

**GRATITUDE AS PERSUASION:  
UNDERSTANDING WHEN AND WHY GRATITUDE EXPRESSIONS  
FACILITATE AND INHIBIT COMPLIANCE**

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**Dedication**

*To my parents.*

### **Abstract**

Most of the research examining the influence of gratitude expressions on compliance has focused on their benefits, but some empirical and anecdotal evidence suggests that they can both facilitate and inhibit compliance with requests. This dissertation seeks to understand when and why gratitude expressions enhance compliance and also when and why they may lead to diminished compliance. Two online experiments of adult participants tested hypotheses based on self-determination theory and the persuasion knowledge model. Motivation type and persuasion awareness were hypothesized to moderate the influence of gratitude expressions on compliance, and perceptions of sincerity, basic need support, and differences in state motivation were hypothesized to mediate these effects. Results suggest that gratitude expressions increase compliance through affecting perceptions of sincerity and by supporting relatedness needs. However, results also suggest that gratitude expressions do not always enhance compliance, and can sometimes lead to diminished compliance. Motivation type and persuasion awareness were both found to moderate the influence of gratitude expressions on compliance, and these effects were mediated by differences in state motivation. This research broadens our understanding of gratitude in social contexts by showing that expressions of gratitude can not only facilitate compliance with requests, but also sometimes lead to reductions in compliance. It demonstrates when each of these outcomes is more likely to occur, and it also contributes by uncovering some of the psychological dynamics underlying these influences.

## Table of Contents

Acknowledgments.....	i
Dedication.....	ii
Abstract.....	iii
Table of Contents.....	iv
List of Tables.....	v
List of Figures.....	vii
Introduction.....	1
Study 1.....	20
Study 2.....	42
Discussion.....	62
Tables.....	73
Figures.....	95
References.....	107
Appendices.....	117

## List of Tables

Table 1 <i>Means and standard deviations of outcome variables and mediator variables for each gratitude condition of Study 1</i> .....	73
Table 2 <i>Correlations between predictor variables and outcome variables in Study 1</i> .....	74
Table 3 <i>Correlations between mediator variables and outcome variables in Study 1</i> .....	75
Table 4 <i>Correlations between control variables and outcome variables in Study 1</i> .....	76
Table 5 <i>Correlations between control variables and mediator variables in Study 1</i> .....	77
Table 6 <i>Results from a hierarchical regression model examining the influence of gratitude, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked</i> .....	78
Table 7 <i>Results from a hierarchical regression model examining the influence of gratitude, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked, controlling for dispositional measures of altruism and agreeableness</i> .....	80
Table 8 <i>Results from a hierarchical regression model examining the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked</i> .....	82
Table 9 <i>Results from a hierarchical regression model examining the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked, controlling for dispositional measures of altruism and agreeableness</i> .....	84
Table 10 <i>Means and standard deviations of outcome variables and mediator variables for each gratitude condition of Study 2</i> .....	86
Table 11 <i>Correlations between predictor variables and outcome variables in Study 2</i> ...	87
Table 12 <i>Correlations between mediator variables and outcome variables in Study 2</i> ...	88
Table 13 <i>Correlations between control variables and outcome variables in Study 2</i> .....	89
Table 14 <i>Correlations between control variables and mediator variables in Study 2</i> .....	90

Table 15 *Results from a hierarchical regression model examining the influences of gratitude, persuasion awareness, and dispositional motivation type, and their interactions, on the number of activities the participant checked*.....91

Table 16 *Results from a hierarchical regression model examining the influences of gratitude, persuasion awareness, and dispositional motivation type, and their interactions, on the number of activities the participant checked, controlling for dispositional measures of altruism and agreeableness*.....93

