The partial regression coefficient relating shame-proneness to compliant behaviors was not statistically significant, $\beta = .02, p > .05, CI = -.10$ to .14. The partial regression coefficient relating PBC to compliant behavior was statistically significant, $\beta = .13, p < .05, CI = -.01$ to .27. The partial regression coefficient relating intentions to compliant prosocial behavior was also statistically significant, $\beta = .15, p < .05, CI = .01$ to .29.

Dire prosocial behaviors. Guilt-proneness, shame-proneness, PBC, and intentions accounted for a significant amount of variance in dire prosocial behaviors, $F(4, 322) = 8.30, p < .001, R^2 = .31$, 95% CI ranged from .23 to .39. The partial regression coefficient relating guilt-proneness to dire behavior was statistically significant, $\beta = .19, p = .002, CI = .07$ to .31. The partial regression coefficient relating shame-proneness to dire prosocial behavior was not statistically significant, $\beta = -.03, p = .65, CI = -.15$ to .09. The partial regression coefficient relating PBC to dire behaviors was not statistically significant, $\beta =$

.11, $p = .11$, $CI = -.03$ to $.24$. The partial regression coefficient relating intentions and direct behaviors was statistically significant, $\beta = .15$, $p = .02$, $CI = .02$ to $.29$.

Emotional prosocial behaviors. Guilt-proneness, shame-proneness, PBC, and intentions accounted for a significant amount of variance in emotional prosocial behaviors, $F(4, 322) = 7.06$, $p < .001$, $R^2 = .28$, 95% CI ranged from $.20$ to $.36$. The partial regression coefficient relating guilt-proneness to emotional behavior was not statistically significant, $\beta = .11$, $p = .06$, $CI = -.006$ to $.23$. The partial regression coefficient relating shame-proneness to emotional prosocial behavior was not statistically significant, $\beta = .10$, $p = .12$, $CI = -.02$ to $.22$. The partial regression coefficient relating PBC to emotional behaviors was not statistically significant, $\beta = .12$, $p = .09$, $CI = -.02$ to $.25$. The partial regression coefficient relating intentions and emotional behaviors was not statistically significant, $\beta = .13$, $p = .06$, $CI = -.004$ to $.27$.

Altruistic prosocial behaviors. Guilt-proneness, shame-proneness, PBC, and intentions did not account for a significant amount of variance in altruistic prosocial behaviors, $F(4, 322) = 1.69$, $p = .15$, $R^2 = .14$, 95% CI ranged from $.07$ to $.21$. The partial regression coefficient relating guilt-proneness to altruistic behavior was statistically significant, $\beta = .13$, $p = .04$, $CI = .004$ to $.25$. The partial regression coefficient relating shame-proneness to altruistic prosocial behavior was not statistically significant, $\beta = .01$, $p = .84$, $CI = -.11$ to $.14$. The partial regression coefficient relating PBC to altruistic behaviors was not statistically significant, $\beta = .06$, $p = .43$, $CI = -.08$ to $.19$. The partial regression coefficient relating intentions and altruistic behaviors was also not statistically significant, $\beta = -.04$, $p = .58$, $CI = -.18$ to $.10$.

Public prosocial behaviors. Guilt-proneness, shame-proneness, PBC, and intentions did not account for a significant amount of variance in public prosocial behaviors, $F(4, 322) = .16, p = .96, R^2 = .002$, 95% CI ranged from $-.01$ to $.01$. The partial regression coefficient relating guilt-proneness to public behavior was not statistically significant, $\beta = -.01, p = .84, CI = -.14$ to $.11$. The partial regression coefficient relating shame-proneness to public prosocial behavior was not statistically significant, $\beta = -.03, p = .69, CI = -.15$ to $.10$. The partial regression coefficient relating PBC to public behaviors was not statistically significant, $\beta = .01, p = .89, CI = -.13$ to $.15$. The partial regression coefficient relating intentions and public behaviors was also not statistically significant, $\beta = .02, p = .78, CI = -.12$ to $.16$.

Anonymous prosocial behaviors. Guilt-proneness, shame-proneness, PBC, and intentions did account for a significant amount of variance in anonymous prosocial behaviors, $F(4, 322) = 3.18, p = .01, R^2 = .04$, 95% CI ranged from $-.001$ to $.08$. The partial regression coefficient relating guilt-proneness to anonymous behaviors was not statistically significant, $\beta = .007, p = .90, CI = -.11$ to $.13$. However, the partial regression coefficient relating shame-proneness to anonymous prosocial behavior was statistically significant, $\beta = .12, p = .04, CI = .003$ to $.25$.

The partial regression coefficient relating PBC to anonymous behavior was not statistically significant, $\beta = .09, p = .19, CI = -.05$ to $.23$. The partial regression coefficient relating intentions and anonymous behavior was also not statistically significant, $\beta = .08, p = .25, CI = -.06$ to $.23$.

In addressing smoking behavior, a multiple regression analysis was conducted to evaluate how well PBC (hypothesis 4) intentions (hypothesis 5), guilt-proneness

(hypothesis 1), and shame-proneness (hypothesis 2) were associated the number of cigarettes smoked (see Table 7). These four variables did account for a significant amount of variance in number of cigarettes smoked, $F(4, 311) = 49.62, p < .001, R^2 = .39$, 95% CI ranged from .31 to .47. The partial regression coefficient relating PBC to smoking behavior was not statistically significant, $\beta = .07, p = .14, CI = -.02$ to .16. The partial regression coefficient relating intentions and smoking behavior was statistically significant, $\beta = .59, p < .001, CI = .52$ to .72. The partial regression coefficient relating guilt-proneness to smoking behaviors was not statistically significant, $\beta = .02, p = .76, CI = -.08$ to .12. However, the partial regression coefficient relating shame-proneness to smoking prosocial behavior was large and statistically significant, $\beta = -.10, p = .05, CI = -.08$ to .12.

Smoking Behavior. To evaluate how well guilt-proneness, shame-proneness, PBC, and intentions were associated with smoking behavior:

Number of cigarettes smoked in 30 days:

Smoking Outcome Expectancies. To evaluate how well guilt-proneness and shame-proneness were associated with smoking outcome expectancies:

Perceptions of negative consequences from smoking. Examining perceptions of negative consequences from smoking was considered a negative outcome expectancy of smoking. Guilt- and shame-proneness did not account for a significant amount of variance in perceptions of negative consequences, $F(2, 323) = 2.63, p = .07, R^2 = .13$, 95% CI ranged from .06 to .20. The partial regression coefficient relating guilt-proneness to perceptions of negative consequences was not statistically significant, $\beta = .11, p = .07, CI = -.01$ to .23. Similarly, the partial regression coefficient relating shame-proneness and

perceptions of negative consequences was not statistically significant, $\beta = .03$, $p = .65$, $CI = -.01$ to $.15$.

Likelihood of positive reinforcement from smoking. Guilt- and shame-proneness accounted for a significant amount of variance in likelihood of positive reinforcement from smoking, $F(2, 321) = 4.38$, $p = .07$, $R^2 = .16$, 95% CI ranged from $.09$ to $.23$. The partial regression coefficient relating guilt-proneness to likelihood of positive reinforcement was statistically significant, $\beta = -.17$, $p = .006$, $CI = -.29$ to $-.04$. The partial regression coefficient relating shame-proneness and likelihood of positive reinforcement was not statistically significant, $\beta = .02$, $p = .78$, $CI = -.11$ to $.14$.

Desirability of positive reinforcement from smoking. Guilt- and shame-proneness did not account for a significant amount of variance in desirability of positive reinforcement from smoking, $F(2, 320) = 2.78$, $p = .06$, $R^2 = .13$, 95% CI ranged from $.06$ to $.20$. The partial regression coefficient relating guilt-proneness to desirability of positive reinforcement was statistically significant, $\beta = -.14$, $p = .02$, $CI = -.26$ to $-.02$. The partial regression coefficient relating shame-proneness and desirability of positive reinforcement was not statistically significant, $\beta = .03$, $p = .60$, $CI = -.10$ to $.16$.

Table 15

Summary of Multiple Regression Analyses from Hypotheses #1, 2, 4, and 5 for Prosocial Behaviors, Smoking and Outcome Expectancies

Behavior/Outcome	Variables							
	Guilt-Prone		Shame-Prone		PBC		Intentions	
	B (SE)	β	B (SE)	β	B (SE)	β	B (SE)	β
Compliant	.23 (.06)	.22**	.02 (.06)	.02	.13 (.07)	.13*	.15 (.07)	.15*
Dire	.19 (.06)	.19*	-.03 (.06)	-.03	.11 (.07)	.11	.15 (.07)	.15*
Emotional	.11 (.06)	.11	.10 (.06)	.09	.12 (.07)	.11	.13 (.07)	.13
Altruistic	.13 (.06)	.13*	.01 (.06)	.01	.06 (.07)	.06	-.04 (.07)	-.04
Public	-.01 (.06)	-.01	.03 (.06)	-.03	.01 (.07)	.01	.02 (.07)	.02
Anonymous	.007 (.06)	.007	.13 (.06)	.12*	.09 (.07)	.09	.08 (.07)	.08
How Many	.02 (.05)	.02	-.10 (.05)	-.10*	.07 (.05)	.07	.62 (.05)	.59*
Negative Conseq.	.11 (.06)	.11	.03 (.06)	.03	-	-	-	-
Likelihood	-.17 (.06)	-.17	.02 (.06)	.02	-	-	-	-
Desirability	-.14 (.06)	-.14	.03 (.06)	.03	-	-	-	-

N = 330. ** $p < .001$. * $p < .05$. Smoking behavior is measured by “How many” = number of cigarettes smoked in 30 days. Perceptions of negative consequences = “Negative conseq”. Positive outcome expectancies: “Likelihood” = likelihood of positive reinforcement expected from smoking. “Desirability” = desirability of positive reinforcement expected from smoking.

Discussion

The present study proposed an integrated Theory of Planned Behavior (Ajzen, 1985; 1988; 1991) model investigating the mechanisms behind health decision-making by complementing the existing TPB with moral emotions. This discussion highlighted findings from the final integrated path model, the multiple group path models, and the implications these findings had in the context of moral emotions. Lastly, theoretical implications, limitations, and future directions concluded the discussion.

