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Free to Choose, Free to Dislike: Perceptions of Group Membership as a Choice Mediate the Relationship Between Belief in Free Will and Attitudes Toward Outgroup Members

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FREE TO CHOOSE, FREE TO DISLIKE: PERCEPTIONS OF GROUP MEMBERSHIP AS A
CHOICE MEDIATE THE RELATIONSHIP BETWEEN BELIEF IN FREE WILL AND
ATTITUDES TOWARD OUTGROUP MEMBERS

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ABSTRACT

Across three studies, parts of a mediational model to explain the relationship between belief in free will and attitudes toward certain outgroups were tested. Study 1 tested and found support for the correlational hypothesis that belief in free will would be negatively related to attitudes toward people who identify as homosexual. Study 2 tested and found support for the correlational hypothesis that perception of outgroup membership as a choice would negatively predict attitudes toward those outgroups. Study 3 tested but did not find support for a mediational model. Specifically, it was predicted that the relationship between belief in free will and attitudes toward outgroups would be mediated by the perception that group membership was a choice. This model was predicted for outgroups in which there was some cultural discourse as to whether membership was chosen. Specifically, this mediational model was predicted for homosexuality, obesity, and poverty, but not for Asians or a fictitious group, the Zeb. The manipulation in Study 3 failed to pass a manipulation check limiting the interpretation of the results. Studies 1 and 2, however provide preliminary support for a relationship between the variables of interest (free will belief, perception of group membership as a choice, and attitudes toward outgroups), but no causal claims can be made.

CHAPTER ONE

INTRODUCTION

Nearly all people believe that they have free will, a philosophical construct defined as having control over one's own actions (Nahmias, Morris, Nadelhoffer, & Turner, 2005). In the recent past, many psychologists and philosophers alike have begun to examine the impact of people's belief in free will on thoughts, intentions, and actions. A growing body of literature supports the notion that believing in free will is beneficial for culture (Baumeister, 2008).

Throughout human history group living has been a mainspring of cultural progress. One potential challenge our ancestors faced was deciding which individuals would benefit and which individuals would harm the group. As a result, groups became efficient at making this categorization. Based on an error management perspective (Haselton & Buss, 2000), it was safer for our ancestors to assume that outgroup members posed a threat rather than a benefit. Although occasionally this approach led to missed opportunities to associate with non-threatening outgroup members, groups were able to proceed with members who served the best interest of the group. It was essential that groups were able to quickly and efficiently identify and evaluate characteristics about non-members that may have been detrimental to the group. This tendency to categorize and distinguish outgroup members based on salient characteristics (e.g., skin color; Allport, 1954; Fiske & Neuberg, 1990) may underlie modern manifestations of prejudice toward outgroup members (e.g., Miller, Maner, & Becker, 2010).

In this paper, I attempt to link belief in free will with prejudice. I will argue that holding a belief in free will is related to holding prejudicial attitudes towards outgroup members. Further, I will suggest one possible mechanism for this relationship: the perception that group membership is chosen rather than determined.

Every day, scientists are working to identify cause-and-effect relationships, and sometimes the results from these studies are publicized in mainstream media. People may begin to doubt the existence of free will after repeated exposure to these causally determined study results. Reductions in free will belief have important and powerful behavioral consequences, as have been identified by many recent studies. Vohs and Schooler (2008) found that decreasing people's belief in free will led to increases in cheating behavior. Cheating is quite problematic

for culture, as it disrupts harmonious social behavior by allowing some group members unfair access to resources (Baumeister, 2008). Additionally, Baumeister and colleagues (Baumeister, Masicampo, & DeWall, 2009) found that experimentally reducing participants' free will belief caused increases in socially harmful behavior and decreases in socially beneficial behavior. It appears that experimentally reducing free will belief causes an increase in culturally detrimental behavior and a decrease in culturally beneficial behavior. Taken together, these studies provide powerful evidence for the cultural benefits of a belief in free will.

Other studies have found similar results, suggesting that a free will belief is beneficial for culture. In one set of studies, decreasing free will belief led to increased conformity (Alquist, Ainsworth, & Baumeister, 2013). Although conformity can be beneficial for group harmony, blind conformity can lead people to stop engaging in autonomous thought. Stillman and Baumeister (2010) found that, compared to participants whose free will belief was unaffected or bolstered, those whose free will belief had been reduced were less likely to recycle. Earth has many limited resources. Recycling extends the time that humans can occupy the planet, and as such, is beneficial for human survival. In another set of studies, day laborers' trait levels of free will belief predicted how positively their on-site boss rated their job performance, with higher free will belief predicting better work performance (Stillman, Baumeister, Vohs, Lambert, Fincham, Brewer, 2010). Contributing to the workforce in a productive way is beneficial for culture, as it encourages cooperation and investment in culture. A growing body of literature suggests that a free will belief is related to culturally-beneficial behaviors.

All over in world, in every culture studied, the prevailing societal view is that free will, the ability to control one's own actions, exists (Sarkissian, Chatterjee, De Brigard, Knobe, Nichols, & Sirker, 2010). One could argue that strongly believing in free will is beneficial for culture, as cultures with very little belief in free will died out, but cultures with a strong free will belief survived. A belief in free will is essential for culture because it allows for people to be held accountable for their bad actions. Many philosophers believe moral responsibility depends on free will in the sense of being able to choose one course of action from another (Fischer, 2005). A culture without this notion of moral responsibility would become anarchic and ultimately fail, as people would give into selfish temptations with no regard for others. Although this paper remains agnostic as to whether free will actually exists, it will work from the premise that a belief in free will is generally beneficial for the perpetuation of culture.

It has been argued that a belief in free will is beneficial for culture (Baumeister, 2008). Likewise, in modern culture, interacting with different outgroups is also beneficial, as these interactions help spread ideas from group to group. However, there was a time in our ancestral past when interacting with outgroups was potentially harmful (it can still be dangerous and potentially harmful to interact with some groups today, but markedly less so relative to ancestral times). Before humans could easily communicate with outgroups, there was little way of knowing whether the approaching tribes consisted of people who were friends or foes. Therefore, from an error management perspective (Haselton & Buss, 2000), it made adaptive sense to assume that outgroup members could be dangerous, threatening the safety of one's ingroup. It is possible that these types of errors persist in culture today as archaic, vestigial social processes manifesting themselves as prejudice. Although no direct harm to culture may result, holding negative attitudes toward members of certain outgroups might decrease the likelihood of having any positive interactions with people from that outgroup. Because of this, the flow of ideas from one group to the next would be impeded. Groups with viable solutions to cultural issues may not be able to share these ideas, because they do not communicate in a harmonious way with people of other groups. As a result, ideas are not spread throughout culture, halting (or at least slowing) cultural progress. If people did not hold negative attitudes toward outgroups, cultural progress could be more efficient and effective.

In many cases today, groups are not communicating effectively with each other, therefore slowing the transmission of ideas. Because these groups are not engaging in positive interactions, stereotypes about outgroup members are perpetuated, further lessening the chances of positive interactions in the future. In the United States, for example, prejudice manifests itself in a variety of domains. In most states, it is against the law to act violently toward another person because he or she identifies as a homosexual. Obese people are less likely to be hired than their normal weight counterparts and are less likely to be promoted (Puhl & Brownell, 2006). Actions like these, based at least in part on prejudicial attitudes toward a group of people, may be related to one's free will belief. Perhaps people believe that membership in some groups is chosen (e.g., people who are homosexual, people who are obese) rather than determined (e.g. people who are white, people who are tall), and this perception plays a role in the extent to which they hold positive attitudes about members of that group. Following from this, perhaps people who believe strongly in free will hold less positive attitudes toward people who identify as homosexual or

people who are obese relative to those who believe less strongly in free will. This may be because they perceive membership in these groups to be chosen rather than determined. Perhaps these groups are unique in that membership in these outgroups may pose a perceived threat to the ingroup, an idea discussed in more detail below. I propose that people who have a strong free will belief will hold negative attitudes toward groups in which membership is perceived to be chosen (and perhaps perceived to be threatening), and that this relationship is mediated by the perception that group membership is a choice.

Free Will Belief and Choice

Part of the philosophical debate about the existence of free will revolves around the extent to which humans have the ability to make decisions. Philosophers define *choice* as selecting a course of action from a set of possible alternatives, and for most laypeople, this notion of choice relies on a belief in free will (Monroe & Malle, 2010). Those who believe in determinism argue that, although people may feel as though they make choices, they are not actually doing so. Compatibilists, however, believe that actions can be both caused and free. When considering both of these philosophical differences, it becomes clear that people who hold differing beliefs about free will also hold differing beliefs about human's ability to select a course of action from a set of possible alternatives. Therefore, if belief in free will were temporarily reduced, people's judgments of the extent to which joining a group is based on choice should be reduced as well. Specifically, if a disbelief in free will is induced, people should be less likely to assert that people choose to be homosexual, obese, or poor. I propose that decreasing free will belief will decrease people's perceptions that they are free to make choices. I predict that reducing free will belief, as opposed to bolstering it, will decrease people's perceptions about the extent to which membership to certain groups is chosen.

Choice and Positive Attitudes

One component of prejudice is that people tend to hold less positive attitudes towards members of outgroups. This effect is likely exacerbated when people believe that outgroup membership is chosen rather than determined. Specifically, I predict that people who have their free will belief reduced, compared to those whose free will belief has been bolstered, should express more positive attitudes toward people who are homosexual, obese, and poor.

Outgroup Membership as a Choice

In humans' evolutionary past, it may have been beneficial to judge outgroup members harshly, as hostile outgroup members could be one of the most deadly threats to one's survival (Baer & McEachron, 1982; Miller, Maner, & Becker, 2010). As such, there may have been some evolutionary advantages to holding negative attitudes toward outgroup members. In today's cultural climate, however, negative attitudes toward some outgroups might not be particularly useful, as many groups today pose little or no physical or psychological threat. Even for those outgroups that do pose a threat, social norms now exist to reduce prejudice and promote tolerance and harmony. Further, laws, which stem from culture, are enacted in many places to prevent discrimination (i.e., in work contexts).

People's attitudes toward social policies that support rights for homosexual people depend in part on whether these people think that homosexuality is a choice. Lewis (2009) found that people are more supportive of gay rights when they believe that homosexuality is innate rather than chosen. Further, Haider-Markel and Joslyn (2008) found that people hold more positive attitudes toward homosexuals and are more supportive of homosexual civil rights (including support for civil unions and same-sex marriage) when they believe that homosexuality is not controllable (stemming from biology or genetics) rather than controllable (stemming from environmental learning or choice). Together, these findings suggest a strong positive link between perceptions that homosexuality is innate and attitudes toward people who identify as homosexual.

In this paper I argue that belief in free will is negatively related to positive attitudes toward members of specific outgroups (homosexual, obese, and poor), because membership in these groups is sometimes considered to be chosen and/or threatening. Believing in free will allows people to hold others morally responsible for their actions (Brewer & Baumeister, 2010). This is beneficial for restoring a sense of justice after an antisocial act (e.g. sentencing a convicted murderer to death by lethal injection) or rewarding someone for their prosocial gestures (e.g. a parade given in honor of returning soldiers). Many people who believe in free will believe that others can and should be held morally responsible for their actions, as many believe that the existence of free will is a necessary precondition for moral responsibility (Fischer, 2005). For this reason, people are held accountable for their choices, including such choices as becoming a member of a certain group (e.g., hate groups, terrorist organizations, etc.).

For some groups (race, sex, natural hair color, etc.), membership is determined entirely by genes. For other groups (religion, education level, political affiliation, etc.), membership is based at least in part on choice. Whether group membership is based on some predetermined factor or the result of choice is, to a certain extent, ambiguous in the minds of some perceivers. Although the prevailing scientific view of homosexuality is that it is biologically based (LeVay, 1991; Bailey & Pillard, 1991; Hamer, Hu, Magnuson, Hu, & Pattatucci, 1993), many people maintain the belief that homosexuality is a choice. Likewise, many people believe that being obese is the result of a deliberate choice to eat unhealthy food and to refrain from strenuous activity, whereas the scientific community finds ample support for the notion that body weight is determined by a complex interaction of biological, genetic, and behavioral factors (Reed, Lawler, & Tordoff, 2008). Additionally, some people think that those in poverty are making a choice to be poor by not actively seeking to increase their economic status (Herring, 2012; Nugent, 2011). Many economists, however, recognize that there are environmental pressures that oppress the poor, limiting their ability to rise above their circumstances (Lipton, 1977). Perhaps people's attitudes, particularly negative ones, toward members of these groups are related to the extent to which they believe that membership is based on choice rather than genetic, biological, or environmental factors.