## List of Figures

Figure 1 <i>Results from a previous experiment (Dwyer, 2014) that found a significant interaction between dispositional altruism and the presence/absence of the phrase “Thank you in advance” on compliance</i> .....	95
Figure 2 <i>Results from a previous experiment (Dwyer, 2014) that found a significant interaction between dispositional agreeableness and the presence/absence of the phrase “Thank you in advance” on compliance</i> .....	96
Figure 3 <i>Depiction of Hypotheses 1a-b and 2a-b</i> .....	97
Figure 4 <i>Depiction of Hypothesis 5</i> .....	98
Figure 5 <i>Depiction of Hypotheses 6-9</i> .....	99
Figure 6 <i>Depiction of Hypotheses 6-9</i> .....	100
Figure 7 <i>Depiction of Hypothesis 10</i> .....	101
Figure 8 <i>Depiction of the gratitude by motivation type interaction on number of activities found in Study 1</i> .....	102
Figure 9 <i>Depiction of the gratitude by motivation type interaction on number of activities found in Study 2</i> .....	103
Figure 10 <i>Depiction of the gratitude by persuasion awareness interaction on number of activities found in Study 2</i> .....	104
Figure 11 <i>Depiction of the gratitude by motivation type interaction on state controlled motivation found in Study 2</i> .....	105
Figure 12 <i>Depiction of the gratitude by persuasion awareness interaction on state controlled motivation found in Study 2</i> .....	106

## **Gratitude as Persuasion:**

### **Understanding When and Why Gratitude Expressions**

#### **Facilitate and Inhibit Compliance**

*“The gratitude of most [people] is but a secret desire of receiving greater benefits.”*

- La Rochefoucauld

Have you ever used the phrase “Thanks in advance”? Or, better yet, have you ever been on the receiving end of this expression? Did it make you feel appreciated or manipulated? Did you actually end up performing the action for which you were thanked? Have you ever encountered a public notice thanking you for complying with a policy while at the same time informing you of its demands (e.g., “Thank you for not smoking”, “Thank you for speaking quietly”)? How did you feel? How do you think it affected your actions?

These kinds of gratitude expressions, in which a person is thanked for complying with a request at the same time that the request is made, before they have even had an opportunity to comply, are quite common. The anti-smoking sign, “Thank you for not smoking”, for instance, is one of the most commonly encountered public notices in our society. And a search of the discussion forums for one website revealed more than 15,000 results containing the phrase “thanks in advance” (Edwards, 2008). Moreover, people’s reactions to these expressions vary widely. When considering individuals’ comments on an Internet discussion of the topic, Gaertner-Johnston (2009) notes “one writer said she hated “Thank you in advance” and another wanted to know why the phrase deserves hatred”. One university, which publishes an annual list of words and phrases nominated

for banishment from the English language, even went so far as to include the phrase “Thank you in advance” on its list for 2012 (Associated Press, 2011).

As La Rochefoucauld states, people may use gratitude in order to obtain benefits from others. The present research is aimed at understanding when and why gratitude expressions do and do not lead to compliance from others. The above examples of gratitude “before-the-fact” (i.e., Thanks in advance for...) are, perhaps, the most obvious examples of the phenomenon of *gratitude as persuasion*, because they pair an expression of gratitude with a persuasive request (i.e., to do whatever it is for which one is being thanked). However, gratitude “after-the-fact”, as when one thanks someone for performing a past action, can also be used to promote future benefits for oneself. A person may express gratitude for being helped in the past, in hopes that it will increase the likelihood that they are helped in the future.

Although most empirical research suggests that gratitude expressions facilitate compliance, some research also suggests that they don't always operate as planned (Carey, Clicque, Leighton, & Milton, 1976) and that they can even reduce compliance in some cases (Dwyer, 2014). Anecdotal evidence also suggests that gratitude expressions can sometimes turn people off (e.g., Associated Press, 2011; Gaertner-Johnston, 2009). In an effort to expand on previous research, which has largely considered the benefits of gratitude expressions, a primary goal of the current work is to understand the negative implications of gratitude expressions on compliance with requests. In this dissertation, I attempt to shed light on the conditions under which gratitude expressions lead to enhanced and diminished compliance, as well as the psychological mechanisms underlying both of these outcomes.