Main Findings for the Proposed Integrated Path Model for Health Behaviors

The main objective of this study was to explore the link between moral emotions and health behaviors using the components of the Theory of Planned Behavior (TPB) (Ajzen, 1985; 1988; 1991) in the form of an integrated path model. The findings demonstrated that the initial hypothesized paths in the proposed model did not adequately describe the data from the current study and some modifications were needed to improve model fit. These modifications included the addition of paths from moral emotions to health behaviors suggesting a possible relation of moral emotions with health behaviors independent of norms, attitudes, intentions, and perceived behavioral control (PBC). Contrary to the traditional TPB model that posited norms, attitudes and PBC independently predicting intentions, the addition of correlational paths among the TPB components (i.e., norms, attitudes, and PBC) suggested an association amongst these variables. The addition of these direct and correlational paths served to improve model fit for further testing.

Furthermore, the final integrated model resulted in different models for the health behaviors in question. Starting with prosocial behaviors, it was expected that each

integrated model would differ across all six prosocial behaviors. However, findings from this dissertation indicated that the final integrated path model for one prosocial behavior (e.g., compliant prosocial behaviors) was applicable to all other prosocial behaviors as well. The current findings supported past research findings that these six individual prosocial behaviors coexist together in a larger construct of prosocial behaviors (Carlo & Randall, 2002). Because all six prosocial behaviors could be examined using the same model and all were negatively related to smoking behavior and smoking outcome expectancies, evidence to conceptualize prosocial behaviors as positive health behaviors was provided.

With smoking indices, it was expected that the same final integrated model would differ from prosocial behaviors. This expectation was confirmed and the final integrated path model actually resulted in two different patterns across the smoking indices. The patterns both required the addition of the same direct paths from moral emotion to the smoking index outcome and differed in the addition of correlation paths. The final two integrated path models differentiated the smoking indices into two categories: negative and positive smoking outcomes. The negative outcomes included number of cigarettes smoked in 30 days and perceptions of negative consequences. The positive outcomes consisted of likelihood and desirability of positive reinforcement gained from smoking (e.g., lowered stress, relaxed mood). The results from the final integrated path model for smoking indices suggested that even though smoking is an unhealthy behavior with deleterious consequences, certain aspects of smoking might still have desirable effects (i.e., positive reinforcement).

The Role of Moral Emotions in Health Behaviors and the TPB

In general, the moral emotion variables in the current proposed model were significantly correlated with TPB and health behaviors. Moral variables examined within an integrated path model with TPB components after appropriate modifications were made showed adequate model fit therefore describing the current data. However, when the modified integrated path model was examined closer, moral emotions were not associated with health behaviors via the TPB components as hypothesized. Rather, moral emotions, specifically guilt-proneness was found to be associated with indices of smoking when mediated by smoking intentions such that guilt-prone individuals were less likely to expect and desire positive reinforcement from smoking and would smoke fewer cigarettes in 30 days.

When examining the integrated TPB model, the TPB failed to emerge as mediator between moral emotions and health behaviors. This prompted a further examination at the role of perceived behavioral control and intentions through mediational analysis, without examining moral norms and attitudes. Thus, competing hypotheses were tested to explore the role of perceived behavioral control and intentions and how they might mediate between moral emotions and health behaviors. The basis for hypothesizing both these variables was based on the limited research supporting both as strong mediators in predicting behaviors (Murgraff et al., 2001; McMillan & Conner, 2003; Smith, Bean, Mitchell, Speizer, & Fries, 2007; Stanton, Barnett, & Silva, 2003). Compounded by research findings that guilt-proneness led to more positive outcomes (see Tangney, Miller, Flicker, & Barlow, 1996;) and shame-proneness led to more negative outcomes (see Lewis, 1971; Andrews, Brewin, Rose, & Kirk, 2000; Lindsay-Hartz, 1984;

Jonsdottir & Jonsdottir, 2007; Irwin, Johnson, & Botorff, 2005), it was expected that regardless of the mediator, guilt-proneness would be related to more positive health behaviors and less negative health behaviors and shame-proneness would be related to less positive health behaviors and more negative behaviors.

The current findings revealed intentions as the mediating variable between moral emotions and health behaviors, specifically smoking intentions mediated the relations between guilt-proneness and smoking indices. The health behaviors that were found significant were indices of smoking outcomes. However, shame-proneness did not emerge as the moral emotion as expected as these analyses involved three negative health outcomes. The findings included the following:

1. Smoking intentions fully mediated the relation between guilt-proneness and two smoking outcomes: the number of cigarettes smoked in 30 days and desirability of positive reinforcement such that as guilt-proneness increased, the fewer intentions an individual had to smoke or desire positive reinforcement, and so they smoked less and desired fewer positive reinforcement from smoking.
2. Smoking intentions also only partially mediated the relation between guilt-proneness and the likelihood of positive reinforcement from smoking such that as guilt-proneness increased, the fewer intentions the individual had to smoke led to fewer expectations of positive reinforcement from smoking. Additionally, higher levels of guilt-proneness were associated with lower expectations of positive reinforcement.

The direct relations between guilt-proneness and smoking outcomes were consistent with previous research findings (see Tangney, Miller, Flicker, & Barlow, 1996; Lewis, 1971; Andrews, Brewin, Rose, & Kirk, 2000; Lindsay-Hartz, 1984; Jonsdottir & Jonsdottir, 2007; Irwin, Johnson, & Bottorff, 2005), and the direction of the relations between guilt-proneness and smoking outcomes remained the same when mediated by smoking intentions. As expected based on Tangney's work, guilt-proneness would be associated more with better health outcomes and less with negative health outcomes. Given that smoking intentions rather than perceived behavioral control emerged as the significant mediator in the current study, it would serve to add to the literature that found support for intention as a stronger mediator than perceived behavioral control. It can be speculated however that intentions might be more strongly associated with feelings by guilt because those who are guilt-prone may be more motivated to correct their wrongdoings or in other words, they may have strong intentions to behave in such ways.

Furthermore, the evidence linking moral emotions with TPB components highlighted the mediational function of perceived behavioral control. These findings can be tied back into the notion that shame-proned individuals may be more likely to exhibit and engage in negative behaviors (see Lewis, 1971; Andrews, Brewin, Rose, & Kirk, 2000; Lindsay-Hartz, 1984) and may ultimately be less likely to agree with positive notions towards positive behaviors. Moreover, shame-proned individuals are believed to experience negative affective responses following public disapproval (Ausubel, 1955; Benedict, 1946) and experience a desire to escape from the sense of exposure of belittlement (Tangney, 1993; Tangney, Miller, Flicker, & Barlow, 1996; Tangney, Stuewig, & Mashek, 2007).

Since the basis of conceptualization of guilt- and shame-proneness was based on the literature and research established by Tangney's work (1990; 1991; 2007), the current findings were not consistent with these conceptualizations in that negative outcomes would have been related to shame-proneness rather than guilt-proneness. The inconsistent findings may be due to the fact that the outcomes differ between the current dissertation and Tangney's work, that is, health behavior outcomes compared to psychological health outcomes, respectively. Instead, the current findings suggested that guilt and shame-proneness seem to function similarly in predicting behavioral outcomes especially since the expected outcomes from guilt and shame-proneness did not materialize. The present findings suggested that guilt and shame-proneness are conceptually similar. Given the findings of the current dissertation, one possibility is to expand on Baumeister et al.'s, (1994) approach towards considering guilt-proneness as an emotion that promotes positive behaviors whereas shame-proneness prevents individuals from engaging in negative behaviors. This framework differs from Tangney's in that it does not suggest that shame-proneness leads to negative behaviors but rather prevents them. Further research is needed to fully understand the dynamics between guilt and shame-proneness and its outcomes.

The current findings suggested that the TPB variables, namely intention related to smoking behavior is an important predictor of specific health behaviors such as the number of cigarettes smoked in 30 days. However, the TPB variables were not successful in predicting prosocial behaviors. This raised questions regarding how future studies could integrate other moral variables with the TPB to predict other types of health outcomes. The TPB itself did not predict any of the health outcomes in the current study

and only parts of the model were successful predictors when the model was examined on a smaller scale. Once moral emotions were integrated, the emotions directly predicted health outcomes and there were no indirect relations via attitudes, perceived behavioral control, moral norms, and intentions. The overall findings suggested that feelings rather than cognitions might play a stronger role in predicting health behavior outcomes.

Implications of the Study Findings

Theoretical Implications.

One implication of the present findings is whether moral emotions could be associated with behaviors given the limited research linking these variables. Findings from the current study were consistent with findings regarding intentions as mediators between a selected construct, in this case, moral emotions and a behavioral outcome. The current findings suggest that guilt-proneness may be effective in eliciting more positive behaviors and preventing negative ones (Baumeister, Stillwell, & Heatherton, 1994; 1995a; 1995b) in that those prone to guilt were less likely to smoke or expect positive reinforcement from smoking. When mediated by intentions, the interpretation of the direction of the beta coefficient remained the same in that being more prone to guilt was associated with fewer intentions to engage in smoking. More experimental research is needed to determine to what degree intentions may mediate between moral emotions and behavioral health outcomes.

Another implication concerns how the TPB did not mediate between moral emotions and health behaviors as well as how the TPB did not significantly predict health behaviors. While components within the TPB were generally positively correlated with each health outcome, the findings also showed that only parts of the TPB predicted health

behaviors. For example, when the TPB was examined with moral emotions as an integrated path model, TPB was associated with public and anonymous behaviors for specific gender groups. In contrast, when parts of the TPB were examined in the mediational analyses, TPB was associated with smoking outcomes. It could be speculated that the integrated path model was associated with prosocial behaviors because engaging in prosocial behaviors may require both cognitive and emotional evaluations of the behavior. In the case of the prosocial individual, it could be that they are more thoughtful and may take society's norms and evaluating their attitudes about a certain prosocial behavior rather than acting on a need to fulfill an addiction. Thus, the integrated model may better predict prosocial behaviors. In contrast, a smoker may not consider society's norms or their attitudes towards smoking into consideration as much as satisfying their cravings. This is not to say they are not evaluating norms, attitudes, or lacking moral emotions, but more so that the addiction overrides such cognitive and moral emotion evaluations. These findings suggest that further research needs to be done to determine how moral emotions changes the predictive utility of the TPB.

The current findings have practical implications for health research in two ways. The first deals with ways to communicate health messages to men and women given that it was unclear how guilt- and shame-proneness are associated behavioral health outcomes. Past research suggested guilt-proneness would lead to more positive outcomes; shame-proneness would lead to more negative outcomes. However, the current findings show evidence that shame and guilt-proneness were associated with health outcomes in the same manner and are consistent with aspects of previous research. Moral emotions may be associated with some parts of the decision making process albeit through norms,

perceived behavioral control, or intentions. This could have potential in helping doctors or public health administrators to rephrase their health messages to more effectively influence behavioral changes those they intend to help. Health messages based on facts can easily be glanced over when the medical, social, emotional, and psychological consequences are not made salient. Tapping into emotional proneness that people already possess may possibly alter the way people think of their health. Health messages, particularly with smoking, have begun to show photos of people who have succumbed to the effects of smoking. The rationale being that graphic photos or commercials will provoke negative emotional responses (e.g., shame, fear, disgust, guilt) causing smokers to quit and those thinking of smoking to not start.