Outgroup Membership as a Threat

Historically, people were cautious of outgroups because of the lack of certainty as to whether these outsiders posed a threat. The most conservative approach, according to error management theory (Haselton & Buss, 2000), was to assume that outgroups did pose a threat, intent on causing physical harm. In today's society, we have social norms against physically harming others, though physical harm still persists. However, some outgroups may pose a psychological threat, in that they have access to ideas or intellect that one's own group may not possess. As such, it is possible that perception of outgroups as threatening is mediating the negative relationship between belief in free will and positive attitudes toward members of specific outgroups. This mediational hypothesis is an extension of the predicted hypothesis that perception of group membership as a choice mediates this relationship.

Overview of Current Research

In this paper I will present research on three studies testing the relationships between free will belief (both measured and manipulated), perception of outgroup membership as the result of choice, and positive attitudes toward outgroup members. The relationship between trait free will belief and attitudes toward members of a specific outgroup was tested (Study 1). In Study 2, the relationship between perception of outgroup membership as a choice and attitudes toward homosexuals was tested (study 2). In Study 3, several mediational models were tested. It was predicted that perception of outgroup membership as a choice would mediate the relationship between manipulated belief in free will and positive attitudes toward outgroup members. Specifically, it was predicted that decreasing free will belief would decrease perceptions that outgroup membership status is the result of choice, which would in turn increase positive attitudes toward these outgroup members.

CHAPTER TWO

STUDY 1

Study 1 was an initial test of the direct effect of trait free will belief on attitudes toward outgroup members, specifically those who identify as homosexuals. It was hypothesized that trait free will belief would be negatively related to attitudes toward people who identify as homosexual, a group for which some people perceive that members choose, rather than are determined, to join. Participants completed two questionnaires, the Free Will and Determinism Plus Scale (FAD+; Paulhus & Carey, 2011) and the Attitudes toward Homosexuality Scale (ATH; LaMar & Kite, 1998). A negative correlation would indicate that the more people believe in free will, the less positive their attitudes are about people who identify as homosexual.

Method

Participants

One-hundred and three people were recruited for this study using Mechanical Turk. Participants were paid \$0.15 for their time.

Measures

Participants completed the Free Will and Determinism Plus (FAD+) Scale (Paulhus & Carey, 2011). This scale consisted of four subscales that measured participants' belief in free will ($\alpha=.53$), scientific causation ($\alpha=.56$), fatalistic determinism ($\alpha=.81$), and unpredictability ($\alpha=.68$). Although some of the alphas for these subscales are particularly low, this scale is the standard scale used in free will belief research. For this study, only the free will belief subscale was used. Using a 1 (disagree) to 5 (agree) scale, participants rated the extent to which they agreed with each of 27 items. Sample items from the free will subscale include "people can overcome any obstacles if they truly want to" and "people are always at fault for their bad behavior."

Participants also completed the Attitudes toward Homosexuality (ATH) Scale (LaMar & Kite, 1998). This scale consisted of two subscales that measured participants' tolerance toward people who identify as homosexual ($\alpha=.92$) as well as participants' feelings about whether homosexuality is a moral act ($\alpha=.92$). Reported alphas for both subscales were for the present study and were particularly high. Using a 1 (disagree) to 5 (agree) scale, participants rated the

extent to which they agreed with each of 21 items (11 items as part of the tolerance subscale and 10 items as part of the morality subscale). The tolerance subscale contained items such as “job discrimination against lesbians and gay men is wrong” and “lesbians and gay men should be allowed to serve in the military.” The morality subscale contained items such as “many lesbians and gay men are very moral and ethical people” and “lesbian and gay men do need psychological treatment” (reverse scored).

Design and Procedure

Participants first completed the FAD+ Scale, which measured participants’ belief in free will, scientific causation, fatalistic determinism, and unpredictability. Of particular interest in this study were participants’ scores on the free will belief subscale of the FAD+. Participants also completed the ATH Scale to assess both their tolerance toward people who identify as homosexual and their feelings about the extent to which homosexuality is a moral act. Lastly, participants completed demographic information.

Results and Discussion

The free will subscale of the FAD+ ($\alpha=.53$) was negatively correlated with both the tolerance subscale, $r(103) = -.24, p = .01$ and the morality subscale, $r(103) = -.22, p = .02$. Relative to those who did not have a strong belief in free will, those participants who believed in free will were less tolerant of people who identify as homosexual. Additionally, those people who held a strong belief in free will thought that people who identified as homosexual were less moral, relative to those who did not believe strongly in free will. This finding provides evidence that there is a relationship between people’s beliefs about free will and their attitudes about other people who may (or may not) have chosen to be part of an outgroup. Although these data provide evidence that a negative relationship between free will belief and positive attitudes about homosexuals exist, they do not provide a causal explanation about the relationship between these variables. Study 2 aims to test a proposed mediator of this relationship, specifically that people’s perception about the extent to which one’s membership in certain outgroups - namely homosexuals, the obese, and the poor - is the result of a choice.

CHAPTER THREE

STUDY 2

Study 2 was designed to test the hypothesis that the perception of group membership as a choice is related to attitudes toward members of that group. Specifically, this study examined the relationship between perceptions of the extent to which being gay, obese, and poor is a choice and overall positive attitudes toward members of each of these groups. It was predicted that the more participants thought that being gay, obese, and poor were choices, the less positive their attitudes would be about people who are gay, obese, and poor. This may be because membership in these particular groups is perceived as a physical or psychological threat. Participants rated the extent to which they believed being gay, obese, and poor were choices on a Likert-type scale. Additionally, participants completed the Attitudes toward Homosexuals (ATH) scale (LaMar & Kite, 1998), the Attitudes toward Obese Persons (ATOP) scale (Allison, Basile, & Yuker, 1991), and the Attitudes toward the Poor (ATTP) scale (Livingston, 1970) to measure attitudes toward each of these three different outgroups. A negative correlation between the “being gay is a choice” item and the ATH scale would indicate that the more people believe that being gay is a choice, the less positive their attitudes are about people who identify as homosexual. Likewise, a negative correlation between the “being obese is a choice” item and the ATOP scale would indicate that the more people believe that being obese is a choice, the less positive their attitudes are about people who are obese. Additionally, a negative correlation between the “being poor is a choice” item and the ATTP scale would indicate that the more people believe that being poor is a choice, the less positive their attitudes are about people who identify as homosexual.

Method

Participants

Forty-six participants were recruited for this study using Mechanical Turk. One participant was excluded for not following directions. Analyses for Study 2 include only the remaining 45 participants. Participants were paid \$0.15 for their time.

Measures

Participants completed the ATH Scale (used in Study 1), the Attitudes toward Obese Persons (ATOP) Scale (Allison, Basile, & Yuker, 1991), and the Attitudes toward the Poor (ATTP) Scale (Livingston, 1970). For this study, subscores for the tolerance ($\alpha=.92$) and morality ($\alpha=.94$) dimensions were used as well as a composite measure assessing overall attitudes toward homosexuality ($\alpha=.96$).

The ATOP Scale ($\alpha=.85$) consists of 20 items, 13 of which are reverse scored. Using a 1 (disagree) to 5 (agree) scale, participants rated the extent to which they agreed with items such as “obese people are as happy as nonobese people” and “most obese people feel that they are not as good as other people” (reverse scored). Although this measure is titled *Attitudes* toward Obese Persons Scale, the items actually do not measure attitudes. Rather, they measure perceptions about how people who are obese might feel. The ATTP Scale ($\alpha=.59$) consisted of 10 items assessing attitudes toward the poor. Using a 1 (disagree) to 5 (agree) scale, participants rated the extent to which they agreed with items such as “being on welfare is nothing to be ashamed of” and “if a family is poor it usually means that they are lazy” (reverse scored).

Design and Procedure

Participants first completed a questionnaire assessing participants’ perception of the extent to which a variety of things are the result of choice (e.g., being athletic, pregnant, outgoing, smart, American). Embedded within this questionnaire were the three questions relevant to this investigation, specifically, questions assessing perception of homosexuality, obesity, and poverty as choices. Participants also completed the ATH, ATOP, and ATTP scales in random order. The ATH scale assessed tolerance toward people who identify as homosexual, feelings about the extent to which homosexuality is a moral act, and an overall evaluation of the extent to which they held positive attitudes about people who identify as homosexual. The ATOP scale assessed the extent to which participants held positive attitudes about people who are obese. The ATTP assessed the extent to which participants held positive attitudes about people who are poor. Participants also completed other questionnaires not relevant to this investigation. Lastly, participants completed demographic information.

Results and Discussion

Attitudes toward people who are homosexual

Participants' perception of the extent to which homosexuality is a choice was negatively correlated with overall positive attitudes toward people who identify as homosexual, $r(45) = -.75$, $p < .000$, as measured by the ATH. Additionally, participants' perception of the extent to which homosexuality is a choice was negatively correlated with both the tolerance subscale, $r(45) = -.67$, $p < .000$ and the morality subscale, $r(45) = -.79$, $p < .000$ of the ATH. Relative to those who did perceive homosexuality to be a choice, those participants who did not perceive homosexuality to be a choice held more positive attitudes of people who identified as homosexual. This finding provides evidence that there is a relationship between people's perception about the extent to which identifying as homosexual is a choice and their attitudes about other people who identify as homosexual.

Attitudes toward people who are obese

Participants' perception of the extent to which being obese is a choice was negatively correlated with overall positive attitudes toward people who are obese, $r(45) = -.35$, $p = .02$, as measured by the ATOP. This finding provides evidence that there is a relationship between people's perception about the extent to which being obese is a choice and their feelings about people who are obese.

Attitudes toward people who are poor

Participants' perception of the extent to which being poor is a choice was negatively correlated with overall positive attitudes toward people who are poor, $r(45) = -.52$, $p < .000$, as measured by the ATTP. This finding provides evidence that there is a relationship between people's perception about the extent to which being poor is a choice and their attitudes about other people who are poor.

Together, the results from Studies 1 and 2 support the hypothesis proposed for Study 3, specifically that perception of choice mediates the relationship between belief in free will and attitudes about specific outgroup members, namely homosexuals, the obese, and the poor. Results from Study 1 establish a relationship between belief in free will (the independent variable) and attitudes toward specific outgroup members (the dependent variable). Results from Study 2 establish a relationship between perception of outgroup membership status as a choice

(the proposed mediator) and attitudes toward specific outgroup members (the dependent variable). Study 3 aims to test this proposed mediation experimentally.

CHAPTER FOUR

STUDY 3

Study 2 found that perception of outgroup membership as a choice predicted negative attitudes toward outgroup members. This result furthers those from Study 1, finding that trait free will belief predicted negative attitudes toward outgroup members. Study 3 built on both of these findings by testing a mediational model in which perception of outgroup membership as a choice mediates the relationship between free will belief and positive attitudes toward outgroup members.

Study 3 was intended to test the effect of free will belief on positive attitudes toward people in five different outgroups: those who identify as homosexual, those who are obese, those who are poor, those who are Asian, and those who are members of a fictitious ethnic group, the Zeb. Specifically, it was proposed that for the former three groups – those who identify as homosexual, those who are obese, and those who are poor – experimentally reduced free will belief would cause more positive attitudes toward these three groups of people than would free will belief that has been experimentally bolstered. The proposed mechanism for this relationship was the perception that membership in these groups is a choice. Additionally, I tested whether perception of these outgroups as threatening mediates this relationship, as it is possible that the act of choosing to join an outgroup is seen as a threat itself. A mediational model was proposed such that reduction in free will belief would cause decreases in the perception that membership in each of these three groups is a choice, which would either increase positive attitudes or decrease negative attitudes toward people in each of these groups. This mediation was not predicted for those who are Asian and those who are Zeb. This was because some people believe that identifying as homosexual, being obese, and being poor are choices that people make, whereas being Asian and Zeb, racial and ethnic groups respectively, are not likely the result of an individual's choice.