## Gratitude and Compliance

Gratitude is commonly thought of as an emotion that arises when a person feels that they have benefited from the actions of another person (McCullough, Kimeldorf, & Cohen, 2008). Although the feeling of gratefulness is an inner state, it can be socially expressed as thankfulness, most often in the form of giving thanks (e.g., saying “Thank you”) to the giver of some personal benefit (Steindl-Rast, 2004). As La Rouchefoucauld suggests, the ramifications of these expressions may extend into future social relations, and may be used to bring about future benefits for the self. Empirical work also suggests that self-serving outcomes, such as increased compliance from others, may result from gratitude expressions. For instance, Rind and Bordia (1995) found that tip percentages increased after restaurant servers wrote the phrase “thank you” on the back of customers’ checks, and Panagopoulos (2011) found that thanking people for voting in previous political elections increased the likelihood that they would vote in subsequent elections. Other experiments in both the laboratory and in the field have also shown that gratitude expressions increase compliance (e.g., Clark, 1975; Grant & Gino, 2010; McGovern, Ditzian, & Taylor, 1975). Moreover, in an applied setting, Clark, Northrop, and Barkshire (1988) found that case managers working in a residential treatment program ended up visiting their adolescent clients more often after having received a thank you note from the residential unit.

However, as noted above, people’s reactions to gratitude expressions can vary widely. For example, whereas some people respond positively to the expression “Thank you in advance”, others hate it (Edwards, 2008; Gaertner-Johnston, 2009). Empirical work also suggests that gratitude expressions do not always operate as intended. Carey,

Clicque, Leighton, and Milton (1976) conducted a field experiment of jewelry store customers designed to promote future business by using gratitude. Although business was sizably increased among customers who were called and thanked for their business (compared to a control group who wasn't called), a much smaller increase was found among customers who were called and thanked, and who were *also* told about a special upcoming sale. The researchers speculate that this may have occurred because customers perceived the call as a promotional call, rather than as an appreciation call. They even go on to recommend that practical applications of gratitude expressions in similar contexts refrain from saying anything that sounds like a sales promotion, or otherwise risk minimizing its effects. Others have speculated that the mention of the sale in this study "cheapened" the expression of gratitude, making it less effective (Tsang & McCullough, 2004).

Therefore, in addition to research showing the positive influence of gratitude expressions on compliance, this research by Carey et al. (1976) also suggests that gratitude expressions may have negative implications. Before elaborating further on when and why these negative outcomes of gratitude expressions may arise, I will examine previous work on why gratitude expressions facilitate compliance.

### **Gratitude Expressions May Facilitate Compliance Because People Desire Connections with Others**

*"No [person] is an island."*

- J. Donne

Why does gratitude make people more likely to comply? Although research has demonstrated that gratitude expressions can increase compliance, little work has

examined the psychological mechanism underlying this process. An exception is provided by Grant and Gino (2010), who examined a mechanism suggested by self-determination theory (SDT: Deci & Ryan, 2000). According to SDT, the desire for interpersonal relatedness is a basic psychological need, such that people are fundamentally motivated to form and maintain connections with other people. This notion is consistent with several other theoretical perspectives in psychology that emphasize fundamental human needs for love, belongingness, and interpersonal attachment (e.g., Baumeister & Leary, 1995; Bowlby, 1973; Maslow, 1968). Moreover, situations that foster a sense of interpersonal connection have been shown to facilitate pro-social behavior (Mikulincer & Shaver, 2005; Pavey, Greitemeyer, & Sparks, 2011). Regarding the effects of gratitude expressions, Grant and Gino hypothesized that being thanked for a past helping act facilitates compliance with a future request because it supports relatedness needs, and specifically because it makes a person feel that their actions are valued by others.

Supporting this hypothesis, they found that participants who were thanked for their help reported feeling significantly more social worth compared with participants who were not, and that these feelings mediated the influence of gratitude on compliance with requests for help in the future (Grant & Gino, 2010). Participants who had been thanked for their previous help were more likely to help in the future because they felt valued and appreciated. The only other study to examine the mechanism underlying gratitude's effects revealed similar results. After the outpouring of support to the citizens of Louisiana following Hurricane Katrina, Raggio and Folse (2009) found that people who saw or heard a "thank you" advertisement had more positive evaluations of

Louisiana on a number of dependent measures, and that these influences were mediated by enhanced feelings of emotional connection and attachment to the state of Louisiana and its people. These findings, along with those of Grant and Gino, are consistent with other research showing that social influences on helping-related outcomes can operate through enhanced relatedness support (e.g., Dwyer, Bono, Snyder, Nov, & Berson, 2013). Therefore, as suggested by the results of this previous research, I expect that gratitude expressions will facilitate compliance through supporting relatedness needs, and specifically by making a person feel valued by others.