A second implication deals with examining and classifying prosocial behaviors as health behaviors as health behaviors are usually considered going to the doctor for a checkup, smoking, drinking, overeating, not eating, or exercising. Previous findings have shown that guilt-proneness led to more positive behavioral outcomes (see Baumeister, Stillwell, & Heatherton, 1994; 1995a; 1995b) and that engaging in prosocial behaviors led to subsequent health benefits of improved cardiovascular functioning, positive mood, and overall better well being (Gueguen & De Gail, 2003; Tsang, 2006; Danner, Frisen, & Collier, 2008). The present study supplements these by findings by showing evidence that prosocial behaviors were negatively associated with smoking indices. In all, when considering a positive health outcome such as improved mood, we needed to consider the means by which we are achieving this positive mood. If we engaged in prosocial behaviors that resulted in an increase of positive mood, it would make practical sense to consider prosocial behaviors a health behavior.

Exploratory Gender-Related Study Findings

Utilizing the modified integrated path analyses as the new target model for the multiple-group analyses, gender differences were explored per health behaviors and outcome expectancies. While some significant gender differences in the pattern of relations emerged for two of the six prosocial behaviors, these analyses were fully exploratory and the interpretations of these findings should be taken with caution. Overall, some model paths show a greater tendency towards significant findings for men, as opposed to women, and the significant gender differences in the pattern of relations emerged only for public and anonymous prosocial behaviors.

One significant gender difference in public prosocial behaviors emerged such that as levels of shame-proneness increased in men but not women, there was a concomitant decrease in agreement with moral norms to engage in public prosocial behaviors. This finding was consistent with the literature finding that shame-proned individuals engaged in less positive behaviors and more in negative types of behaviors (Andrews, Brewin, Rose, & Kirk, 2000; Bennett, Sullivan, & Lewis, 2005; Harper & Arias, 2004). When shame-proned individuals, in this case, men, are in the state of experiencing shame, they feel belittled and unworthy. Thus, it could be the case that when they experiencing this belittlement and unworthiness, they are apathetic towards any thoughts or feelings towards positive behaviors. It could be speculated that the men in the current sample were more prone to shame than guilt than women and thus did not feel motivated to engage in prosocial types of behaviors because of the shameful feelings. Women on the other hand have been found to be more prone to shame and guilt than men (see Gross, 1996; Tangney & Dearing, 2002; Woien, Ernst, Patock-Peckham, & Nagoshi, 2003;

Kochanska, Gross, Lin, & Nichols, 2002), therefore the current findings are consistent with prior research yet more research is needed to examine these gender differences further.

A significant gender difference emerged in anonymous prosocial behaviors; as levels of shame-proneness increased in women but not men, there was an associated increase in engagement of anonymous prosocial behaviors. This current finding reflected previous research findings that has indicated that gender differences exist in guilt-proneness, primarily in women in relation to anger control, expectations for future success, and having a greater propensity for shame-proneness (Lutwak, Panish, Ferrari, & Razzino, 2001). These findings were consistent with findings by Chapple, Zieband, and McPherson (2004) who reported that lung cancer patients, particularly younger ones, felt shamed and stigmatized for their illness. Similarly, a study by Jonsdottir and Jonsdottir (2007) found that women living with advanced chronic obstructive pulmonary disease and relapsed into smoking felt more shame than guilt. The current findings suggest that shame-proneness and feelings of shame are negatively associated with positive health outcomes such as anonymous prosocial behaviors, especially among women.

The role of being prone to shame could serve as a protective element in motivating individuals to avoid embarrassing situations and help gain other's approval, especially in public types of prosocial behaviors particularly for men. Shame-proneness was related to agreeing with moral norms pertaining to anonymous prosocial behaviors particularly for women. Gender differences found in moral emotions point towards women being more prone to both shame and guilt (Gross, 1996; Tangney & Dearing, 2002; Woien, Ernst, Patock-Peckham, & Nagoshi, 2003), however, it may be the case

that the men in the current sample are more prone to shame than guilt when it pertains to public prosocial behaviors. Furthermore, consistent with previous research, women in the sample were more prone to shame proneness than men with regards to moral norms pertaining to anonymous prosocial behaviors. It could be speculated that women are more affected by the consequences of shame than men when it happened to be anonymous types of prosocial behaviors that typically include donating to organizations or helping someone without having to be acknowledged.

Limitations

As with any study, there are limitations and concerns that needed to be addressed. First, the correlational design of this study cannot confidently infer direction of causality. The associations found among the variables through various levels of analyses suggested that a relation existed and that exploration was warranted to further explore the relations between moral emotions, TPB components, and health behaviors. It also cannot be inferred that the direction of the relation is unidirectional—there may be bidirectional effects. For instance, to engage in smoking may be influenced by one's intentions and inclination towards guilt or shame. That is, the thought of engaging the activity may be cause conflicting feelings that one's good intentions to avoid smoking could be negated by shame. Examinations of such relations invited to warrant concluding the need for future studies to determine the directionality between these variables.

Second, some measures in the current study had low reliabilities particularly altruistic prosocial behaviors and shame-proneness. While findings invited future research to delve deeper into the possible relation and directionality between the variables shame-proneness, TPB components, and health outcomes, we cannot infer causality or

directionality. For instance, analyses conducted to explore gender differences in the modified path models resulted in two findings that involved shame-proneness. As suggested, there may be other variables within the proposed model influencing this relation. To address these two major limitations, experimental studies and longitudinal studies are needed to further examine possible causal directions among the paths.

A third limitation was based on characteristics of the sample. While student participation was voluntary, it was also independent of their research requirements. The characteristics of the majority of the participants were first year college students resulting in a limited age group who were also well educated and predominantly White women. Furthermore, the participants were primarily nonsmokers and had they been smokers, it was speculated that moral emotions might have been a less important predictor. This was due to the fact that there is an addictive quality about smoking that goes beyond how one thinks or feels that may be influencing smoking behaviors. A few reasons for addiction overriding guilty or shameful feelings regarding smoking may be because the need to satisfy the craving is stronger than feeling bad about smoking itself. Also, along with satisfying the craving, the addiction may lead smokers to prioritize feeling the stress relief or other types of positive effects of smoking before health concerns, bad feelings, or knowledge of its health consequences. Although the sample size was large, it is unlikely that the present findings would have strong generalizability to the general public unless further research is done to examine possible moderating variables such as age and cultural differences.

A fourth limitation was based on age as a possible moderator warranting a need for developmental studies to explore the possible implications age may have on this

proposed integrated model. For example, a large cross-sectional study of several hundred individuals from grades 4-6, 7-11, college adults, and non-college adults using the age appropriate *Test of Self-Conscious Affect* (Tangney, Wagner, & Gramzow, 1989) provided the opportunity to explore possible developmental shifts between guilt and shame and anger-related outcomes and behaviors (Tangney, Wagner, Hill-Barlow, Marschall, & Gramzow, 1996). As past research has suggested, this served to conclude that there is a need to examine age-related differences to better understand the role of moral emotions and health behaviors.

A fifth limitation was based on examining the moderating effects of cultural differences in guilt- and shame-proneness that may alter the hypotheses in the given proposed model. For instance, as discussed under the moralization of health behaviors section, Hinduism considers meat consumption immoral yet in Western culture we pride ourselves in producing the best steaks. Such cultural differences have implications for current and future studies that focus on how health behaviors are viewed. If meat consumption were the health behavior being examined, it is expected that association between intentions to consume meat and actual meat consumption would be quite different between a Hindu and a Westerner. Cultural differences were however beyond the scope of the present study, thus warranting a need for future studies.

Lastly, the sixth limitation involved variable limitations. While moral emotions are not limited to guilt and shame-proneness, the current study focuses on these particular ones based on previous reports (see Tangney, 1990; 1991; 2007). In addition, health behaviors are not limited to smoking and prosocial behaviors. As previously mentioned, if cultural differences were taken into consideration, meat consumption may be included

as a health behavior and conceptualized as a behavior with both positive and negative consequences. Furthermore, previous research has suggested there are many ways to measure and conceptualize health behaviors. For instance, one can measure the frequency of smoking in a given amount of time, the number of cigarettes smoked, and even how the cigarettes were smoked (e.g., half of a cigarette, chain smoking, or finish up to the filter). Thus, it would be important to distinguish between actual behaviors opposed to outcome expectancies.

Future Directions

Assessing the final integrated model with additional moral variables would be interesting. For instance, examining empathy, perspective taking and other health behaviors such as alcohol drinking or sexual behaviors may result in similar hypothesized outcomes given the possible influence that moral emotions and cognitions may have on these behaviors. Moreover, expanding research on the model to include age, culture, and applying developmental and longitudinal studies may help to strengthen the link between moral emotions and health behaviors through the TPB.

One novel aspect of the current study was the hypothesized links between moral emotions and TPB in predicting health behaviors. While several findings from the proposed model did not support the hypotheses, the current work yielded more information to spur more future research in what is a limited area in the scientific arena. Future research could address other additional questions such as: Is being guilt-prone better for your health than being shame-prone? From here, we may be able to answer other questions such as: At what age does an individual become more shame-prone, guilt-prone or both and how does it affect their health? What if this individual grew up in an

Eastern culture? How will intervention programs be modified to account for cultural differences? Ultimately, we may be able to create personality profiles for specific health behaviors based on age, culture, moral emotions and cognitions.

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APPENDIX A

Instructions: Please complete the information below that best describes you.

For each question, please select the answer that best fits you.

1. What is your sex?
 - a. Male
 - b. Female

2. How old are you? _____

3. What year are you in school?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior

4. What is your race/ethnicity?
 - a. White
 - b. Latino/Hispanic
 - c. African American
 - d. Black
 - e. Asian
 - f. Pacific Islander
 - g. Native American
 - h. Other: _____

5. Where do you live?
 - a. Dorm
 - b. Apt/House
 - c. Greek House
 - d. At home with parents
 - e. Apartment with roommates
 - f. Apartment with mother/father
 - g. Other: _____

Instructions: Below are situations that people are likely to encounter in day-to-day life, followed by several common reactions to those situations. As you read each scenario, try to imagine yourself in the situation. Then, indicate how likely you would be to reach to each of the ways described. Please do not skip any items. Rate ALL responses. Rank order them with 1 = most likely, 2 = next likely, and so on.