Additionally, it was possible that perception of outgroups as threats mediates the relationship between free will belief and attitudes toward outgroups. This study also aimed to test this alternative hypothesis. In addition to measuring perception of outgroup membership as a choice, perception of outgroup membership as a threat was also tested.

Further, it was possible that responses on some questions could influence responses on other questions. Specifically, asserting one's attitudes about outgroups initially could affect the extent to which one thinks that outgroup membership is a choice at a future time, or vice versa. If people indicated that they did not hold strong positive attitudes toward an outgroup, they may feel compelled to generate a reason for their dislike. Because society has norms against prejudice toward these groups, stating an inherent dislike for any group may feel social inappropriate. Rather, people may feel as though they should attribute their dislike of the outgroup to something that the outgroup has done, thus blaming their negative attitudes on the group members rather than their own inherent dislike. In this case, declaring that membership in that outgroup was a choice places the blame for dislike on the outgroup rather than the participant. For this reason, it is possible that the order in which the mediator and dependent were assessed may influence participants' responses. Study 3 was designed to rule out these order effects.

Method

Participants

The original sample consisted of 64 undergraduate students (27 females) who earned either partial course credit or \$10 for their participation. Nine students failed an attention check question (i.e., "If you read the instructions, please select answer choice 3"), which left 55 participants (25 female) whose data are reported below.

Design and Procedure

After providing informed consent, participants were told that their experimental session would consist of two unrelated studies. The first study, ostensibly measuring reading comprehension, required participants to read, think about, and rephrase ten sentences. This served as the primary experimental manipulation. The ostensible second study purportedly assessed participants' beliefs about a variety of topics. Specifically, this part of the experiment measured participants' beliefs that being each homosexual, obese, poor, Asian, and a member of the Zeb, a fictitious group of people (see Appendix H for Zeb description), are choices. This part of the experiment also assessed attitudes toward people who are homosexual, obese, poor, and Asian and Zeb.

For the ostensible first study, participants were randomly assigned to either the free will belief bolster condition or the free will belief reduction condition (Alquist et al., 2013). All

participants viewed ten sentences presented one at a time on a computer screen. For each sentence, participants were asked to read and think about the meaning of the sentence for 30 seconds, after which the computer automatically asked the participant to rewrite the sentence without altering the meaning. This task corroborated the cover story that the first study ostensibly measured reading comprehension. Although all participants completed this rephrasing task, the sentences that participants were asked to rephrase differed. In the free will bolstering condition, participants read and rephrased sentences that endorsed a free will belief (see Appendix C for full list of sentences). In the free will reduction condition, participants read and rephrased sentences that denied the existence of free will (see Appendix C for full list of sentences).

After completing the sentence rephrasing task, participants were told that they would begin the ostensibly second, unrelated study that assessed beliefs of FSU students. As a manipulation check, participants first completed the FAD+ Scale (Paulhus & Carey, 2011; see Appendix D), which assessed beliefs about free will, scientific causation, fatalistic determinism, and unpredictability. Participants were asked to indicate the extent to which they agreed with items on the FAD+ Scale using a Likert-type scale ranging from 1 (*totally disagree*) to 5 (*totally agree*).

In this ostensible second study, participants rated their attitudes toward each of five outgroups: people who identify as homosexual, people who are obese, people who are poor, people who are Asian, and people who are Zeb. Attitudes toward people who identify as homosexual were assessed with the Attitudes toward Homosexuality Scale (ATH; LaMar & Kite, 1998; See Appendix E). Attitudes toward people who are obese were assessed with the Attitudes toward Obese Persons Scale (ATOP; Allison, Basile, & Yuker, 1991; See Appendix F). Attitudes toward people who are poor were assessed by modifying the ATOP scale to reflect attitudes toward people who are poor (ATtP-R; See Appendix I). To assess attitudes toward Asians and attitudes toward Zeb, the Attitudes toward Blacks Scale (ATB; Plant & Devine, 1998) was modified to reflect attitudes toward Asians (ATA Scale; See Appendix J) and Zeb (ATZ Scale; See Appendix K), respectively. To reduce order effects, these five scales were presented to participants in random order.

Imbedded within the above questionnaires was an item to assess attention. This item was programmed to appear randomly between the questionnaires assessing attitudes toward outgroup

members. Specifically, participants were asked to select answer option “3” if they acknowledged reading the directions. The data from participants who did not indicate answer option “3” were excluded from final analyses.

To assess the perception that homosexuality is a choice, participants were asked to indicate the extent to which they thought homosexuality is a choice on a scale from 1 (*not at all a choice*) to 10 (*very much a choice*). Additionally, participants were asked to rate the extent to which they agreed with two choice-related statements about homosexuality (“Homosexuality is something people choose for themselves” and “Homosexuality is something over which people do not have any control,” reverse-scored; Vilathong T., Linder, & Nosek, 2010) on a scale from 1 (*totally disagree*) to 10 (*totally agree*). These three items were averaged to compute a single measure of perception of homosexuality as a choice.

To assess the perception that obesity is a choice, participants were asked to indicate the extent to which they thought obesity is a choice on a scale from 1 (*not at all a choice*) to 10 (*very much a choice*). Additionally, participants were asked to rate the extent to which they agreed with two choice-related statements about obesity (“Obesity is the result of choices people make” and “Obesity is something over which people do not have any control,” reverse-scored; adapted from Vilathong T., Linder, & Nosek, 2010) on a scale from 1 (*totally disagree*) to 10 (*totally agree*). These three items were averaged to compute a single measure of perception of obesity as a choice.

To assess the perception that being poor is a choice, participants were asked to indicate the extent to which they thought being poor is a choice on a scale from 1 (not at all a choice) to 10 (very much a choice). Additionally, participants were asked to rate the extent to which they agreed with two choice-related statements about poverty (“Poverty is the result of choices people make” and “Poverty is something over which people do not have any control,” reverse-scored; adapted from Vilathong T., Linder, & Nosek, 2010) on a scale from 1 (totally disagree) to 10 (totally agree). These three items were averaged to compute a single measure of perception of poverty as a choice.

To assess the perception that being Asian is a choice, participants were asked to indicate the extent to which they thought being Asian is a choice on a scale from 1 (not at all a choice) to 10 (very much a choice). Additionally, participants were asked to rate the extent to which they agreed with two choice-related statements about being Asian (“Being Asian is the result of

choices people make” and “Being Asian is something over which people do not have any control,” reverse-scored; adapted from Vilathong T., Linder, & Nosek, 2010) on a scale from 1 (totally disagree) to 10 (totally agree). These three items were averaged to compute a single measure of perception of being Asian as a choice.

To assess the perception that being Zeb is a choice, participants were asked to indicate the extent to which they thought being Zeb is a choice on a scale from 1 (not at all a choice) to 10 (very much a choice). Additionally, participants were asked to rate the extent to which they agreed with two choice-related statements about being Zeb (“Being Zeb is the result of choices people make” and “Being Zeb is something over which people do not have any control,” reverse-scored; adapted from Vilathong T., Linder, & Nosek, 2010) on a scale from 1 (totally disagree) to 10 (totally agree). These three items were averaged to compute a single measure of perception of being Zeb as a choice.

To reduce order effects, these three choice questions were presented to participants randomly. Additionally, in order to reduce suspicion, participants were asked about the extent to which being outgoing, happy, smart, tall, pregnant, American, and athletic are choices.

It was predicted that the order in which the attitude measures (ATH, ATOP, ATtP-R, ATA and ATZ) and the choice questions were presented should not affect participants’ attitudes toward outgroup members or their perception that outgroup membership is a choice. It is possible, however, that asking participants about their attitudes toward outgroups before asking about their perception of outgroup membership as a choice might influence perception of outgroup membership as a choice. Likewise, asking participants about their perception of outgroup membership as a choice before asking about their attitudes toward those outgroups might influence these attitudinal reports. As such, the order in which attitudes about outgroups and perception of outgroup membership as a choice were assessed was counterbalanced to rule out this possibility.

Although the main predictions of this study are that perceptions of outgroup membership as a choice will mediate the relationship between manipulated belief in free will and positive attitudes toward outgroup members, it is possible that participants attitudes about these five outgroups depend on the extent to which they view these groups as threatening. To rule out this alternative explanation, participants’ perception of the extent to which each of these five

outgroups poses a threat to participants' physical safety, way of life, and sense of morality was also assessed.

To assess perception that outgroups are perceived as threatening, participants indicated on a scale from 1 (*not at all threatening*) to 6 (*very threatening*) the extent to which each homosexuality, obesity, poverty, Asians, and the Zeb posed threats to their physical safety, their way of life, and their sense of morality. For each outgroup, these three items were averaged to compute a single measure of perception of each outgroup as a threat.

At the end of the study, participants provided demographic information, were thanked, and fully debriefed. Because deception was involved in this study, participants were given the option to withdraw their data from final analyses. No participant selected to remove his or her data.

Results

Manipulation Check

To assess whether the free will belief manipulation affected participants' free will belief, a manipulation check was performed by computing an independent samples *t*-test with experimental condition (free will belief reduction and free will belief bolster) as the independent variable and mean score on the free will subscale of the FAD+ Scale as the dependent variable. It was predicted that scores on the free will subscale of the FAD+ Scale would be significantly lower in the free will belief reduction condition than in the free will belief bolster condition. Results, however, indicated that there were no significant differences between the two experimental conditions on participants' beliefs about free will ($M_{FWbolster} = 3.68$; $M_{FWreduction} = 3.64$; $t(53) = -0.23$, $p = .82$). This result is inconsistent with previous research finding that free will beliefs can be reduced through experimental manipulation (Vohs & Schooler, 2008; Baumeister et al., 2009; Stillman & Baumeister, 2010; Alquist et al., 2013). Because the manipulation did not sufficiently reduce participants' belief in free will in the free will belief reduction condition relative to the free will belief bolster condition, definitive, causal conclusions cannot be made about the effect of the manipulation on the dependent variables. However, the proposed analyses are discussed below. Further, based on mediation instructions provided by Baron and Kenny (1986), mediational models will only be tested when the independent variable

(free will condition) significantly predicts the outcome variable (attitudes toward outgroup members).

Manipulated Free Will Belief and Homosexuality

To assess the effect of the free will belief manipulation on attitudes toward people who are homosexual, an independent samples *t*-test was conducted with experimental condition (free will belief bolster and free will belief reduction) as the independent variable and mean score on the ATH ($\alpha = .83$) as the dependent variable. It was predicted that the mean ATH score in the free will belief reduction condition would be significantly higher than in the free will bolster condition. Results, however, indicated that there were no significant differences between the two experimental conditions on positive attitudes toward people who are homosexual as measured by the ATH Scale ($M_{FWbolster} = 4.60$; $M_{FWreduction} = 4.42$; $t(53) = -1.53$, $p = .13$; See Appendix A Figure 1).

Manipulated Free Will Belief and Obesity

To assess the effect of the free will belief manipulation on attitudes toward people who are obese, an independent samples *t*-test was conducted with experimental condition (free will belief bolster and free will belief reduction) as the independent variable and mean score on the ATOP ($\alpha = .86$) as the dependent variable. It was predicted that the mean ATOP score in the free will belief reduction condition would be significantly higher than in the free will bolster condition. Results, however, indicated that there were no significant differences between the two experimental conditions on positive attitudes toward people who are obese as measured by the ATOP Scale ($M_{FWbolster} = 3.35$; $M_{FWreduction} = 3.39$; $t(53) = 0.21$, $p = .84$; See Appendix A Figure 2).

Manipulated Free Will Belief and Poverty

To assess the effect of the free will belief manipulation on attitudes toward people who are poor, an independent samples *t*-test was conducted with experimental condition (free will belief bolster and free will belief reduction) as the independent variable and mean score on the ATtP-R ($\alpha = .84$) as the dependent variable. It was predicted that the mean ATtP-R score in the free will belief reduction condition would be significantly higher than in the free will bolster condition. Results, however, indicated that there were no significant differences between the two

experimental conditions on positive attitudes toward people who are poor as measured by the ATtP Scale ($M_{FWbolster} = 3.87$; $M_{FWreduction} = 3.77$; $t(53) = -.52$, $p = .60$; See Appendix A Figure 3).