**Hypothesis 1a:** Gratitude expressions lead to greater compliance by supporting relatedness needs.

### **Gratitude Expressions May Inhibit Compliance Because**

#### **People Desire Personal Freedom**

*“Live free or die.”*

- J. Stark

Self-determination theory (Deci & Ryan, 2000) also offers a potential mechanism for why expressions of gratitude may sometimes lead to diminished compliance.

According to SDT, like the desire for interpersonal connection, the desire for personal freedom and autonomy is a basic psychological need. People are fundamentally motivated to maintain a sense of volition and choice regarding their actions. This notion is consistent with other theoretical perspectives in psychology that emphasize humans’ desire to maintain a sense of freedom and personal choice and that highlight people’s motivation to restore that sense of freedom when it has been threatened (e.g., Brehm, 1966; Brehm & Brehm, 1981).

Researchers have shown that situations that foster a sense of freedom to make choices facilitate positive outcomes such as enhanced well-being (Langer & Rodin, 1976). Enhanced feelings of personal choice have also been shown to facilitate compliance (Biner, 1988; Fitzsimons, 2000). Researchers adopting a self-determination theory perspective have also demonstrated the influence of autonomy-supportive environments on positive outcomes in other domains. For example, Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004) found that autonomy-supportive (versus controlling) learning climates led to greater test performance and persistence among high school and college students. In a study of athletes conducted by Barholomew, Ntoumanis, Ryan, Bosch, and Thogersen-Ntoumanis (2011), controlling behaviors on the part of coaches predicted diminished satisfaction of athletes' psychological needs, which in turn predicted maladaptive outcomes (e.g., depression and disordered eating).

Autonomy-supportive environments have also been shown to facilitate pro-social behaviors. Gagné (2003) asked volunteers to complete a measure of the degree to which their work environment was autonomy-supportive, and then followed up four months later to see if they were still volunteering. Results revealed that, compared to volunteers who were still active with the organization at the time of the follow up, volunteers who had quit perceived their work setting as significantly less autonomy supportive. Volunteers' satisfaction with their work has also been shown to be positively associated with perceived autonomy support derived from the volunteer context (Dwyer, Bono, Snyder, Nov, & Berson, 2013).

Although gratitude expressions may satisfy a person's need for interpersonal relatedness, they may also threaten a person's need for personal autonomy. When these

expressions appear in a persuasive context, as when one is thanked in advance for performing a requested behavior, or when they are thanked for performing a past act only to then be requested to perform some future behavior, they run the risk of backfiring because they may threaten a person's sense of freedom and autonomy. People may feel "turned off" because they feel that they are being taken advantage of for another person's gain. Therefore, I expect that, although gratitude expressions can lead to increased compliance by making a person feel valued and appreciated, they can also lead to decreased compliance by making a person feel that their sense of personal freedom and autonomy is being threatened.

**Hypothesis 2a:** Gratitude expressions lead to lower compliance by thwarting autonomy needs.

### **When Do Gratitude Expressions**

#### **Facilitate and Inhibit Compliance?**

In attempting to determine when gratitude expressions lead to increased compliance (i.e., through supporting relatedness needs) and when they lead to decreased compliance (i.e., through thwarting autonomy needs), I again turn to self-determination theory. In addition to identifying basic psychological needs, SDT also differentiates between types of motivation that a person can adopt toward certain behaviors. This distinction, between autonomous and controlled motivations, has been called the most central distinction offered by SDT (Deci & Ryan, 2008). Whereas basic psychological needs can be thought of as nutrients that are required for optimal growth and well-being, the type of motivation refers to the quality of a person's experience as to the forces that guide his or her behavior (Weinstein & Ryan, 2010). To the extent that a person is

autonomously motivated to do something, they personally identify with the value of the behavior, have internalized it into their sense of self, and experience a sense of volition associated with their actions. Alternatively, controlled motivation refers to external pressures or contingencies that guide behavior, such that a person does not feel a sense of volition, or self-endorsement, associated with their actions. Under autonomous motivation a person feels that there is an internal locus of causation associated with their actions, and under controlled motivation a person feels that there is an external locus of causation associated with their actions (deCharms, 1968). This distinction in perceived locus of causality associated with people's behavior, and whether it is attributed to internal or external factors, was first introduced by Heider (1958).