1. You make plans to meet a friend for lunch. At 5 o'clock, you realize you stood your friend up.

- _____ a. You would think: "I'm inconsiderate."
 _____ b. You would think: "Well, my friend will understand."
 _____ c. You'd think you should make it up to your friend as soon as possible.
 _____ d. You would think: "My boss distracted me just before lunch."

2. You break something at work and then hide it.

- _____ a. You would think: "This is making me anxious. I need to either fix it or get someone else to."
 _____ b. You would think about quitting.
 _____ c. You would think: "A lot of things aren't made very well these days."
 _____ d. You would think: "It was only an accident."

3. You are out with friends one evening, and you are feeling especially witty and attractive. Your best friend's spouse seems to particularly enjoy your company.

- _____ a. You would think: "I should have been aware of what my best friend was feeling."
 _____ b. You would feel happy with your appearance and personality.
 _____ c. You would feel pleased to have made such a good impression.
 _____ d. You would think your best friend should pay attention to his/her spouse.
 _____ e. You would probably avoid eye contact for a long time.

4. At work, you wait until the last minute to plan a project, and it turns out badly.

- _____ a. You would feel incompetent.
 _____ b. You would think: "There are never enough hours in the day."
 _____ c. You would feel: "I deserve to be reprimanded for mismanaging the project."
 _____ d. You would think: "What's done is done."

5. You make a mistake at work and find out a coworker is blamed for the error.

- _____ a. You would think the company did not like the coworker.
 _____ b. You would think: "Life is not fair."
 _____ c. You would keep quiet and avoid the coworker.
 _____ d. You would feel unhappy and eager to correct the situation.

6. For several days you put off making a difficult phone call. At the last minute you make the call and are able to manipulate the conversation so that all goes well.

- a. You would think: "I guess I'm more persuasive than I thought."
- b. You would regret that you put it off.
- c. You would feel like a coward.
- d. You would think: "I did a good job."
- e. You would think you shouldn't have to make calls you feel pressured into.

7. While playing around, you throw a ball and it hits your friend in the face.

- a. You would feel inadequate that you can't even throw a ball.
- b. You would think maybe your friend needs more practice catching.
- c. You would think: "It was just an accident."
- d. You would apologize and make sure your friend feels better.

8. You have recently moved away from your family, and everyone has been very helpful. A few times you needed to borrow money, you paid it back as soon as you could.

- a. You would feel immature.
- b. You would think: "I sure ran into some bad luck."
- c. You would return the favor as quickly as you could.
- d. You would think: "I am a trustworthy person."
- e. You would be proud that you repaid your debts.

9. You are driving down the road, and you hit a small animal.

- a. You would think that the animal shouldn't have been on the road.
- b. You would think: "I'm terrible."
- c. You would feel: "Well, it was an accident."
- d. You'd feel bad you hadn't been more alert driving down the road.

10. You walk out of an exam thinking you did extremely well. Then you find out you did poorly.

- a. You would think: "Well, it's just a test."
- b. You would think: "The instructor doesn't like me."
- c. You would think: "I should have studied harder."
- d. You would feel stupid.

11. You and a group of coworkers worked very hard on a project. Your boss singles you out for a bonus because the project was such a success.

- a. You would feel the boss is rather short-sighted.
- b. You would feel alone and apart from your colleagues.
- c. You would feel your hard work had paid off.
- d. You would feel competent and proud of yourself.
- e. You would feel you should not accept it.

12. While out with a group of friends, you make fun of a friend who's not at the outing.

- _____ a. You would think: "It was all in fun; it's harmless."
 _____ b. You would feel small...like a rat.
 _____ c. You would think that perhaps that friend should have been there to defend him/herself.
 _____ d. You would apologize and talk about that person's good points.

13. You make a big mistake on an important project at work. People were depending on you, and your boss criticizes you.

- _____ a. You would think your boss should have been clearer about what was expected of you.
 _____ b. You would feel like you wanted to hide.
 _____ c. You would think: "I should have recognized the problem and done a better job."
 _____ d. You would think: "Well, nobody's perfect."

14. You volunteer to help with the local Special Olympics for handicapped children. It turns out to be frustrating and time-consuming work. You think seriously about quitting, but then you see how happy the kids are.

- _____ a. You would feel selfish, and you'd think you are basically lazy.
 _____ b. You would feel you were forced into doing something you did not want to do.
 _____ c. You would think: "I should be more concerned about people who are less fortunate."
 _____ d. You would feel great that you had helped others.
 _____ e. You would feel very satisfied with yourself.

15. You are taking care of your friend's dog while your friend is on vacation and the dog runs away.

- _____ a. You would think: "I am irresponsible and incompetent."
 _____ b. You would think your friend must not take very good care of the dog or it wouldn't have run away.
 _____ c. You would vow to be more careful next time.
 _____ d. You would think your friend could just get a new dog.

16. You attend your coworker's housewarming party and you spill red wine on a new cream-colored carpet, but you think no one notices.

- _____ a. You think your coworker should have expected some accidents such as a big party.
 _____ b. You would stay up late to help clean up the stain after the party.
 _____ c. You would wish you were anywhere but the party.
 _____ d. You would wonder why your coworker chose to serve red wine with the new light carpet.

Instructions: These sets of questions measure how prosocial you are in different situations. Below are sentences that may or may not describe you. Please indicate **HOW MUCH EACH STATEMENT DESCRIBES YOU** by using the scale below.

DOES NOT DESCRIBE ME AT ALL	DESCRIBES ME A LITTLE	SOMEWHAT DESCRIBES ME	DESCRIBES ME WELL	DESCRIBES ME GREATLY
1	2	3	4	5

- ___ 1. I can help others best when people are watching me.
- ___ 2. It is most fulfilling to me when I can comfort someone who is very distressed
- ___ 3. When other people are around, it is easier for me to help others in need.
- ___ 4. I think that one of the best things about helping others is that it makes me look good.
- ___ 5. I get the most out of helping others when it is done in front of other people.
- ___ 6. I tend to help people who are in a real crisis or need.
- ___ 7. When people ask me to help them, I don't hesitate.
- ___ 8. I prefer to donate money without anyone knowing.
- ___ 9. I tend to help people who are hurt badly.
- ___ 10. I tend to help needy others most when they do not know who helped them.
- ___ 11. I tend to help others particularly when they are emotionally distressed.
- ___ 12. Helping others when I am in the spotlight is when I work best.
- ___ 13. It is easy for me to help others when they are in a dire situation.
- ___ 14. Most of the time, I help others when they do not know who helped them.
- ___ 15. There should be more recognition of people who give their time and energy for charity work.
- ___ 16. I respond to helping others best when the situation is highly emotional.
- ___ 17. I never hesitate to help others when they ask for it.
- ___ 18. I think that helping others without them knowing is the best type of situation.
- ___ 19. Emotional situations make me want to help others in need.
- ___ 20. One of the best things about doing charity work is that it looks good on my resume.
- ___ 21. I often make anonymous donations because they make me feel good.
- ___ 22. Donating goods or money works best when they are tax-deductible.
- ___ 23. I feel that if I help someone, they should help me in the future.

Instructions: Below are sentences which may or may not describe you regarding smoking behaviors. Please indicate **HOW MUCH EACH STATEMENT DESCRIBES YOU** by using the scale below.

1. My smoking in the next 4 weeks would be							
Unpleasant							Pleasant
1	2	3	4	5	6		7
Useful							Useless
1	2	3	4	5	6		7
Satisfying							Unsatisfying
1	2	3	4	5	6		7
Favorable							Unfavorable
1	2	3	4	5	6		7
Positive							Negative
1	2	3	4	5	6		7
Considerate							Inconsiderate
1	2	3	4	5	6		7
Pointless							Worthwhile
1	2	3	4	5	6		7
Bad							Good
1	2	3	4	5	6		7

Next, please indicate how much each description describes you using the scale ABOVE the question.

Strongly Disagree							Strongly Agree
1	2	3	4	5	6		7
2. If I wanted to, I could smoke in the next 4 weeks.							
No Control							Complete Control
1	2	3	4	5	6		7
3. Overall, how much control do you have whether you smoke in the next 4 weeks?							
Not at all true							Very True
1	2	3	4	5	6		7
4. It is mostly up to me whether I smoke in the next 4 weeks?							

Not Confident At All							Extremely Confident
1	2	3	4	5	6	7	
5. How confident are you that you will be able to smoke in the next 4 weeks?							
Not at all True							Very True
1	2	3	4	5	6	7	
6. Smoking in the next 4 weeks is easy for me to do.							
Strongly Disagree							Strongly Agree
1	2	3	4	5	6	7	
7. I am the kind of person who smokes.							
Very Unlikely							Very Likely
1	2	3	4	5	6	7	
8. I would feel guilty if I did smoke.							
Strongly Disagree							Strongly Agree
1	2	3	4	5	6	7	
9. I believe I have a moral obligation not to smoke.							
Strongly Disagree							Strongly Agree
1	2	3	4	5	6	7	
10. Smoking goes against my principles.							
Definitely Not							Definitely
1	2	3	4	5	6	7	
11. I will smoke in the next 4 weeks.							
Not at All							Very Much
1	2	3	4	5	6	7	
12. I would like to smoke in the next 4 weeks.							
Strongly Disagree							Strongly Agree
1	2	3	4	5	6	7	
13. I do not intend to smoke in the next 4 weeks.							

Strongly Disagree								Strongly Agree
1	2	3	4	5	6			7

14. I intend smoke in the next 4 weeks.

Very Unlikely								Very Likely
1	2	3	4	5	6			7

15. How likely do you think it is that you will smoke in the next 4 weeks?

Not at All								Frequently
1	2	3	4	5	6			7

16. How often during the past 4 weeks have you smoked?

17. How many times during the past 4 weeks have you smoked?

Instructions: Rate the likelihood of each statement that applies to you using the scale below.