Manipulated Free Will Belief and Asians

To assess the effect of the free will belief manipulation on attitudes toward people who are Asian, an independent samples *t*-test was conducted with experimental condition (free will belief bolster and free will belief reduction) as the independent variable and mean score on the ATA ($\alpha = .76$) as the dependent variable. It was predicted that the mean ATA score in the free will belief reduction condition would be significantly higher than in the free will bolster condition. Results, however, indicated that there were no significant differences between the two experimental conditions on positive attitudes toward people who are Asian as measured by the ATA Scale ($M_{FWbolster} = 5.72$; $M_{FWreduction} = 5.69$; $t(53) = -.19$, $p = .85$; See Appendix A Figure 4).

Manipulated Free Will Belief and the Zeb

To assess the effect of the free will belief manipulation on attitudes toward people who are members of a fictitious group, the Zeb, an independent samples *t*-test was conducted with experimental condition (free will belief bolster and free will belief reduction) as the independent variable and mean score on the ATZ ($\alpha = .81$) as the dependent variable. It was predicted that the mean ATZ score in the free will belief reduction condition would be significantly higher than in the free will bolster condition. Results, however, indicated that there were no significant differences between the two experimental conditions on positive attitudes toward people who are Zeb as measured by the ATZ Scale ($M_{FWbolster} = 5.50$; $M_{FWreduction} = 5.70$; $t(53) = 1.02$, $p = .31$; See Appendix A Figure 5).

Manipulated Free Will Belief and Perceptions of Threat

It is possible that perceptions of outgroups members as threatening could also mediate the relationship between manipulated free will belief and attitudes toward outgroup members, though this was not originally hypothesized. To assess the effect of the free will belief manipulation on perceptions of outgroup members as threats, five separate independent samples *t*-test were conducted. Experimental condition (free will belief bolster and free will belief

reduction) was the independent variable and mean threat scores for each of the outgroups were separately entered into the *t*-tests dependent variables (see Appendix B Table 1). The only significant difference between free will conditions was for the perception of poverty as a threat ($M_{FWbolster} = 1.96$; $M_{FWreduction} = 2.72$; $t(53) = 2.34$, $p = .02$), such that participants in the free will reduction condition perceived those in poverty as a bigger threat than those in the free will bolster condition. It is worth noting that this result is actually counter to what was originally predicted. Despite this relationship, statistical mediation cannot be tested because the free will condition failed to significantly predict positive attitudes toward people who are poor. Additionally, these results must be interpreted with caution, as the free will manipulation failed to pass the manipulation check. The results obtained do suggest that, with the exception of threats and attitudes toward poverty, there is no relationship between perception of specific outgroup membership as a threat and positive attitudes towards that outgroup.

Attitude and Choice Order Effects

It is possible that asking participants about their attitudes toward outgroups before asking about their perception of outgroup membership as a choice might influence perception of outgroup membership as a choice. Likewise, asking participants about their perception of outgroup membership as a choice before asking about their attitudes toward those outgroups might influence attitudinal reports. For these reasons, the order in which attitudes about outgroups and perception of outgroup membership as a choice were assessed was counterbalanced to rule out this possibility. Data were collapsed across manipulation condition, as the manipulation failed to significantly affect participants' free will belief. Results (see Appendix B Table 2) ruled out the hypothesis that the order in which the dependent variables, perceptions of outgroup membership as a choice and positive attitudes toward outgroup members, were presented had no effect on the extent to which participants thought that outgroup membership is a choice or their attitudes toward outgroup members. The only exception to this pattern is with the fictitious group, the Zeb. When participants were asked about the extent to which being Zeb was a choice first, they reported less positive attitudes toward the Zeb than when participants were asked about their attitudes toward the Zeb first ($M_{Attitudes1st} = 3.96$; $M_{Choice1st} = 6.40$; $t(53) = -3.99$, $p < .001$). This is likely because participants have no previous associations with the Zeb. Once they made a declaration about the extent to which being Zeb is a

choice, all of their perceptions of the Zeb that followed were likely to be influenced by this decision.

Supplemental Analyses

Interpretations of the above analyses must be made with caution. Because the free will belief manipulation failed to significantly affect free will beliefs, the previous analyses provide very little insight into the larger questions about the extent to which perceiving an outgroup's membership status as chosen mediates the relationship between free will belief and attitudes towards that outgroup. However, theoretically, because the manipulation check failed to affect participants' free will beliefs, trait belief in free will could be used as a predictor of the hypothesized relationship. The following analyses are similar to the proposed analyses in that they test for the mediating effects of perception of outgroup membership as a choice on the relationship between belief in free will and attitudes toward those outgroup members. However, the results obtained from these analyses will not allow for drawing causal conclusions, as the independent variable was measured not manipulated.

These new mediational predictions were similar to the original hypotheses. It was predicted that perception of outgroup membership as a choice would only mediate the relationship between free will belief and attitudes toward outgroup members for groups in which some people perceive membership in an outgroup as being the result of choice. As such, it was predicted that perception of outgroup membership as a choice would mediate the relationship between free will belief and attitudes towards homosexuals, obese individuals, and the poor. It was also predicted that perception of group membership as a choice would not mediate the relationship between free will belief and attitudes toward Asians and the Zeb. For the former three groups, at least some people may believe that being homosexual, obese, or poor are choice, whereas very few, if any, people likely believe that one's racial or ethnic status is the result of choice.

Trait Free Will Belief and Homosexuality

To assess the effect of trait free will belief on attitudes toward people who identify as homosexual, positive attitudes toward homosexuals, as measure by the ATH, was regressed on trait free will belief, as measured by the free will subscale of the FAD+. It was predicted that, relative to lower trait free will belief scores, higher trait free will belief scores would be

significantly, negatively correlated with positive attitudes toward homosexuals, as some people think that being homosexual is a choice. Results supported this prediction ($\beta = -.28$, $t(53) = -2.10$, $p = .04$).

It was predicted that lower trait belief in free will would be associated with reduced perception that homosexuality is a choice, which in turn would be associated with positive attitudes toward people who identify as homosexual. Because the direct path from the independent variable (trait free will belief) to the dependent variable (positive attitude toward people who are homosexual) was significant in the predicted (negative) direction, the next step of the mediational model was tested.

Perception of homosexuality as a choice, the proposed mediator, was regressed on trait free will belief, the independent variable. It was predicted that this relationship would be significant in a positive direction such that lower rather than higher free will belief would be associated with lower perception of homosexuality as a choice. Results, however, suggested that this was not the case ($\beta = .18$, $t(53) = 1.35$, $p = .18$). Because trait free will belief did not predict perception of homosexuality as a choice, the remaining mediational model was not tested (See Appendix A Figure 6).

Trait Free Will Belief and Obesity

To assess the effect of trait free will belief on attitudes toward people who are obese, positive attitudes toward obese persons, as measure by the ATOP, were regressed on trait free will belief, as measured by the free will subscale of the FAD+. It was predicted that, relative to lower trait free will belief scores, higher trait free will belief scores would be significantly, negatively correlated with positive attitudes toward obese persons, as some people believe that being obese is the result of choices made by an individual. Results, however, did not support this prediction ($\beta = -.16$, $t(53) = -1.14$, $p = .26$; See Appendix A Figure 7). Perhaps this is because the ATOP scale does not actually measure attitudes toward obese persons but rather one's perception about how people who are obese feel.

Trait Free Will Belief and Poverty

To assess the effect of trait free will belief on attitudes toward people who are poor, positive attitudes toward the poor, as measure by the ATtP-R, were regressed on trait free will belief, as measured by the free will subscale of the FAD+. It was predicted that, relative to lower

trait free will belief scores, higher trait free will belief scores would be significantly, negatively correlated with positive attitudes toward the poor, as some people believe that being poor is the result of choices made by an individual. Result supported this prediction ($\beta = -.29$, $t(53) = -2.20$, $p = .03$).

It was proposed that the above predicted pattern of results would be caused by the mediating role of perception of poverty as a choice. In other words, it was predicted that lower rather than higher trait belief in free will would be associated with reduced perception that poverty is a choice, which in turn would be associated with positive attitudes toward people who are poor. Because the direct path from the independent variable (trait free will belief) to the dependent variable (positive attitude toward people who are poor) was significant in the predicted (negative) direction, the next step in the mediational model was tested.

Perception of poverty as a choice, the proposed mediator, was regressed on trait free will belief, the independent variable. It was predicted that this relationship would be significant in a positive direction such that lower rather than higher free will belief would be associated with lower perception of poverty as a choice. This relationship was significant ($\beta = .46$, $t(53) = 3.73$, $p < .001$), such that higher rather than lower trait belief scores were correlated with stronger beliefs that being poor is a choice.

Based on mediation instructions provided by Barron and Kenny (1986), the next step in testing the mediational model, regressing the dependent variable on the mediator, was performed. Attitudes toward the poor, the dependent variable, were regressed on ratings of perception of poverty as a choice, the proposed mediator. It was predicted that perception of poverty as a choice would significantly predict positive attitudes toward people who are poor in the negative direction, such that the less, rather than more, poverty is viewed as a choice, the more positive the attitudes will be toward people who are poor. Results from this analysis supported the hypothesis ($\beta = -.37$, $t(53) = 2.91$, $p = .01$).

To test for full mediation, the dependent variable, positive attitudes toward people who are poor, was regressed on trait free will belief, controlling for perception of poverty as a choice. It was predicted that, when including the mediator in the model, the direct path from independent variable to dependent variable would no longer be significant. Results supported this prediction, indicating full mediation ($\beta = -.15$, $t(53) = -1.05$, $p = .30$). Free will belief affected positive

attitudes toward people who are poor by influencing their perception of poverty as a choice (See Appendix A Figure 8).

Trait Free Will Belief and Asians

To assess the effect of trait free will belief on attitudes toward people who are Asian, positive attitudes toward Asians, as measure by the ATA, were regressed on trait free will belief, as measured by the free will subscale of the FAD+. It was predicted that free will belief would be uncorrelated with attitudes toward Asians, as being Asian is typically not seen as a choice. Results confirmed this hypothesis ($\beta = -.13$, $t(53) = -.93$, $p = .34$; See Appendix A Figure 9).

Trait Free Will Belief and the Zeb

To assess the effect of trait free will belief on attitudes toward people who are Zeb, positive attitudes toward the Zeb, as measure by the ATZ, were regressed on trait free will belief, as measured by the free will subscale of the FAD+. It was predicted that free will belief would be uncorrelated with attitudes toward the Zeb. This is because the Zeb were described as an ethnic group, and people generally do not believe that people choose to be part of ethnic groups. Results confirmed this hypothesis ($\beta = -.13$, $t(53) = -.98$, $p = .33$; See Appendix A Figure 10).

Discussion

Interpretations from the results of Study 3 should be made with caution. Because the manipulation check failed to affect free will belief significantly, conclusions cannot be drawn about the causal relationship between belief in free will and both perception of outgroup membership as a choice and positive attitudes toward outgroup members. However, data were reanalyzed using trait free will belief as the independent variable. The results for these analyses are discussed below.

Predictions for these analyses closely mirrored predictions from the proposed studies. Specifically, for outgroups in which membership could be considered by some the result of a choice (homosexuals, obese persons, and the poor), it was predicted that the relationship between trait free will belief and attitudes toward these outgroup members would be mediated by the extent to which outgroup membership was perceived as a choice. For outgroups in which membership is not likely to be considered a choice (Asians and the Zeb), the mediational model was not proposed.

As predicted, there was no significant mediation for either of the groups in which group membership is not likely the result of choice (Asian and the Zeb). For groups in which outgroup membership could be considered the result of a choice by some, results trended in the predicted directions and one significant, full mediation was found.

The proposed mediational model assessing the mediating role of perception of homosexuality as a choice on the relationship between free will belief and positive attitudes toward homosexuals was tested. Specifically, the independent variable, trait belief in free will, significantly, negatively predicted positive attitudes toward homosexuals in a negative direction. Although the relationship between the proposed mediator and the dependent variable was significant, the relationship between the independent variable and the proposed mediator was not. These data do not support the hypothesis that perceptions of homosexuality as a choice mediate the relationship between trait free will belief and attitudes toward homosexuals. This is because, although there was a significant, negative relationship between free will belief and positive attitudes toward homosexuals, the relationship between the independent variable and the mediator was not statistically significant. However, it is worth noting that although the mediation was not significant, all correlations were in the predicted direction.