A large body of research has compared outcomes associated with autonomous versus controlled motivation, and has consistently found that autonomous motivation leads to greater interest, persistence, performance, and well-being across a variety of domains (Deci & Ryan, 2008). In the pro-social domain, autonomous motivation for helping, compared to controlled motivation for helping, leads to greater well-being on the part of the helper, and this effect was shown to be mediated by greater satisfaction of basic psychological needs (Weinstein & Ryan, 2010). Research has also revealed that, among volunteers, stronger perceptions of external control (i.e., as in "mandatory volunteerism" programs) can negatively influence future intentions to volunteer (Stukas, Snyder, & Clary, 1999).

Moreover, the role of motivation in moderating the influence of gratitude expressions on compliance is suggested by my preliminary research showing dispositional altruism and agreeableness to be moderators of the effect of the phrase

“Thank you in advance” in a request for volunteers (Dwyer, 2014; see Figures 1 and 2). Participants in this study (N = 190) read an e-mail message from a student group requesting that students volunteer their time over one weekend by serving their community. The e-mail either did or did not end with the phrase “Thanks in advance for your help.” Participants were then asked to answer questions indicating the likelihood that they would comply with the request. Among individuals relatively lower in altruism and agreeableness, the use of this phrase was significantly negatively related to a greater likelihood of compliance. However, among individuals relatively higher in altruism or agreeableness, the use of this phrase was positively (though non-significantly) related to a greater likelihood of compliance. Altruism and agreeableness were also positively correlated in this study.

One possible reason for the convergence of these findings for altruism and agreeableness is that individuals higher in self-reported altruism (i.e., who report having engaged in more pro-social acts in the past) and agreeableness, also widely considered to be a pro-social personality trait (Graziano & Eisenberg, 1997; Snyder & Dwyer, 2013), may both also be more autonomously motivated toward the act of volunteering than individuals lower in these qualities. For instance, a person who is relatively high in agreeableness, and who has performed many helping behaviors in the past, is more likely to identify with and value volunteering and feel that there is an internal locus of causation associated with volunteer work that they perform. Moreover, previous research has shown autonomous motivation to be positively correlated with agreeableness (Ingledeu, Markland, & Sheppard, 2004) and with level of engagement in prosocial behavior

(Gagné, 2003). My findings regarding altruism and agreeableness may therefore reflect the underlying influence of a person's type of motivation.

Theory and research also suggest that autonomously motivated individuals experience less defensiveness toward external pressures, compared to those whose motivation is controlled (Weinstein & Hodgins, 2009). According to SDT, autonomously motivated people approach experiences in a more open fashion because they possess greater self-integration, since their behavior is guided internally rather than by external contingencies. And as a result, they have a more secure sense of self-esteem and are not as preoccupied with self-esteem maintenance as individuals whose motivation is controlled (Hodgins, Yacko, & Gottlieb, 2006). Moreover, they may show less resistance to pressures to comply with a request because the freedom *not* to comply may be less important to them than it is to those whose motivation is controlled (Brehm & Brehm, 1981).

Psychological needs for both autonomy and relatedness must be consistently satisfied for a person to develop an autonomous orientation (Deci & Ryan, 2008). Consistent thwarting of autonomy needs will result in a controlled orientation, even if relatedness needs have been satisfied. An autonomous orientation has also been shown to allow for more positive, open, and honest interpersonal experiences, thereby leading researchers to suggest that, whereas a controlled orientation is compatible with interpersonal defensiveness, an autonomous orientation is compatible with interpersonal relatedness (Hodgins, Koestner, & Duncan, 1996). An autonomous orientation may therefore be expected to increase the probability that one's needs for relatedness will be fulfilled by gratitude expressions in a persuasive context. Conversely, the defensiveness

associated with a controlled orientation may decrease the probability that relatedness needs will be fulfilled, and increase the likelihood that autonomy needs will be thwarted, by such expressions. Therefore, I make the following hypotheses (see Figure 3):

**Hypothesis 1b:** When a person's motivation is autonomous, gratitude expressions will lead to greater compliance through supporting relatedness needs.