Very Unlikely				Likely					Very Likely
0	1	2	3	5	6	7	8		9

- _____ 1. The more I smoke, the more I risk my health.
- _____ 2. Smoking is hazardous to my health.
- _____ 3. By smoking, I risk heart disease and lung cancer.
- _____ 4. The longer I smoke, the harder it will be to quit.
- _____ 5. I will probably die earlier if I continue to smoke.
- _____ 6. Each cigarette I smoke maintains my addiction.
- _____ 7. I will become more dependent on nicotine if I continue smoking.
- _____ 8. Smoking makes me seem less attractive.
- _____ 9. My mouth tastes bad after smoking.
- _____ 10. Smoking will make me cough.
- _____ 11. People think less of me if they see me smoking.
- _____ 12. Smoking irritates my mouth and throat.
- _____ 13. I look ridiculous while smoking.
- _____ 14. Cigarettes make my lungs hurt.
- _____ 15. Cigarettes control me more and more the longer I smoke.
- _____ 16. I become more addicted the more I smoke.
- _____ 17. My throat burns after smoking.

- _____ 12. If I'm feeling irritable, a smoke will help me relax.
 _____ 13. I feel more at ease with other people if I have a cigarette.
 _____ 14. I enjoy parties more when I am smoking.
 _____ 15. Smoking temporarily reduces those repeated urges for cigarettes.

Instructions: Below are possible consequences of smoking. Rate how desirable these consequences are for you using the scale below.

Extremely Undesirable					Desirable						Extremely Desirable
-5	-4	-3	-2	-1	0	1	2	3	4	5	

- _____ 1. The more I smoke, the more I risk my health.
 _____ 2. Smoking is hazardous to my health.
 _____ 3. By smoking, I risk heart disease and lung cancer.
 _____ 4. The longer I smoke, the harder it will be to quit.
 _____ 5. I will probably die earlier if I continue to smoke.
 _____ 6. Each cigarette I smoke maintains my addiction.
 _____ 7. I will become more dependent on nicotine if I continue smoking.
 _____ 8. Smoking makes me seem less attractive.
 _____ 9. My mouth tastes bad after smoking.
 _____ 10. Smoking will make me cough.
 _____ 11. People think less of me if they see me smoking.
 _____ 12. Smoking irritates my mouth and throat.
 _____ 13. I look ridiculous while smoking.
 _____ 14. Cigarettes make my lungs hurt.
 _____ 15. Cigarettes control me more and more the longer I smoke.
 _____ 16. I become more addicted the more I smoke.
 _____ 17. My throat burns after smoking.

Instructions: Below are possible consequences of smoking. Rate how desirable these consequences are for you using the scale below.

Extremely Undesirable					Desirable						Extremely Desirable
-5	-4	-3	-2	-1	0	1	2	3	4	5	

- _____ 1. Smoking helps me control my weight.
 _____ 2. Smoking keeps my weight down.
 _____ 3. Cigarettes keep me from eating more than I should.
 _____ 4. Smoking controls my appetite.
 _____ 5. Cigarettes keep me from overeating.

Instructions: Below are sentences that may or may not describe you regarding engaging in prosocial behaviors such as helping a friend, donating to a charity, listening to a friend in need, etc. Please indicate **HOW MUCH EACH STATEMENT DESCRIBES YOU** by using the scale below.

1. My being prosocial in the next 4 weeks would be

Unpleasant							Pleasant
1	2	3	4	5	6		7
Useful							Useless
1	2	3	4	5	6		7
Satisfying							Unsatisfying
1	2	3	4	5	6		7
Favorable							Unfavorable
1	2	3	4	5	6		7
Positive							Negative
1	2	3	4	5	6		7
Considerate							Inconsiderate
1	2	3	4	5	6		7
Pointless							Worthwhile
1	2	3	4	5	6		7
Bad							Good
1	2	3	4	5	6		7

Next, please indicate how much each description describes you using the scale ABOVE the question.

Strongly Disagree							Strongly Agree
1	2	3	4	5	6		7

2. If I wanted to, I could engage in a prosocial behavior in the next 4 weeks.

No Control							Complete Control
1	2	3	4	5	6		7

3. Overall, how much control do you have whether you are prosocial in the next 4 weeks?

Not at all true							Very True
1	2	3	4	5	6		7

4. It is mostly up to me whether I am prosocial in the next 4 weeks?

- | | | | | | | | |
|----------------------------|--|---|---|---|---|---|------------------------|
| Not
Confident
At All | | | | | | | Extremely
Confident |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 5. How confident are you that you will be prosocial in the next 4 weeks? | | | | | | |
| Not at all
True | | | | | | | Very True |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 6. Engaging in prosocial behaviors in the next 4 weeks is easy for me to do. | | | | | | |
| Strongly
Disagree | | | | | | | Strongly
Agree |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 7. I am the kind of person who engages in prosocial behaviors. | | | | | | |
| Very
Unlikely | | | | | | | Very Likely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 8. I would feel guilty if I did not engage in any prosocial behaviors. | | | | | | |
| Strongly
Disagree | | | | | | | Strongly
Agree |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 9. I believe I have a moral obligation to engage in prosocial behaviors. | | | | | | |
| Strongly
Disagree | | | | | | | Strongly
Agree |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 10. Being prosocial does not go against my principles. | | | | | | |
| Definitely
Not | | | | | | | Definitely |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 11. I will be prosocial in the next 4 weeks. | | | | | | |
| Not at All | | | | | | | Very Much |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 12. I would like to be prosocial in the next 4 weeks. | | | | | | |
| Strongly
Disagree | | | | | | | Strongly
Agree |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| | 13. I do not intend to be prosocial in the next 4 weeks. | | | | | | |

Strongly
Disagree

1

2

3

4

5

6

Strongly
Agree

7

14. I intend to be prosocial in the next 4 weeks.

Very
Unlikely

1

2

3

4

5

6

Very Likely

7

15. How likely do you think it is that you will be prosocial in the next 4 weeks?

16. How often during the past 4 weeks have you engaged in a prosocial behavior?

17. How many times during the past 4 weeks have you engaged in a prosocial behavior?

Appendix B – Figures for Multi-Group Path Analysis

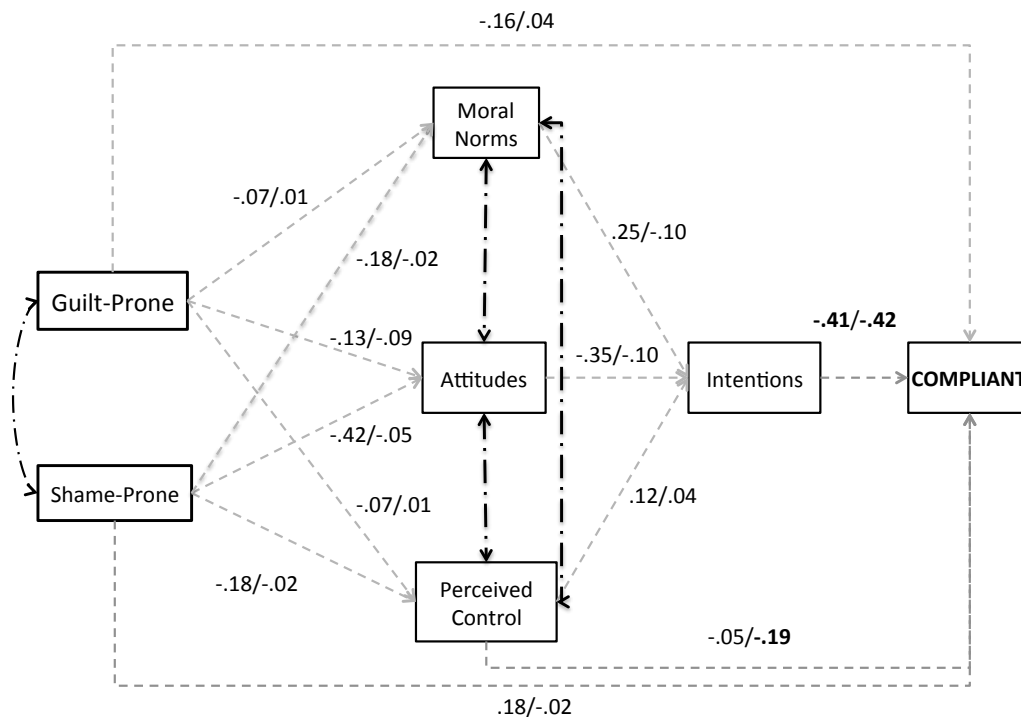


Figure 10. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Compliant Prosocial Behaviors. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- - -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bolded italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

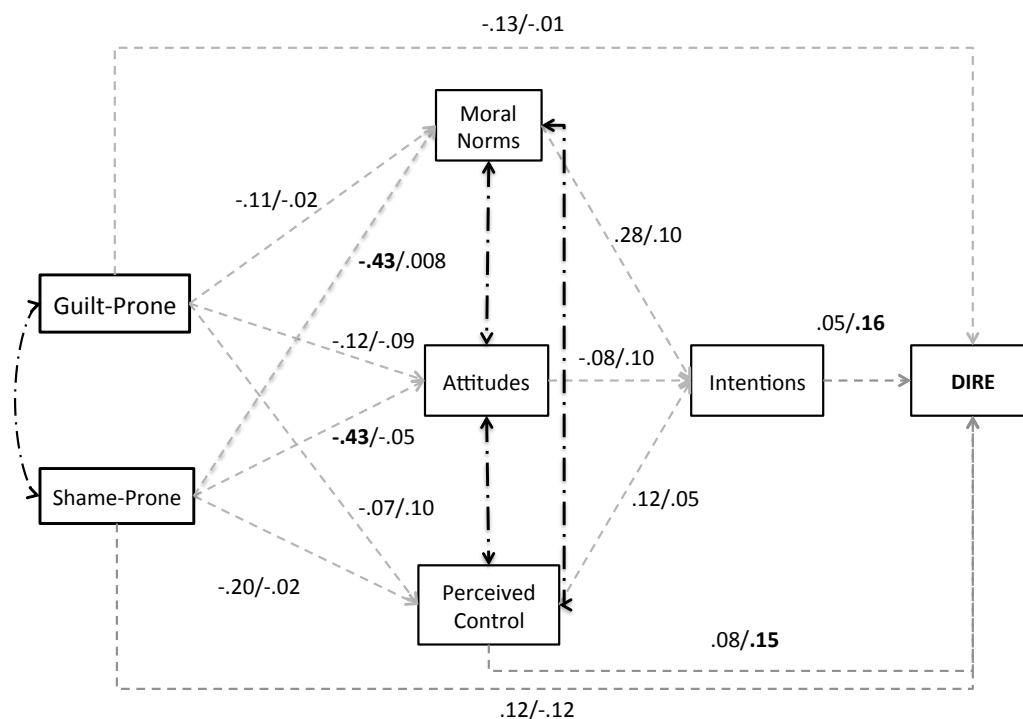


Figure 11. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Dire Prosocial Behaviors. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bolded italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