The proposed mediational model assessing the mediating role of perception of obesity as a choice on the relationship between free will belief and positive attitudes toward obese persons was tested. Specifically, the path between the independent variable, trait belief in free will, and the dependent variable, attitudes toward obese persons, was tested but failed to meet significance. These data do not support the hypothesis that perceptions of obesity as a choice mediate the relationship between trait free will belief and attitudes toward obese persons, because there was no statistically significant relationship between the independent and dependent variables. Although the mediation was not significant, all correlations were in the predicted direction.

The proposed mediational model assessing the mediating role of perception of poverty as a choice on the relationship between free will belief and positive attitudes toward the poor was tested. Specifically, the path between the independent variable, trait belief in free will, significantly, negatively predicted positive attitudes toward the poor in a negative direction. Likewise, trait free will belief significantly predicted perceptions of being poor as a choice in the positive direction. Further, perceptions of being poor significantly negatively predicted attitudes toward the poor. When both the independent variable and the proposed mediator were entered

into the model predicting positive attitudes towards the poor, belief in free will fail to predict a significant amount of variance. As such, the data supported the proposed mediational model that perceptions of being poor as a choice mediated the relationship between trait free will belief and positive attitudes toward the poor.

There are several reasons why this study may not have worked. Most importantly, the manipulation failed to adequately alter free will beliefs relative to the other condition. Because other researchers have gotten this manipulation to work in the past, it is unlikely that the problem was with the manipulation itself. Rather, it is likely that the participants did not fully follow directions. Perhaps they chose to play with their cell phones rather than really reflect on the meaning of the sentences during the manipulation phase. Because the experimenters were not in the same room as the participants, I cannot know whether this sort of distraction occurred. Further, the problem could have been in the implementation of the manipulation. Several new research assistants joined this project, so perhaps their inexperience led to the failed manipulation. Additionally, this study took about an hour for participants to complete. The tasks were repetitive with no breaks. It is possible that participants disengaged from the study before it ended.

Together, these studies provide initial tests of the relationship between belief in free will and attitudes toward outgroup members. Although, of the three mediational models predicted to be significant, only one model was in fact significant, all of the correlations between the other variables were in the predicted directions (although they were often non-significant). In the case of poverty, perceptions of outgroup membership as a choice mediated the relationship between belief in free will and positive attitudes toward the poor.

CHAPTER FIVE

GENERAL DISCUSSION

This package of studies attempted to do two things: test for a negative relationship between free will belief and attitudes toward specific outgroups and test whether perception that group membership as a choice mediated this relationship. Study 1 tested the relationship between belief in free will and positive attitudes toward outgroups. The results indicated a significant, negative correlation, providing evidence for the relationship between belief in free will and attitudes toward outgroup members. Study 2 tested the hypothesis that perception of homosexuality as a choice predicted attitudes toward outgroups. The results indicated a significant, positive correlation, providing initial evidence that perception of outgroup membership as a choice might mediate the relationship between belief in free will and attitudes toward outgroups. Study 3 attempted to establish a causal model of the relationship between belief in free will and attitudes towards outgroups, with perception of outgroup membership as a choice as the mechanism for this relationship. This was done by manipulating belief in free will rather than measuring it. Unfortunately, the manipulation failed to pass a manipulation check (after the manipulation, the two belief conditions were not statistically different from one another). For this reason, the results from Study 3 cannot be interpreted.

Although Study 3 did not yield the predicted results, Studies 1 and 2 do give some support to the idea that free will belief, perception of outgroup membership as a choice, and attitudes toward outgroup members are statistically related to one another. Study 1 found that, relative to people who do not have a strong belief in free will, the more strongly people believe in free will the less positive are their attitudes about people who identify as homosexual. These findings are correlational and lack a mediating mechanism, however, they do lend support to the basic idea that free will belief is related to attitudes toward people who identify as homosexual. Study 2 found that the perception of homosexuality as a choice predicted attitudes about people who identified as homosexual. Likewise, perception of obesity as a choice predicted attitudes toward people who are obese, and perception of poverty as a choice predicted attitudes toward people who are poor. The findings were similar across all three of the groups studied; when participants thought being homosexual, obese, or poor was the result of choices, they held less

positive attitudes toward the respective groups relative to when they thought group membership was not the result of a choice. Again, these findings are correlational, but they do lend support to the basic idea that when people think group membership is a choice, they like people in those groups less than when they think group membership is not a choice. Perhaps the proposed mediational model is too simplistic. The evidence from Studies 1 and 2 suggests relationships between the three variables of interest (belief in free will, perception of group membership as a choice, attitudes toward members of that group). It is possible, however, that these are three components of a much larger model.

There are several possible reasons why the results from Study 3 did not support the original hypothesis. Perhaps belief in free will is so central to the self that it cannot be manipulated. This explanation, however, is unlikely as many other scholars have successfully used this and similar manipulations (Vohs & Schooler, 2008; Alquist et al., 2013). Another reason is that perhaps participants did not care about the research project and chose not to invest in the manipulation, which prohibited it from working. Again, this explanation is unlikely as other researchers using the same participant pool have successfully used this and similar manipulations (Alquist et al., 2013; Stillman & Baumeister, 2010). Perhaps, however, the reason that the results obtained in Study 3 did not support the hypothesis was because the hypothesis was incorrect. It may be that attitudes toward outgroup members predict belief in free will and that this relationship is mediated by perception of outgroup membership as a choice or some other mediator. From the data collected in Study 3, this model cannot be tested. Future research should consider manipulating attitudes toward outgroup members and then measure participants' belief in free will.

As mentioned previously, the failed manipulation limits my ability to interpret much of Study 3. Another manipulation might be better suited for this study. Further, reducing the overall number of items in the study and allowing for breaks would improve upon the original design.

Throughout the manuscript attitudes towards individuals and groups are often conflated. Perhaps one might hold positive feelings toward people who identify as homosexual generally speaking, but not like any one particular person who identifies as homosexual. In other words, perceptions of individuals and groups were often confused throughout this project. In the future, researchers should decide whether they are more interested in attitudes toward individuals or groups and be explicitly clear in their materials.

These studies find that belief in free will is negatively related to attitudes toward those identifying as homosexual (Studies 1 & 3) and those who are poor (Study 3). Further, these studies found negative relationships between perception of homosexuality, obesity, and poverty as choices and attitudes towards those groups (Study 2). Perhaps these data might be useful when creating public service announcements aimed at reducing prejudice and discrimination. Campaigns engineered to reduce people's perception that homosexuality, obesity, and poverty are choices may lead to increases in positive attitudes about these two groups (or members of these two groups). In general, these data could be used by a number of groups aimed at helping decrease prejudice and discrimination and increase equality.

APPENDIX A

FIGURES

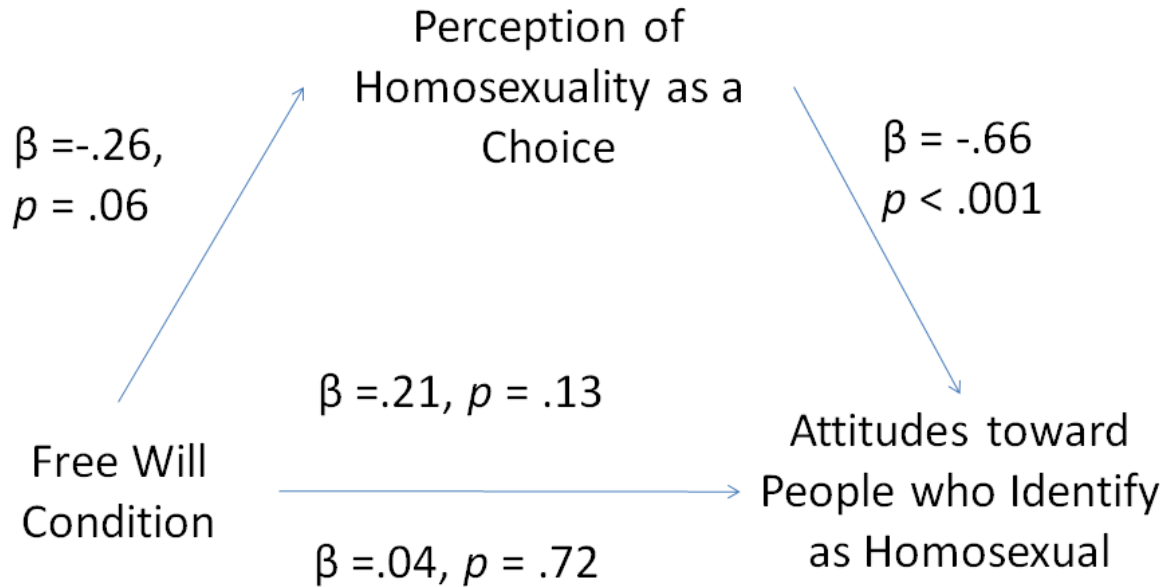


Figure 1. The effect of perception of homosexuality as a choice on the relationship between free will condition and attitudes toward people who identify as homosexual. Mediation is not significant as there was no significant effect of free will condition on attitudes toward people who identify as homosexual.

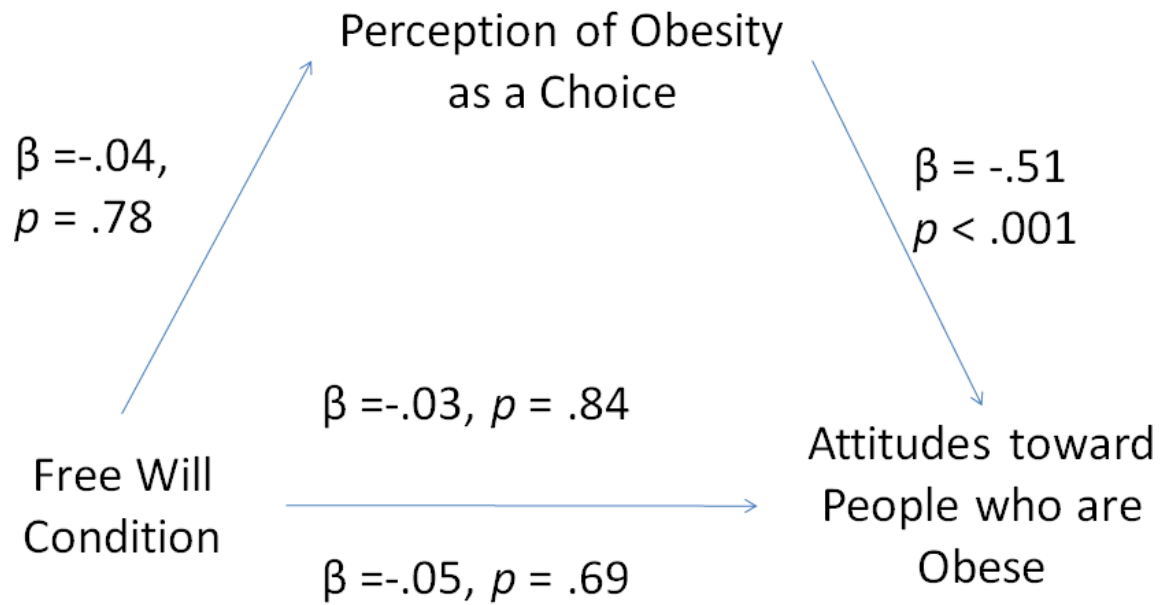


Figure 2. The effect of perception of obesity as a choice on the relationship between free will condition and attitudes toward people who are obese. Mediation is not significant as there was no significant effect of free will condition on attitudes toward people who are obese.