**Hypothesis 2b:** When a person's motivation is controlled, gratitude expressions will lead to decreased compliance by thwarting autonomy needs.

### **Gratitude Expressions and Motivation Crowding:**

#### **Alternative Predictions for the Moderating Role of Motivation Type**

In addition to predicting this pattern of moderation of gratitude expressions by motivation type, however, it is also plausible to expect an alternative pattern of moderation by motivation type in light of other existing psychological theory and research. When a person's behavior is externally induced through rewards and punishments, autonomous motivation to perform the behavior can be undermined, resulting in diminished performance of the behavior. When this occurs, an individual who previously was motivated, intrinsically or autonomously, to perform the behavior can actually become less likely to perform the behavior, because the extrinsic motivation has "crowded out" their initial intrinsic motivation.

This idea, which has been referred to as the "overjustification effect" (Deci, 1971; Morgan, 1981), the "hidden cost of reward" (Lepper & Greene, 1978), and "motivation crowding" (Frey & Jegen, 2000), has been supported by empirical evidence. For example, Lepper, Greene, and Nisbett (1973) found that, among young children, extrinsic rewards reduce the motivation to engage in a target activity (i.e., drawing) when children

initially possess intrinsic interest in that activity. Similarly, and in a domain more relevant to the current research, Fabes, Fultz, Eisenberg, May-Plumlee, and Christopher (1999) found that extrinsic rewards undermined children's motivation to engage in helping behavior. Moreover, in the health domain, Wenemark, Vernby, and Norberg (2010) found that external incentives reduced participation in epidemiologic surveys. Researchers have tended to find mixed results regarding the effectiveness of incentives in promoting health behaviors (e.g., see Burns et al., 2012; Paul-Ebhohimhen & Avenell, 2008), but Wenemark et al.'s results suggest that the undermining of motivation is particularly likely to occur when individuals already possess high levels of intrinsic motivation toward the behavior.

In the context of the present research, an expression of thanks can be thought of as an extrinsic reward for (or, in the case of before-the-fact gratitude, in anticipation of) enacting a certain behavior. Therefore, in line with these ideas and empirical findings, it is plausible that gratitude expressions can reduce compliance by undermining a person's motivation to perform the behavior for which they are thanked, and that this would be particularly likely to occur among individuals who were already intrinsically motivated to perform the behavior (i.e., autonomously motivated people). Thus, I also make the following alternative hypotheses:

**Hypothesis 3:** When a person's motivation is autonomous, gratitude expressions will lead to decreased compliance because they decrease the person's motivation to perform the behavior.

**Hypothesis 4:** When a person's motivation is controlled, gratitude expressions will lead to increased compliance because they increase the person's motivation to perform the behavior.

**The Role of Perceived Sincerity in Mediating the Effect of Gratitude on Compliance**

*“What is uttered from the heart alone, will win the hearts of others to your own.”*

- J. Goethe

Another reason why expressions of gratitude may sometimes lead to decreased compliance is because they are perceived as insincere. Rather than being seen as reflecting authentic gratefulness, they may be seen as reflecting other motives, such as to achieve benefits for the self. The potential for insincere gratitude expressions to backfire is suggested by the study of jewelry store customers by Carey et al. (1976), in which a much smaller increase in sales was found among customers who were called and thanked, and also told about a special upcoming sale, as compared to customers who were simply called and thanked. As mentioned above, this may have occurred because customers perceived the call as a promotional call, rather than as an appreciation call, which may have “cheapened” the expression of gratitude (Tsang & McCullough, 2004). It is possible that these participants saw the expression of gratitude as less sincere than those who were simply thanked, and this is why the expression was less effective.