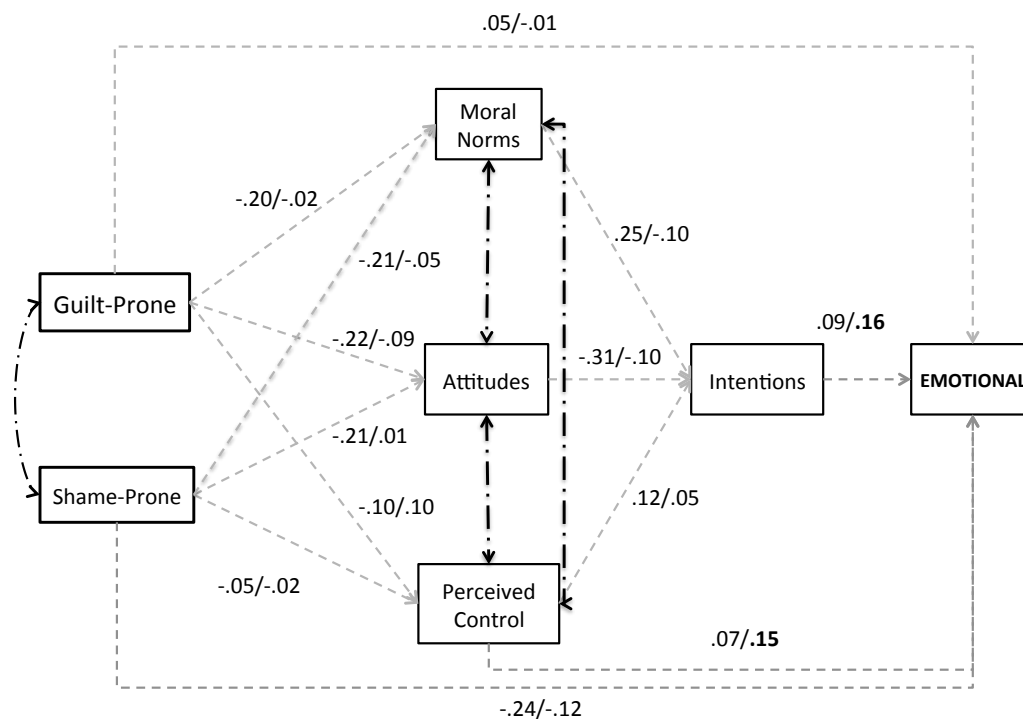


Figure 12. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Emotional Prosocial Behaviors. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- - -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bolded italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

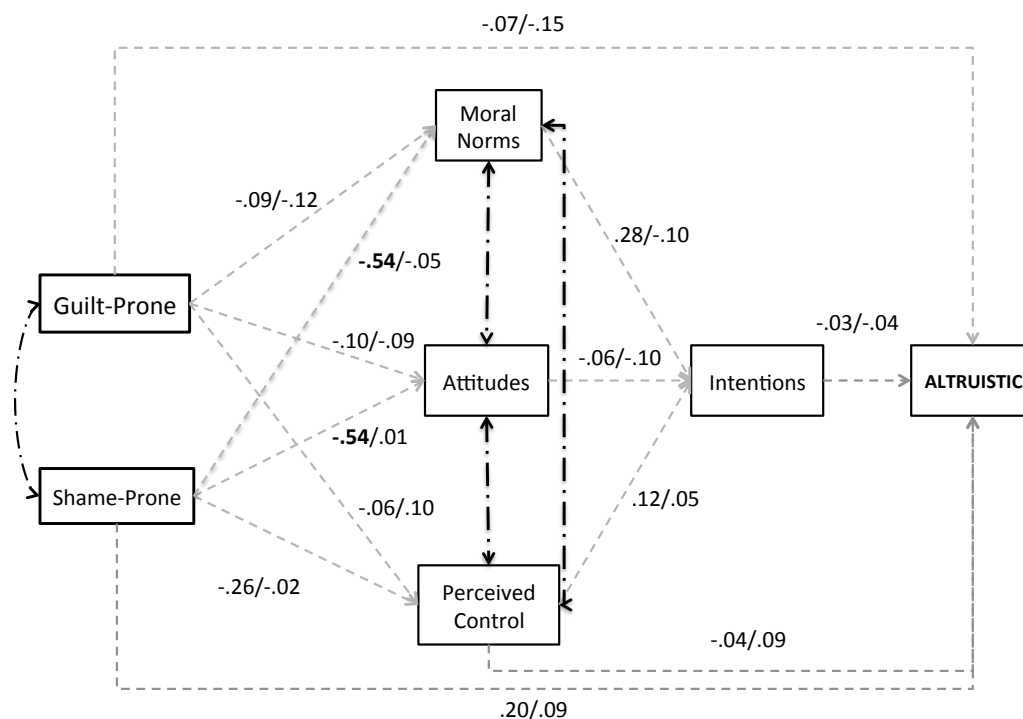


Figure 13. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Altruistic Prosocial Behaviors. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- - -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bolded italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

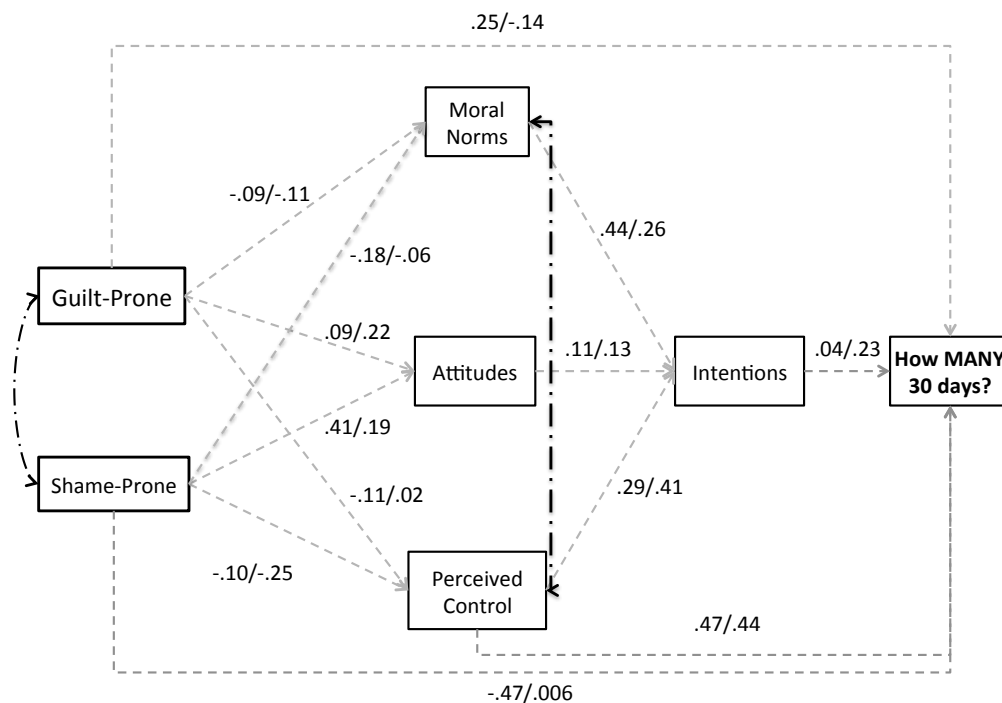


Figure 14. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Number of Cigarettes Smoked in 30 days. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- - -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bold italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

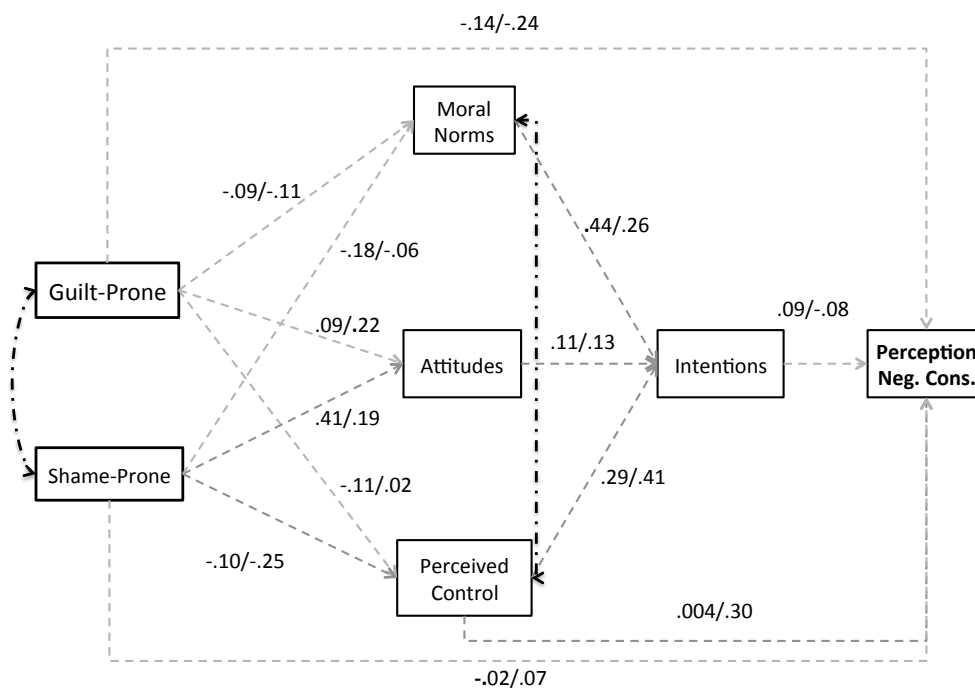


Figure 15. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Perceptions of Negative Consequences from Smoking. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- - -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bold italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