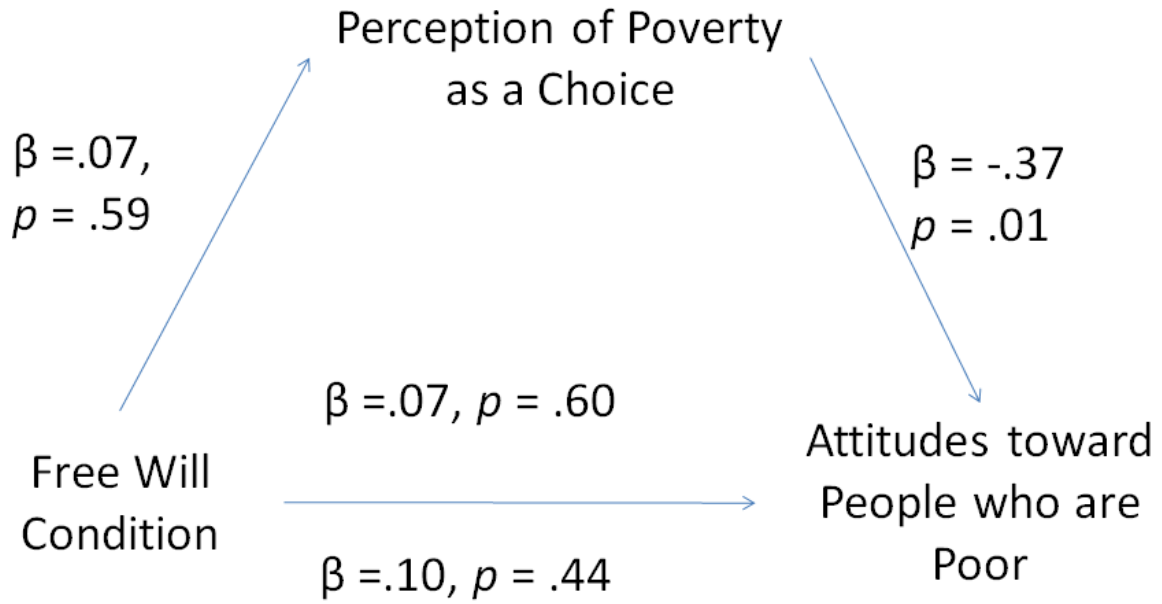


Figure 3. The effect of perception of poverty as a choice on the relationship between free will condition and attitudes toward people who are poor. Mediation is not significant as there was no significant effect of free will condition on attitudes toward people who are poor.

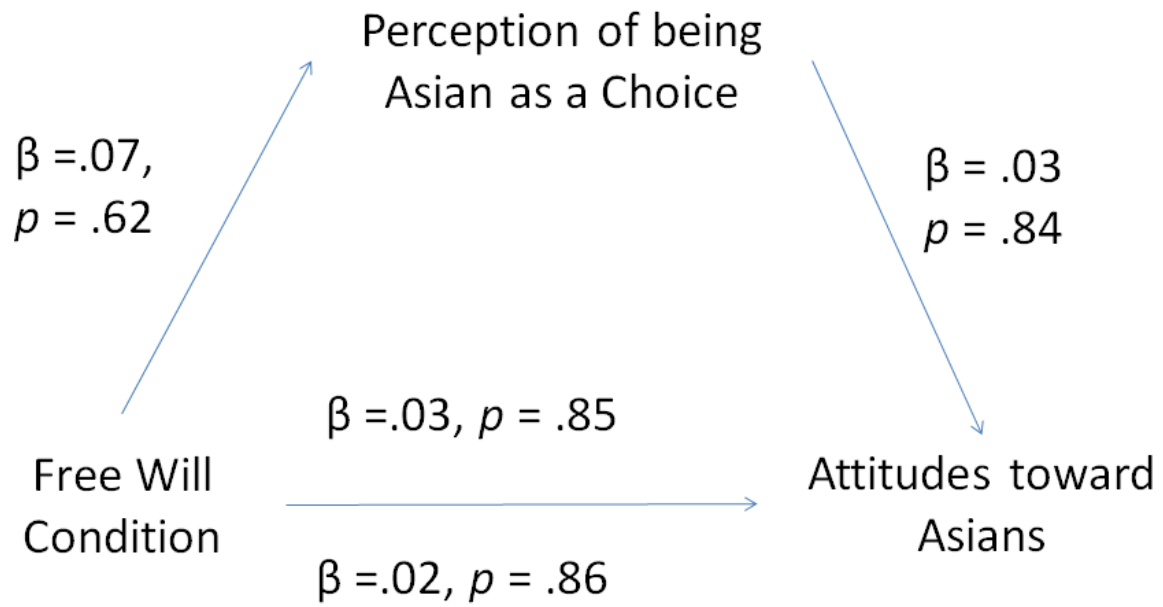


Figure 4. The effect of perception of being Asian as a choice on the relationship between free will condition and attitudes toward Asians. Mediation is not significant as there was no significant effect of free will condition on attitudes toward Asians.

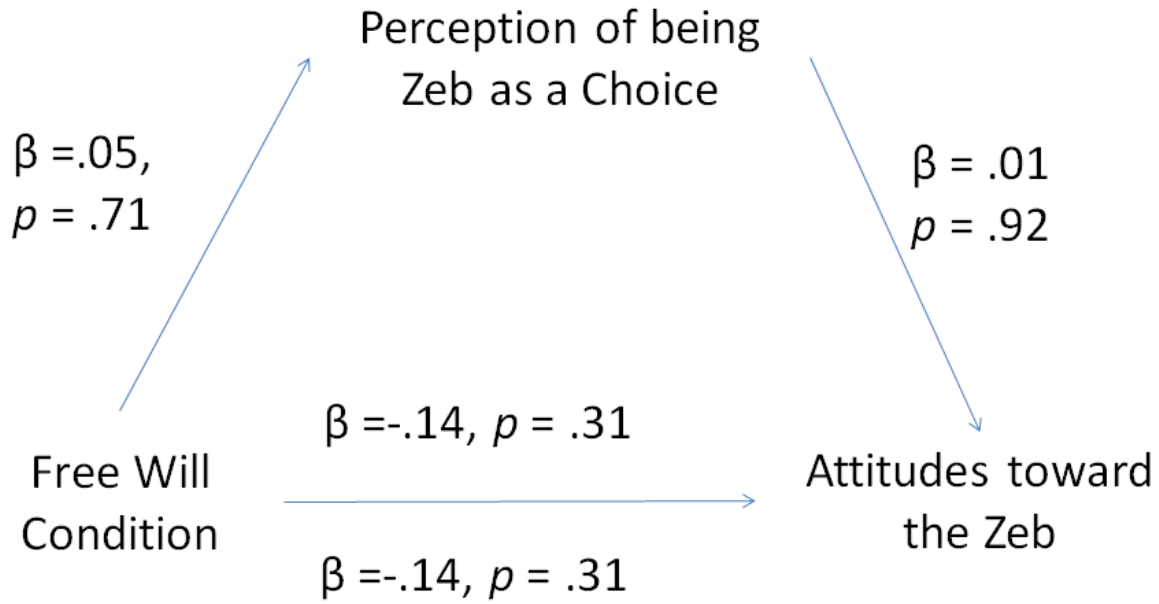


Figure 5. The effect of perception of being Zeb as a choice on the relationship between free will condition and attitudes toward the Zeb. Mediation is not significant as there was no significant effect of free will condition on attitudes toward the Zeb.

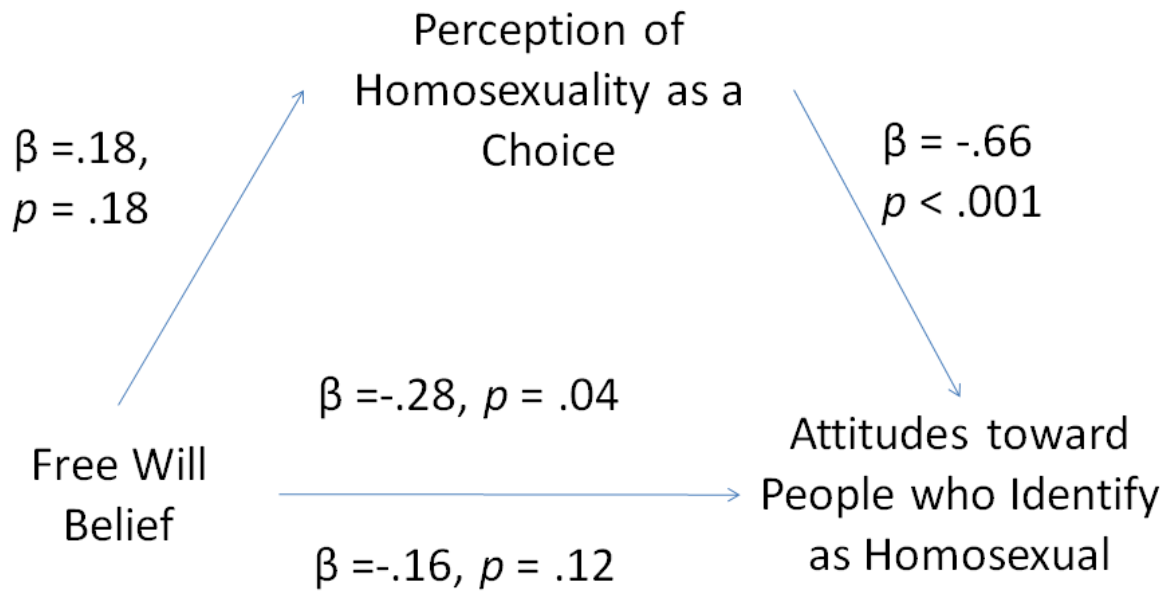


Figure 6. The effect of perception of homosexuality as a choice on the relationship between trait free will belief and attitudes toward people who identify as homosexual. Direct path from IV to DV is significant, but path between IV and mediator is not. As such, mediational model is not significant.

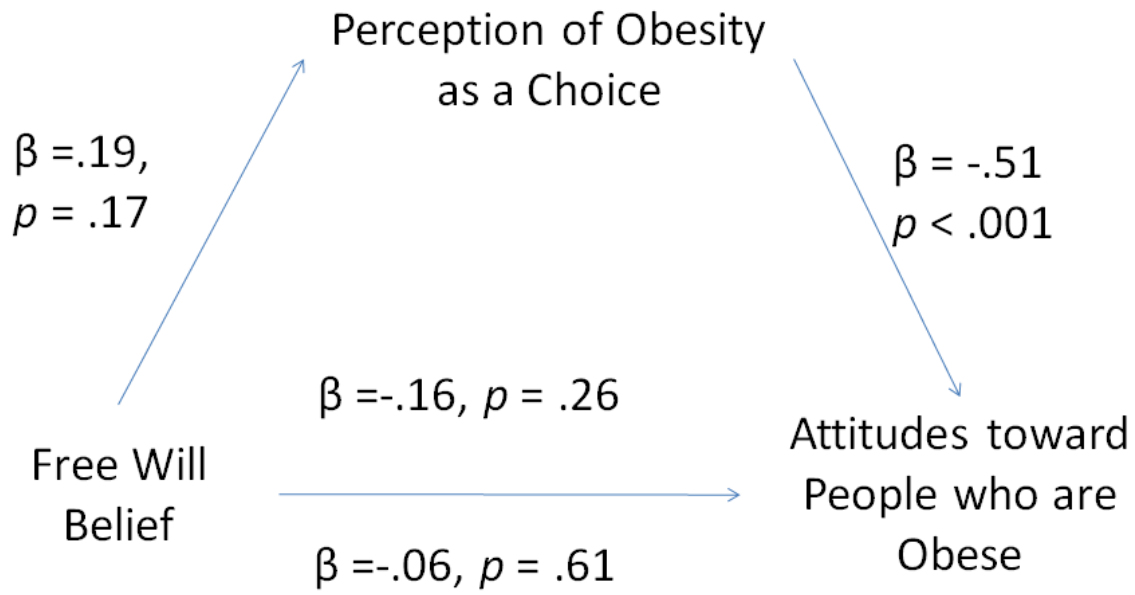


Figure 7. The effect of perception of obesity as a choice on the relationship between trait free will belief and attitudes toward people who are obese. Direct path from IV to DV is not significant, so the mediational model is not significant either.