Moreover, in another study that measured this construct, perceived sincerity did appear to impact gratitude's effectiveness. In Raggio and Folsie's (2009) study of the effectiveness of “thank you” advertisements on evaluations of Louisiana following Hurricane Katrina, participants were asked to rate how sincere they felt the advertisements were, and were then split into three groups based on these ratings (i.e.,

high, medium, and low sincerity). In support of their hypothesis, Raggio and Folse found that those who rated the ad as lower in sincerity also had less positive attitudes toward Louisiana and its residents and were less willing to speak positively to others about the state.

When is a gratitude expression likely to be perceived as insincere? Based on the results of Carey et al. (1976), it appears that this depends on the target person's awareness of ulterior motives on the part of the person thanking them. Gratitude may have been less effective for customers who were both thanked and told of the upcoming sale due to a heightened awareness of a "sales" motive at the time of the gratitude expression. In other words, when the "secret desire of receiving greater benefits" that La Rouchefoucauld notes is revealed to the target of the request, the expression of gratitude is seen as less sincere, thereby making it less effective. This is also suggested by research by Biner and Kidd (1994) showing that the effects of gratitude expressions on compliance may be nullified when delivered at the same time as a monetary inducement (i.e., giving the participant \$1), which Tsang and McCullough (2002) speculate could have made the request seem more coercive.

Friestad and Wright (1994) speak to these kinds of considerations in their persuasion knowledge model. According to this model, when persuasion awareness is high (i.e., as when one detects self-serving motives on the part of the person making the request; Raggio & Folse, 2009) people will respond unfavorably to a request. When persuasion awareness is low, however, they will respond favorably. Therefore, I make the following hypothesis (see Figure 4):

**Hypothesis 5:** When persuasion awareness is high, gratitude expressions will lead to decreased compliance because they are perceived as less sincere, but when persuasion awareness is low, gratitude expressions will lead to increased compliance because they are perceived as more sincere.

Moreover, additional hypotheses can also be generated when one considers persuasion awareness and its impact on perceived sincerity in light of self-determination theory (Deci & Ryan, 2000). For example, the possible interaction between persuasion awareness and motivation type on perceived sincerity is interesting to consider. As discussed above, whereas a controlled orientation is compatible with interpersonal defensiveness, an autonomous orientation is compatible with interpersonal relatedness (Hodgins, Koestner, & Duncan, 1996). Although I would expect gratitude expressed when persuasion awareness is low to be considered sincere under both autonomous and controlled motivation, I would also expect it to be perceived as more sincere under autonomous motivation because this type of motivation is more compatible with interpersonal openness and connection with others. Moreover, because a controlled motivation is compatible with interpersonal defensiveness, I would expect gratitude expressed when persuasion awareness is high to be perceived especially low in sincerity when motivation is controlled, as opposed to autonomous.

Further, the perceived sincerity of the gratitude expression may have implications for support of basic psychological needs (Deci & Ryan, 2008), which could mediate the path from perceived sincerity to compliance. The higher levels of perceived sincerity expected when motivation is autonomous and persuasion awareness is low may increase compliance because of a boost in relatedness need support. Lower levels of perceived

sincerity, as when motivation is autonomous and persuasion awareness high, or when motivation is controlled and persuasion awareness low, may also increase compliance (although perhaps not to the same degree) due to a smaller boost in relatedness need support. And the lowest levels of perceived sincerity, as when motivation is controlled and persuasion awareness is high, may decrease compliance by thwarting autonomy needs. Therefore, I make the following hypotheses (see Figures 5 and 6):

**Hypothesis 6:** When motivation is autonomous and persuasion awareness is low, gratitude expressions will be perceived as more sincere, therefore satisfying relatedness needs, and therefore leading to increased compliance.

**Hypothesis 7:** When motivation is autonomous and persuasion awareness is high, gratitude expressions will be perceived as less sincere and therefore will be less likely to satisfy relatedness needs, leading to a small increase in compliance.

**Hypothesis 8:** When motivation is controlled and persuasion awareness is low, gratitude expressions will be perceived as more sincere, therefore satisfying relatedness needs (but to a lesser degree than when motivation is autonomous), and so will lead to a small increase in compliance.