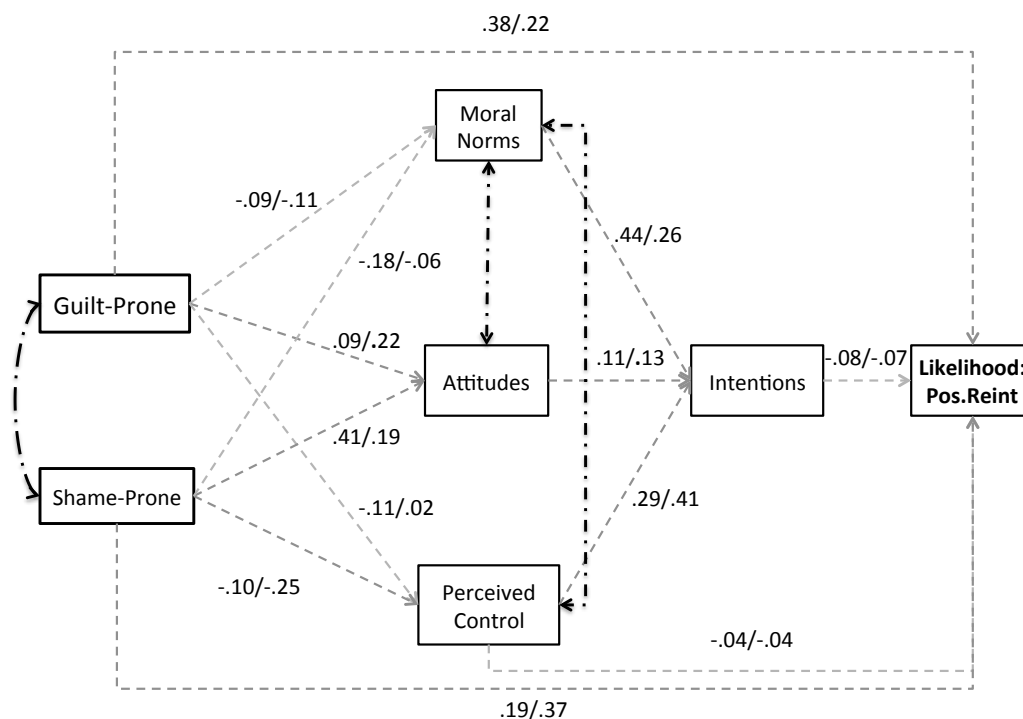


Figure 16. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Likelihood of Positive Reinforcement from Smoking. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (---) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bold italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

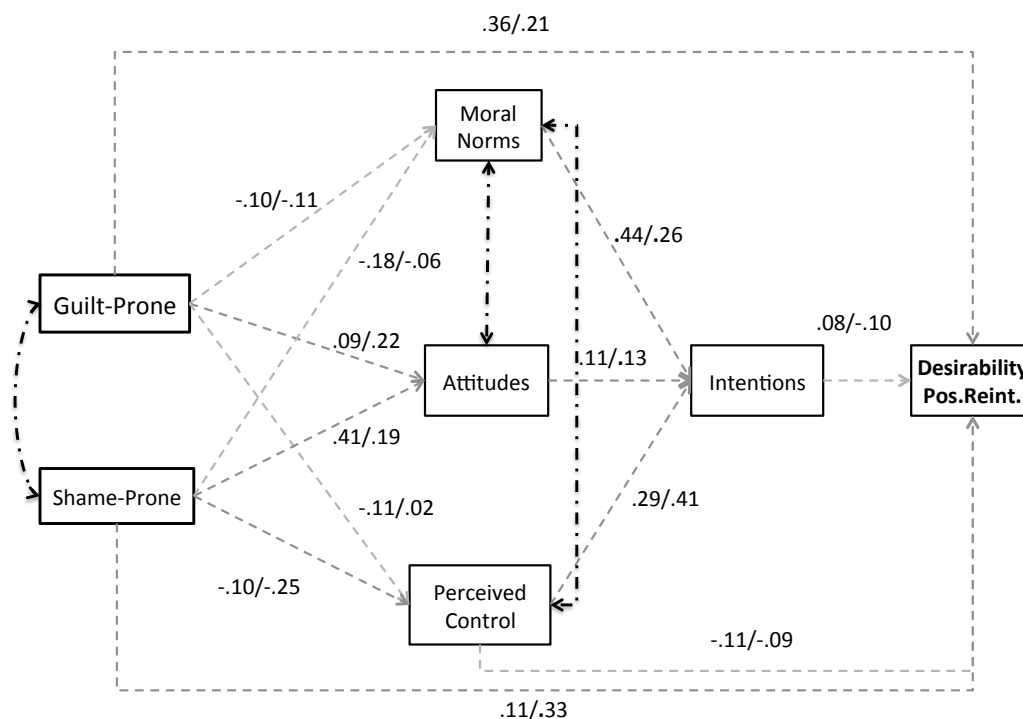


Figure 17. Integrated Theory of Planned Behavior Path Model for Multi-Group Analysis for Desirability of Positive Reinforcement from Smoking. Path coefficient values are standardized (β), values for men on left, values for women on right. Solid black line indicates significant path. Grey dotted (- - -) lines indicate non-significant path. Line-dot-line indicates correlational paths. Bold italicized value indicate significant value for the group, $p < .05$. Bold non-italicized values indicate significant values for both groups, but not significantly different from one another determined by Fisher's Z test with Bonferroni corrections, $p < .0025$.

Appendix C - Analysis for Men and Women

Preliminary Results

Descriptive Statistics.

Examination of outliers, skewness, and kurtosis yielded no evidence of that the assumptions of normality were violated for guilt and shame-proneness, prosocial behaviors, components of the Theory of Planned Behavior, outcome expectancies for smoking, and perceptions of smoking consequences for both men and women. However, the question regarding the number of cigarettes smoked depicted both positive skewness and kurtosis that was corrected by performing a natural log-likelihood transformation.

Prosocial behaviors and TPB components. Descriptive statistics for the study variables are presented in Table 1 for both men and women. Women had higher mean scores compared to men in guilt-proneness, shame-proneness, and across all prosocial behaviors except public prosocial behaviors where men had higher mean scores than women. Both men and women generally had more positive attitudes, agreed with moral norms towards prosocial behaviors, perceived more behavioral control to engage in prosocial behaviors, and had more intentions towards engaging in prosocial behaviors.

Smoking behavior, outcome expectancies, and TPB components. Women smoked less cigarettes in 30 days compared. Women had perceived more negative consequences from smoking compared to men. Men and women in general, did not desire positive reinforcement from smoking. Women had lower mean scores in the likelihood of positive reinforcement from smoking than men. Men on average had less positive attitudes towards smoking than women. Women in general agreed more with moral norms that smoking is “bad” compared to men. Men perceived slightly more behavioral

control than women in choosing to smoke. Moreover, men in general had higher mean scores with intentions to smoke than women.

Table 1

Means (M), Standard Deviations (SD), and Internal Consistencies (α) for Moral Variables, TPB Components Prosocial Behaviors for Men and Women

	Men		Women	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Guilt	3.06	.52	3.25	.39
Shame	2.52	.59	2.66	.49
Public	2.29	.82	2.00	.77
Anonymous	2.95	1.07	3.04	.89
Dire	3.68	.87	3.85	.82
Emotional	3.51	.96	4.00	.72
Compliant	3.83	.90	4.10	.77
Altruistic	3.51	.76	3.64	.75
Attitudes	6.11	1.11	6.49	.97
Norms	5.28	1.16	5.61	1.23
PBC	6.26	.94	6.43	.82
Intentions	5.70	1.20	6.06	1.19
Perceptions	3.45	.78	3.60	.56
How Many	2.78	7.44	1.40	5.13
Likelihood	1.57	2.42	.87	1.80
Desirability	-3.20	2.77	-3.80	2.35
Attitudes	1.95	1.51	1.47	.99
Norms	4.76	1.78	5.60	1.46
PBC	5.02	1.67	4.58	1.66
Intentions	2.57	1.87	1.86	1.59

Men N = 120; Women N = 220. Guilt, shame, public, anonymous, dire, emotional, compliant, and altruistic behaviors were scored on a 1-5 scale. Attitudes, moral norms, perceived behavioral control, and intentions were scored on a 1-7 scale. Smoking behavior is indicated by "How many" which is the number of cigarettes smoked in 30 days; internal consistency reliability for this cannot be calculated. Negative outcome expectancy is measured by perceptions, rated on a 0-4 scale. Positive outcome expectancies: "Likelihood" measures the likelihood of positive reinforcement expected from smoking, rated on a 0-9 scale. "Desirability" measures the desirability of positive reinforcement expected from smoking, rated on a -5 to 5 scale.

Zero-Order Correlational Analysis for Moral Variables, TPB Components, and Health Behaviors

Pearson product-moment correlation coefficient was used to address the relations stated in hypothesis #3, #6-9, and #11 for men and women. It is important to note that all the TPB components testing attitudes, moral norms, PBC, and intentions for prosocial (Table 2a-2b) and smoking health behaviors (Table 3a-3b) were positively correlated with each other.

Hypothesis 3: Each component, that is, norms, attitudes, perceived behavioral control, and intentions would be positively correlated to each prosocial behavior and smoking behavior.

Prosocial behaviors. For men (see Table 2a), correlations between TPB components and the six prosocial behaviors show that moral norms was more correlated to prosocial behaviors, with attitudes being the next variable having the most correlated relations. Perceived behavioral control and intentions were only significantly correlated with compliant prosocial behaviors. Furthermore, the TPB components were not significantly correlated with altruistic behaviors. For women (see Table 2b), moral norms and perceived behavioral control were positively correlated with anonymous, dire, emotional, and compliant prosocial behaviors. Attitudes and perceived behavioral control were positively correlated with dire, emotional, and compliant types of prosocial behaviors.

Smoking Behavior. For men (see Table 3a) attitudes, perceived behavioral control, and intentions were positively correlated with smoking. Moral norms were negatively

correlated with smoking. Similarly, for women (see Table 3b), attitudes, perceived behavioral control, and intentions were positively correlated with smoking.

Hypothesis 6: Higher scores on guilt proneness will be associated with agreeing with moral norms towards engaging in prosocial behaviors and smoking behavior. However, higher scores on shame-proneness will be associated with disagreeing with norms towards engaging in prosocial behaviors and smoking behavior (see Table 2a-2b for prosocial behaviors and Table 3a-3b for smoking behaviors, (a) males, (b) females).

Prosocial behaviors. For men, guilt-proneness and shame-proneness was not significantly correlated with moral norms. Similarly, in the female sample guilt-proneness and shame-proneness was not significantly correlated with moral norms.

Smoking behavior. For men, moral norms were positively correlated with guilt-proneness but were not correlated with shame-proneness. For women, guilt-proneness and shame-proneness were not significantly associated moral norms.

Hypothesis 7: Hypothesis 7: Higher scores on guilt-proneness will be associated with more positive attitudes towards engaging in prosocial behaviors and less positive attitudes towards engaging smoking behavior. However, higher scores on shame-proneness will be associated with less positive attitudes towards engaging smoking behavior and more positive attitudes towards prosocial behaviors. (see Table 2a-2b for prosocial behaviors and Table 3a-3b for smoking behaviors, (a) males, (b) females).