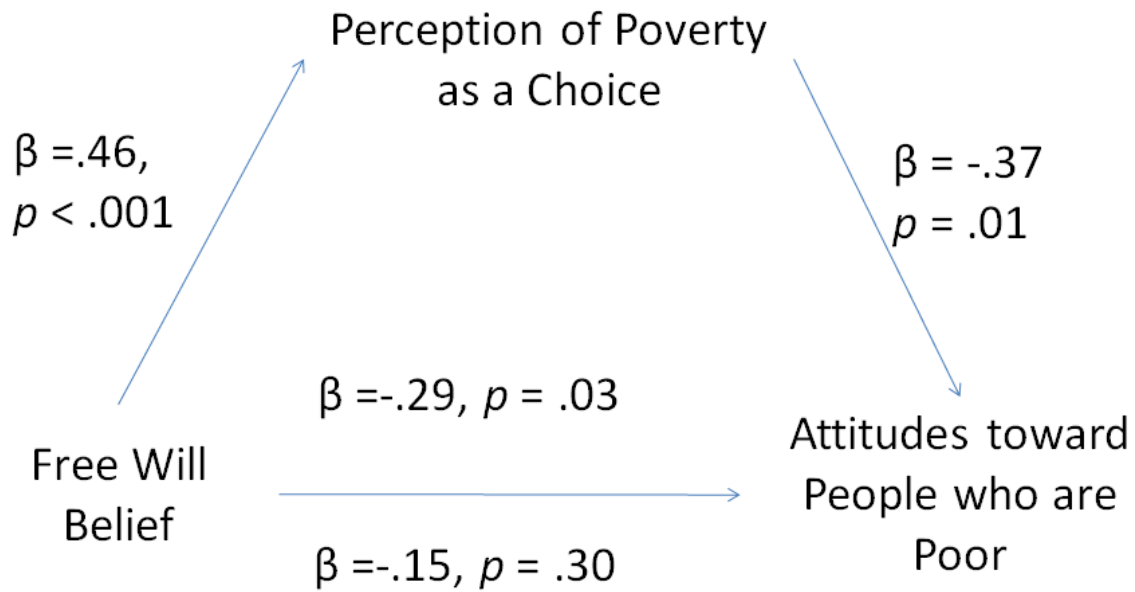


Figure 8. The effect of perception of poverty as a choice on the relationship between trait free will belief and attitudes toward the poor. Direct path from IV to DV is significant, as are the path between IV and mediator and the mediator and the DV. When including both the IV and the mediator into the regression model predicting the DV, the IV fails to account to significant variability. As such, mediational model is significant.

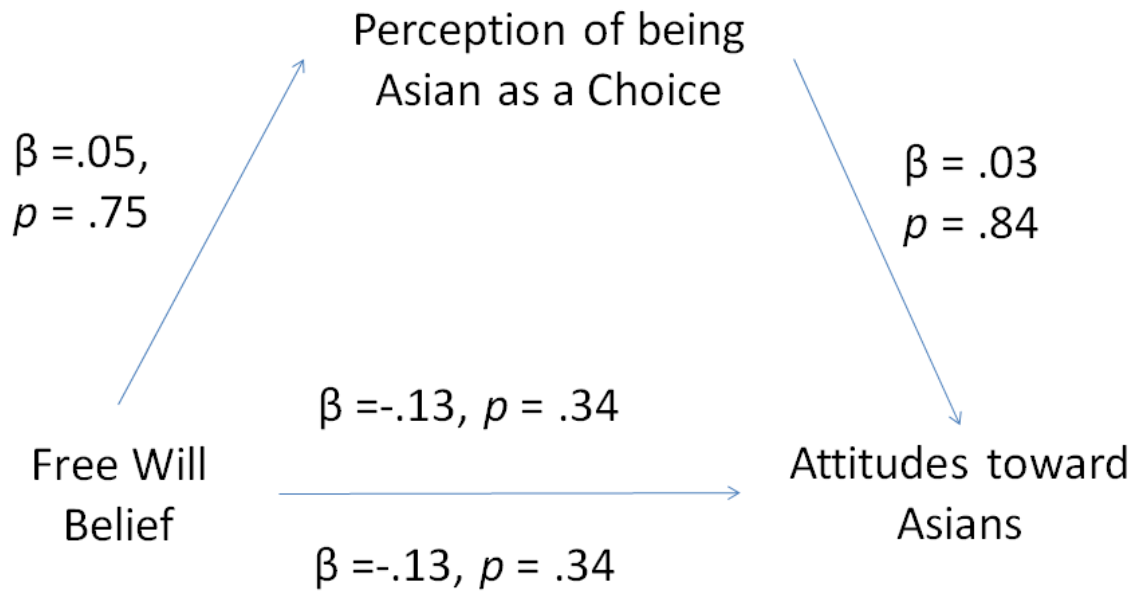


Figure 9. The effect of perception of being Asian as a choice on the relationship between trait free will belief and attitudes toward Asians. Direct path from IV to DV is not significant, so the mediational model is not significant either.

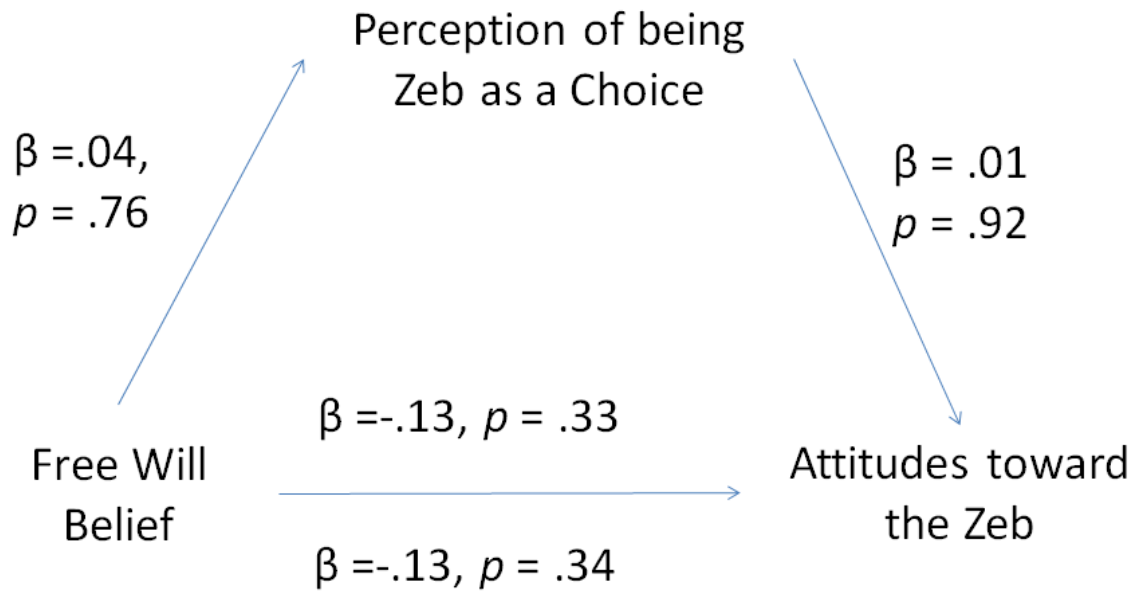


Figure 10. The effect of perception of being Zeb as a choice on the relationship between trait free will belief and attitudes toward the Zeb. Direct path from IV to DV is not significant, so the mediational model is not significant either.

APPENDIX B

TABLES

Table 1. Alpha levels for the threat composite variable (first column). Means for perception of outgroup as threat for each of the free will manipulation conditions (second column). Results from t-test with free will condition as the independent variable and perception of specific outgroup as threat as the dependent variable (third column). Results from regressing attitudes about specific outgroups on to perceptions of outgroup members as threats. Note that perception of poverty as a threat does significantly mediate the relationship between free will condition and attitudes toward the poor.

	Threat alpha	Threat Means		FW Condition predicting Threat		Threat predicting Attitudes		
		FW bolster	FW reduction	<i>t</i> (53)	<i>p</i>	β	<i>t</i> (53)	<i>p</i>
		Homosexuality	0.80	1.35	1.57	0.87	0.39	-0.63
Obesity	0.70	2.35	2.63	0.79	0.43	-0.22	-1.62	0.11
Poverty	0.84	1.96	2.72	2.34	0.02	-0.36	-2.82	0.01
Being Asian	0.74	1.11	1.10	-0.11	0.91	-0.36	-2.84	0.01
Being Zeb	0.80	1.26	1.20	-0.47	0.64	-0.46	-3.75	0.00

Table 2. The effects of dependent variable presentation order (attitude questions first or choice questions first) on the responses to dependent variables. Data on left are the results of counterbalancing order on attitudes toward outgroup members. Data on right are the results of counterbalancing order on perception of group membership as a choice. Note that the only significant difference is for the Zeb. Order of the presentation of dependent variable does have an effect on perception of outgroup membership as a choice, such that when the attitudes towards the Zeb questions were presented first, perception that being Zeb was a choice was lower than when the choice questions were presented first.

Outgroups	Attitudes toward Specific Outgroups				Perception of Outgroup Membership as Choice			
	Attitude	Choice	<i>t</i> (53)	<i>p</i>	Attitude	Choice	<i>t</i> (53)	<i>p</i>
	Qs first	Qs first			Qs first	Qs first		
Homosexuality	4.54	4.43	0.47	0.64	3.30	3.94	-0.92	0.36
Obesity	3.37	3.37	0.00	1.00	7.00	7.54	-1.18	0.24
Poverty	3.83	3.81	0.11	0.91	5.57	5.00	1.55	0.13
Being Asian	5.57	5.85	-1.64	0.11	1.60	1.98	-0.85	0.40
Being Zeb	5.51	5.69	-0.95	0.35	3.96	6.40	-3.99	0.00

APPENDIX C

FREE WILL BELIEF MANIPULATION

Participants in the Free Will Belief Bolster condition rephrase the following sentence:

1. I demonstrate my free will every day when I make decisions.
2. I am able to override the genetic and environmental factors that sometimes influence my behavior.
3. I take personal pride in good decisions I have made in the past because I know that, at the time, I had the freedom to and could have made a bad decision.
4. Avoiding temptation requires that I exert my free will.
5. I have free will to control my actions and, ultimately, to control my destiny in life.
6. People are responsible for their behaviors because they have free will to control their actions.
7. By exerting their free will, people can and do overcome the negative effects of a dysfunctional environment.
8. It has been shown that mental experience cannot be completely reduced to physical causes.
9. There are many things that science still cannot explain, so it does not trouble me that science cannot offer an explanation for free will.
10. By exerting my will, I overcome the physical factors that influence my behavior and experience true freedom.

Participants in the Free Will Belief Reduction condition rephrase the following sentence:

1. Ultimately, we are biological computers - designed by evolution, built through genetics, and programmed by the environment.
2. Science has demonstrated that free will is an illusion.
3. It is likely that scientists will eventually understand how the feeling of personal experience results from neurons firing in the brain.
4. Everything a person does is a direct consequence of their environment and genetic makeup.
5. Once scientists understand enough about the physical principles underlying behavior, they should be able to precisely predict a person's future actions based solely on that person's genetics and prior experiences.
6. Our actions are determined by what we have experienced in the past combined with the specific genetic predispositions that we have.
7. Like everything else in the universe, all human actions follow from prior events and ultimately can be understood in terms of the movement of molecules.
8. A belief in free will contradicts the known fact that the universe is governed by lawful principles of science.
9. People often claim that they have free will, but all they really have is the experience of making choices.
10. Just as science has shown that physical movement is merely forces of gravity combined with muscular force, scientists are now realizing that personal thoughts, feelings, and beliefs are similarly controlled by basic physical processes.

17. Whether people like it or not, mysterious forces seem to move their lives.
18. As with other animals, human behavior always follows the laws of nature.
19. Life is hard to predict because it is almost totally random.
20. Luck plays a big role in people's lives.
21. People have complete free will.
22. Parents' character will determine the character of their children.
23. People are always at fault for their bad behavior.
24. Childhood environment will determine your success as an adult.
25. What happens to people is a matter of chance.
26. Strength of mind can always overcome the body's desires.
27. People's futures cannot be predicted.

APPENDIX E

ATTITUDES TOWARD HOMOSEXUALITY (ATH) SCALE

Participants answer using a 5 point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Items marked with a * are reverse scored.