Prosocial behaviors. For men, guilt-proneness was not significantly related to positive attitudes towards engaging in prosocial behaviors. However, shame-proneness

was statistically significant and positive in direction in relation to positive attitudes towards engaging in prosocial behaviors. For the women sample, guilt-proneness and shame-proneness were not significantly related with positive attitudes towards prosocial behaviors.

Smoking Behaviors. For men, guilt-proneness and shame-proneness were significantly related to less positive attitudes towards engaging in smoking. For women, however, guilt and shame-proneness were not statistically significant with less positive attitudes towards smoking.

Hypothesis 8: Higher scores on guilt-proneness will be associated with having more *perceived behavioral control* towards engaging in prosocial behaviors as well as control towards not engaging in smoking. Similarly, higher scores on shame proneness will be associated with having more perceived behavioral control towards engaging in smoking as well as control towards not engaging in prosocial behaviors (see Table 2a-2b for prosocial behaviors and Table 3a-3b for smoking behaviors, (a) males, (b) females).

Prosocial behaviors. For men, guilt-proneness and shame-proneness were not significantly related to perceived behavioral control. Similarly, this relation in women was not statistically significant.

Smoking Behavior. For men, guilt-proneness was not significantly related to perceived behavioral control. However, shame-proneness was found to be statistically significant. Similarly, for women, guilt-proneness was not significantly related to perceived behavioral control but shame-proneness was.

Hypothesis 9: Higher scores on guilt proneness will be associated with more intentions to engage in prosocial behaviors and fewer intentions to engage in smoking. However, higher on shame proneness will be associated with having fewer intentions to engage in prosocial behaviors and more intentions to engage in smoking (see Table 2a-2b for prosocial behaviors and Table 3a-3b for smoking behaviors, (a) males, (b) females).

Prosocial behaviors. For men, the relation between guilt proneness and intentions towards engaging in prosocial behaviors was not statistically significant. Similarly, for females, the relation between guilt-proneness and intentions was not significantly related. However, shame-proneness was found to be significantly related and negative in direction.

Smoking behavior. For men, the relation between guilt-proneness and intentions towards engaging in smoking was not statistically significant. Similarly, shame-proneness and intentions towards smoking was also not statistically significant. The hypothesis was not supported in the men or women sample. For women, the relation between guilt-proneness and intentions towards smoking was not statistically significant. Similarly, the relation between shame-proneness and intentions towards smoking was also not statistically significant.

Table 2a

Zero-Order Correlations for Moral Variables, TPB Components, and Prosocial Behaviors for Men

	1	2	3	4	5	6	7	8	9	10	11	12
1. Guilt		.48**	-.01	.04	.21*	.24**	.29**	.23*	.12	.07	-.04	-.04
2. Shame			-.08	.09	.09	.08	.06	.12	.21*	.10	.01	-.05
3. Public				-.002	.03	.18*	.13	-.56**	.09	.19*	.01	.02
4. Anonymous					.14	.05	.01	-.08	.23*	.29**	.09	.16
5. Dire						.58**	.58**	.03	.23*	.19*	.17	.20*
6. Emotional							.50**	.06	.28**	.24**	.16	.17
7. Compliant								.10	.21*	.21*	.23*	.27*
8. Altruistic									-.04	-.13	.05	.01
9. Attitudes										.37**	.31**	.30**
10. Norms											.48**	.43**
11. PBC												.60**
12. Intentions												

N = 120. ** $p < .001$. * $p < .05$. Attitudes, Moral Norms, Perceived Behavioral Control (PBC), and Intentions are taken from TPB and items were modified accordingly for prosocial behaviors.

Table 2b

Zero-Order Correlations for Moral Variables, TPB Components, and Prosocial Behaviors for Women

	1	2	3	4	5	6	7	8	9	10	11	12
1. Guilt		.42**	.02	.10	.16*	.01	.15*	.04	.002	.06	.07	.02
2. Shame			.03	.15*	-.01	.06	.07	.04	-.05	-.02	-.04	-.18*
3. Public				-.03	.22*	.08	.01	-.48**	.05	.11	.07	.08
4. Anonymous					.28**	.20**	.27**	.10	-.01	.25**	.17*	.09
5. Dire						.44**	.41**	-.11	.23**	.34**	.24**	.23**
6. Emotional							.26**	-.07	.23**	.20**	.21**	.17**
7. Compliant								-.05	.21**	.24**	.24**	.19**
8. Altruistic									-.14*	-.01	.02	-.03
9. Attitudes										.44**	.49**	.43**
10. Norms											.61**	.65**
11. PBC												.62**
12. Intentions												

N = 210. ** $p < .001$. * $p < .05$. Attitudes, Moral Norms, Perceived Behavioral Control (PBC), and Intentions are taken from TPB and items were modified accordingly for prosocial behaviors.

Table 3a

Zero-Order Correlations for Moral Variables, TPB Components, Smoking Behavior, and Outcome Expectancies for Men

	1	2	3	4	5	6	7	8	9	10
1. Guilt		.48**	.26**	.05	-.24**	-.27**	-.30**	.32**	-.10	-.12
2. Shame			.18	.04	-.15	-.14	-.19*	.13	-.20*	-.03
3. Perceptions				-.01	-.20*	-.13	-.30**	.29**	-.14	-.11
4. How many					.61**	.59**	.64**	-.57**	.27**	.60**
5. Likelihood						.86**	.66**	-.58**	.31**	.50**
6. Desirability							.61**	-.55**	.26**	.50**
7. Attitudes								-.62**	.36**	.58**
8. Norms									-.50**	-.63**
9. PBC										.38**
10. Intentions										

N = 120. ** $p < .001$. * $p < .05$. Attitudes, Moral Norms, Perceived Behavioral Control (PBC), and Intentions are taken from TPB and items were modified accordingly for smoking behaviors. Smoking behavior is indicated by “How many” which is the number of cigarettes smoked in 30 days. Negative outcome expectancy is measured by perceptions. Positive outcome expectancies: “Likelihood” measures the likelihood of positive reinforcement expected from smoking. “Desirability” measures the desirability of positive reinforcement expected from smoking.

Table 3b

Zero-Order Correlations for Moral Variables, TPB Components, Smoking Behaviors, and Outcome Expectancies for Women

	1	2	3	4	5	6	7	8	9	10
1. Guilt		.42**	-.06	-.02	-.02	.03	-.09	.12	.05	-.05
2. Shame			-.04	.05	.06	.08	-.01	.03	.14*	.11
3. Perceptions				.06	-.04	-.16*	-.05	.18*	-.04	.09
4. How many					.73**	.55**	.61**	-.48**	.29**	.62**
5. Likelihood						.83**	.68**	-.61**	.36**	.63**
6. Desirability							.56**	-.53**	.35**	.47**
7. Attitudes								-.51**	.29**	.58**
8. Norms									-.40**	-.62**
9. PBC										.36**
10. Intentions										

N = 210. ** $p < .001$. * $p < .05$. Attitudes, Moral Norms, Perceived Behavioral Control (PBC), and Intentions are taken from TPB and items were modified accordingly for smoking behaviors. Smoking behavior is indicated by “How many” which is the number of cigarettes smoked in 30 days. Negative outcome expectancy is measured by perceptions. Positive outcome expectancies: “Likelihood” measures the likelihood of positive reinforcement expected from smoking. “Desirability” measures the desirability of positive reinforcement expected from smoking.

Hypothesis 11: The relations between prosocial behaviors, smoking behavior, and outcome expectancies are hypothesized to have negative correlations to one another in order to demonstrate that they are different types of behaviors (e.g., positive versus negative health behaviors).

The relations presented in Tables 4a and 4b for men and women, respectively, between the six prosocial behaviors and smoking behavior show that for men, compliant prosocial behaviors were negatively correlated with the number of cigarettes smoked. However, public, anonymous, dire, emotional, and altruistic behaviors were not significantly correlated with smoking behavior. For women, dire prosocial behavior was negatively correlated with smoking behavior, but not public, anonymous, emotional, compliant, and altruistic behaviors.

In examining outcome expectancies, for men, negative outcome expectancies measured by perceptions of negative consequences from smoking was positively correlated with emotional and compliant prosocial behaviors, but not public, anonymous, compliant or altruistic behaviors. For women, negative outcome expectancies were positively correlated with emotional prosocial behaviors, but not public, anonymous, dire, compliant, or altruistic behaviors.

In examining positive outcome expectancies, measured by likelihood and desirability of positive reinforcement gained from smoking, for men, this relation was negatively correlated with public prosocial behaviors, but not anonymous, dire, emotional, compliant, or altruistic behaviors. For women, positive outcome expectancies were negatively associated with anonymous, dire, and compliant prosocial behaviors, but not public, emotional, or altruistic behaviors.

In examining desirability of positive reinforcement gained from smoking with prosocial behaviors, for men, this relation was not statistically significant. However, in the women sample, this relation was statistically significant with anonymous and compliant prosocial behaviors, but not public, dire, emotional, or altruistic behaviors.

Table 4a

Zero-Order Correlations for Prosocial Behaviors, Smoking Behaviors, and Outcome Expectancies for Men

	How Many	Health Perceptions	Likelihood	Desirability
Public	.01	.15	-.19*	-.14
Anonymous	-.06	.13	-.12	-.10
Dire	-.16	.26**	-.13	-.09
Emotional	-.10	.33**	-.12	-.03
Compliant	-.20*	.11	-.15	-.13
Altruistic	.02	-.10	.10	.07

N = 120. ** $p < .001$. * $p < .05$. Smoking behavior is indicated by “How many” which is the number of cigarettes smoked in 30 days. Negative outcome expectancy is measured by perceptions. Positive outcome expectancies: “Likelihood” measures the likelihood of positive reinforcement expected from smoking. “Desirability” measures the desirability of positive reinforcement expected from smoking.

Table 4b

Zero-Order Correlations for Prosocial Behaviors, Smoking Behavior, and Outcome Expectancies for Women

	How Many	Health Perceptions	Likelihood	Desirability
Public	-.05	.13	.01	.004
Anonymous	-.13	.13	-.20**	-.14*
Dire	-.20**	.10	-.18**	-.12
Emotional	-.06	.14*	-.08	-.05
Compliant	-.12	.11	-.19**	-.15*
Altruistic	-.01	.09	.004	-.08

N = 210. ** $p < .001$. * $p < .05$. Smoking behavior is indicated by “How many” which is the number of cigarettes smoked in 30 days. Negative outcome expectancy is measured by perceptions. Positive outcome expectancies: “Likelihood” measures the likelihood of positive reinforcement expected from smoking. “Desirability” measures the desirability of positive reinforcement expected from smoking.