1. Apartment complexes should not accept lesbians and gay men as renters.
2. Lesbians and gay men should be required to register with the police department where they live.
3. Lesbians and gay men should not be allowed to hold responsible positions.
- *4. Job discrimination against lesbians and gay men is wrong.
5. Lesbians and gay men are a danger to young people.
6. Lesbians and gay men are more likely to commit deviant acts such as child molestation, rape, voyeurism (peeping Toms) than are heterosexuals.
7. Lesbians and gay men dislike members of the opposite sex.
- *8. Finding out an artist was a gay man or a lesbian would have no effect on my appreciation of her or his work.
- *9. Lesbians and gay men should be allowed to serve in the military.
- *10. Lesbians and gay men should not be discriminated against because of their sexual preference.
11. Lesbians and gay men should not be allowed to work with children.
12. The increasing acceptance of gay men and lesbians in our society is aiding in the deterioration of morals.
13. Gay men and lesbians endanger the institution of the family.
- *14. Many gay men and lesbians are very moral and ethical people.
- *15. Gay male and lesbian couples should be able to adopt children the same as heterosexual couples.
16. The idea of marriages between gay men or lesbians seems ridiculous to me.
- *17. State laws regulating private, consenting behavior between gay men and lesbians should be loosened.
18. Gay men and lesbians just can't fit into our society.
19. Gay men and lesbians do need psychological treatment.

*20. Gay men and lesbians are a viable part of our society.

21. Homosexual behavior between two men or two women is just plain wrong.

APPENDIX F

ATTITUDES TOWARD OBESE PERSONS (ATOP) SCALE

Please mark each statement below in the left margin, according to how much you agree or disagree with it.

- | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------------|-----------------------|---------------------|------------------|--------------------|------------------|
| I strongly disagree | I moderately disagree | I slightly disagree | I slightly agree | I moderately agree | I strongly agree |
- _____ Obese people are as happy as nonobese people.
 - _____ *Most obese people feel that they are not as good as other people.
 - _____ *Most obese people are more self-conscious than other people.
 - _____ *Obese workers cannot be as successful as other workers.
 - _____ *Most nonobese people would not want to marry anyone who is obese.
 - _____ *Severely obese people are usually untidy.
 - _____ Obese people are usually sociable.
 - _____ Most obese people are not dissatisfied with themselves.
 - _____ Obese people are just as self-confident as other people.
 - _____ *Most people feel uncomfortable when they associate with obese people.
 - _____ *Obese people are often less aggressive than nonobese people.
 - _____ *Most obese people have different personalities than nonobese people.
 - _____ Very few obese people are ashamed of their weight.
 - _____ *Most obese people resent normal weight people.
 - _____ *Obese people are more emotional than nonobese people.
 - _____ *Obese people should not expect to lead normal lives.
 - _____ Obese people are just as healthy as nonobese people.
 - _____ Obese people are just as sexually attractive as nonobese people.
 - _____ *Obese people tend to have family problems.
 - _____ *One of the worst things that could happen to a person would be for him to become obese.

APPENDIX H

DESCRIPTION OF THE ZEB

The Zeb are a group of individuals living in a first world country. They are not the majority group in their country, but they are well respected. They tend to work in mid-level, corporate positions, such as administrative assistant and project manager. They tend to be promoted within their company, but they don't usually become high-ranking officials. They make a very moderate income, which can support a small family. Because of their jobs and income, they usually live in middle-class neighborhoods. Although the Zeb are not considered wealthy, they make enough money to shop at moderately priced department stores and are able to afford to take their families on vacation once per year. Overall, the Zeb are a very middle class group.

APPENDIX I

REVISED ATTITUDES TOWARD THE POOR (ATTP-R) SCALE

Please mark each statement below in the left margin, according to how much you agree or disagree with it.

- | 1 | 2 | 3 | 4 | 5 | 6 |
|---------------------|-----------------------|---------------------|------------------|--------------------|------------------|
| I strongly disagree | I moderately disagree | I slightly disagree | I slightly agree | I moderately agree | I strongly agree |
- _____ Poor people are as happy as non-poor people.
 - _____ *Most poor people feel that they are not as good as other people.
 - _____ *Most poor people are more self-conscious than other people.
 - _____ *Poor workers cannot be as successful as other workers.
 - _____ *Most non-poor people would not want to marry anyone who is poor.
 - _____ *Very poor people are usually untidy.
 - _____ Poor people are usually sociable.
 - _____ Most poor people are not dissatisfied with themselves.
 - _____ Poor people are just as self-confident as other people.
 - _____ *Most people feel uncomfortable when they associate with poor people.
 - _____ *Poor people are often less aggressive than non-poor people.
 - _____ *Most poor people have different personalities than non-poor people.
 - _____ Very few poor people are ashamed of their financial status.
 - _____ *Most poor people resent people with moderate and high incomes.
 - _____ *Poor people are more emotional than non-poor people.
 - _____ *Poor people should not expect to lead normal lives.
 - _____ Poor people are just as healthy as non-poor people.
 - _____ Poor people are just as sexually attractive as non-poor people.
 - _____ *Poor people tend to have family problems.
 - _____ *One of the worst things that could happen to a person would be for him to become poor.

APPENDIX J

ATTITUDES TOWARD ASIANS (ATA) SCALE

Please indicate your agreement/disagreement with each of the following statements, using the scale below. Please write your rating in the blank to the left of each statement.

1	2	3	4	5	6	7
Strongly						Strongly
Disagree						Agree

- _____ 1. If an Asian were put in charge of me, I would not mind taking advice and direction from him or her.
- _____ 2. If I had a chance to introduce Asian visitors to my friends and neighbors, I would be pleased to.
- _____ 3. I would rather not have Asians live in the same apartment building I live in.
- _____ 4. I would probably feel somewhat self-conscious dancing with an Asian in a public place.
- _____ 5. I would not mind it at all if an Asian family with about the same income and education as me moved in next door.
- _____ 6. I think that Asian people look more similar to each other than white people do.
- _____ 7. Interracial marriage between Americans and Asians should be discouraged to avoid the “who-am-I?” confusion which the children feel.
- _____ 8. I get very upset when I hear a white make a prejudicial remark about Asians.
- _____ 9. I favor open housing laws that allow more racial integration of neighborhoods.
- _____ 10. It would not bother me if my new roommate was Asians.
- _____ 11. It is likely that Asians will bring violence to neighborhoods when they move in.
- _____ 12. I enjoy a funny racial joke, even if some people might find it offensive.
- _____ 13. The federal government should take decisive steps to override the injustices Asians suffer at the hands of local authorities.
- _____ 14. Asian and white people are inherently equal.

- ____15. Asian people are demanding too much too fast in their push for equal rights.
- ____16. Whites should support Asians in their struggle against discrimination and segregation.
- ____17. Generally, Asians are not as smart as whites.
- ____18. I worry that in the next few years I may be denied my application for a job or a promotion because of preferential treatment given to minority group members.
- ____19. Racial integration (of schools, businesses, residences, etc.) has benefited both whites and Asians.
- ____20. Some Asians are so touchy about race that it is difficult to get along with them.

APPENDIX K

ATTITUDES TOWARD THE ZEB (ATZ) SCALE

Please indicate your agreement/disagreement with each of the following statements, using the scale below. Please write your rating in the blank to the left of each statement.

1	2	3	4	5	6	7
Strongly						Strongly
Disagree						Agree

_____ 1. If a Zeb person were put in charge of me, I would not mind taking advice and direction from him or her.

_____ 2. If I had a chance to introduce Zeb visitors to my friends and neighbors, I would be pleased to.

_____ 3. I would rather not have Zeb people live in the same apartment building I live in.

_____ 4. I would probably feel somewhat self-conscious dancing with a Zeb person in a public place.

_____ 5. I would not mind it at all if a Zeb family with about the same income and education as me moved in next door.

_____ 6. I think that Zeb people look more similar to each other than white people do.

_____ 7. Interracial marriage between Americans and Zeb people should be discouraged to avoid the “who-am-I?” confusion which the children feel.

_____ 8. I would get very upset if I heard a person make a prejudicial remark about the Zeb.

_____ 9. I favor open housing laws that allow more racial integration of neighborhoods.

_____ 10. It would not bother me if my new roommate was a Zeb person.

_____ 11. It is likely that the Zeb will bring violence to neighborhoods when they move in.

_____ 12. I enjoy a funny racial joke, even if some people might find it offensive.

_____ 13. The federal government should take decisive steps to override the injustices the Zeb suffer at the hands of local authorities.

_____ 14. Zeb people and white people are inherently equal.

- ____15. Zeb people are demanding too much too fast in their push for equal rights.
- ____16. Whites should support Zeb people in their struggle against discrimination and segregation.
- ____17. Generally, Zeb people are not as smart as whites.
- ____18. I worry that in the next few years I may be denied my application for a job or a promotion because of preferential treatment given to Zeb people.
- ____19. Racial integration (of schools, businesses, residences, etc.) has benefited both white people and Zeb people.
- ____20. Some Zeb people are so touchy about race that it is difficult to get along with them.

APPENDIX L

HUMAN SUBJECTS COMMITTEE APPROVAL MEMO

Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 11/14/2011

To: Lauren Brewer [brewer@psy.fsu.edu]

Address: 1107 W Call St. Department of Psychology Tallahassee, Fl 32306 - 4301
Dept.: PSYCHOLOGY DEPARTMENT

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Free Will Belief and Perceptions of acceptability

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 10/12/2011. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 10/10/2012 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any

unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Roy Baumeister, Advisor
HSC No. 2011.7097

APPENDIX M

INFORMED CONSENT

I freely and voluntarily and without element of force or coercion, consent to be a participant in the research project “My Philosophy and Beliefs” This research is being conducted by Lauren Brewer, a graduate student at Florida State University. I understand the purpose of this research project is to better understand how people’s philosophical ideologies influence different aspects of their lives. I also understand that I will be asked to answer questions about my personality, beliefs, relationships, and past sexual history. I understand that some of these questions may pertain to topics that are sensitive in their nature.

I understand my participation is totally voluntary and I may stop participation at anytime. The total time commitment would be about 30 minutes for the entire project. I will be compensated by receiving one half (.5) credit toward my Psychology class. If I decide to stop participation, I will still be entitled to the one half (.5) credits. All my answers to the questions will be kept confidential and identified by a participant code number. My name will not appear on any of the results. No individual responses will be reported. Only group findings will be reported. Consent forms will be stored in a location separate from the experimental materials and destroyed on or before August 1, 2023. All information will remain confidential to the fullest extent allowed by law.

I understand that I must be at least 18 years of age in order to participate. I understand there is a possibility of a minimal level of risk, specifically boredom, involved if I agree to participate in this study. Additionally, there is some risk of emotional discomfort. The research assistant will be available to talk with me about any emotional discomfort I any experience while participating. I am also able to stop my participation at any time I wish.

I understand there might be benefits for participating in this research project. I could develop a better understanding of research methodology and will be providing researchers with valuable insight.

I understand that this consent may be withdrawn at any time without prejudice, penalty or loss of benefits to which I am otherwise entitled. I have been given the right to ask and have answered any inquiry concerning the study. Questions, if any, have been answered to my satisfaction.

I understand that I may contact Lauren Brewer (brewer@psy.fsu.edu), Florida State University, Department of Psychology, 303C Psychology Bldg., (850) 644-2040, or Dr. Roy Baumeister (baumeister@psy.fsu.edu), B328 Psychology Bldg., (850) 644-4200 for answers to questions about this research or my rights. Group results will be sent to me upon my request. If I have questions about my rights as a subject/participant in this research, or if I feel I have been placed at risk, I can contact the Chair of the Human Subjects Committee (humansubjects@magnet.fsu.edu), Institutional Review Board, through the Office of the Vice President for Research, at (850) 644-8633

I have read and understand this consent form.

(Subject)

(Date)

FSU Human Subjects Committee approved on 11/10/2011 Void after 10/10/2012 HSC # 2011.7097

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BIOGRAPHICAL SKETCH

Lauren E. Brewer attended Florida State University where she developed an interest in social psychology after attending several lectures in which Dr. Roy Baumeister, her future graduate school advisor, talked about sexual economics theory. After successfully defending her honors thesis, Lauren graduated *cum laude* with a B.S. in Psychology in the spring of 2006. After graduation, she remained at Florida State University and enrolled in the Social Psychology Ph.D. program. She currently serves as an Assistant Professor at the College of Idaho.

Lauren is interested in how our beliefs about the controllability of our actions affect our thoughts, feelings, and behaviors. Her research program has centered around two primary themes: the study of self-regulation and the behavioral consequences of a belief in free will.

In her spare time, Lauren enjoys traveling, being outdoors, and spending time with her partner, Kyle Conlon.