**Hypothesis 9:** When motivation is controlled and persuasion awareness is high, gratitude expressions will be perceived as less sincere, thwarting autonomy needs, and leading to decreased compliance.

Additionally, in the model depicted in Figure 4, the path from perceived sincerity to compliance could be mediated by motivation type, which previous research suggests can be induced as a psychological state (Weinstein & Ryan, 2010). On one hand, the reductions in perceived sincerity felt when persuasion awareness is high could induce a

state of controlled motivation to comply with a request, because a person feels that the expression is motivated by self-interested motives, such as to persuade, as opposed to genuine gratefulness. On the other hand, the increase in perceived sincerity felt when persuasion awareness is low could induce a state of autonomous motivation to comply with a request, because a person feels that the expression does reflect genuine gratefulness. They don't feel pressure, but rather feel free to choose whether or not to comply. Therefore, I also make the following hypothesis (see Figure 7):

**Hypothesis 10:** When persuasion awareness is low, gratitude expressions will be perceived as more sincere, which elicits an autonomous motivation to perform the behavior, therefore increasing compliance. When persuasion awareness is high, gratitude expressions will be perceived as less sincere, which elicits a controlled motivation to perform the behavior, therefore decreasing compliance.

### **The Present Research**

I conducted two experiments to investigate the influence of gratitude expressions on compliance, through the psychological mechanisms described above. The goal of this research is to understand both when and why gratitude expressions are effective in facilitating compliance and inhibiting compliance. In both studies, the influence of gratitude expressions is examined under conditions of both autonomous and controlled motivation, and when persuasion awareness is both high and low. Study 1 examines the influence of before-the-fact gratitude, and Study 2 examines the influence of after-the-fact gratitude. Whereas before-the fact gratitude can be thought of as an “antecedent” strategy for promoting compliance, after-the-fact gratitude can be thought of as a “consequence” strategy for promoting compliance (Geller et al., 1996). This distinction,

between antecedent and consequence strategies, has been used to categorize persuasion strategies according to whether they are delivered either before or after the desired behavior is performed (Abrahamse, Steg, Vlek, & Rothengatter, 2005). Antecedent strategies are delivered prior to the performance of a desired behavior, and consequence strategies are delivered after the performance of a desired behavior.

In Study 1, participants were asked to read a message from a student group and indicate their reactions. The message was an appeal for volunteers from a pro-environmental group, which encouraged people to volunteer to help the environment. An autonomous motivation toward volunteering was induced in Study 1 by framing it as a personal choice, and a controlled motivation toward volunteering was induced by framing volunteerism as a duty or obligation (Weinstein & Ryan, 2010). To manipulate gratitude expressed at different levels of persuasion awareness, the appeal ended with either the phrase “Thanks in advance for your help” (gratitude with high persuasion awareness), the phrase “Thanks” (gratitude with low persuasion awareness), or contained no gratitude expression (control).

In Study 2, participants were recruited for a study on “Evaluating Political Communication”, in which they were asked to evaluate an e-mail to supporters of a political candidate that ended with a request for further support. To manipulate gratitude, the message either included an expression of thanks for their previous support, or included a neutral statement. Also, a more direct manipulation of persuasion awareness was used in this study. Before reading the message, some participants were told that political candidates use a variety of strategies to persuade voters, and that in addition to using more traditional advertisements to sway voters, e-mails are also frequently used to

influence their opinions and behaviors (i.e., high persuasion awareness). Alternatively, some participants were told that political candidates use a variety of methods to reach voters, and that in addition to using more traditional forms of communication, e-mails are also frequently used to convey messages to voters (i.e., low persuasion awareness).<sup>1</sup>

Whereas Study 1 employed a manipulation of motivation type, in Study 2 participants' chronic motivational orientation (i.e., autonomous vs. controlled) was measured using an instrument that has been validated to assess people's dispositional motivation type (Deci & Ryan, 1985).

### **Study 1**

For this study, participants were recruited for a study of "Attitudes Toward Student Groups and Organizations", in which they were asked to read a message from a pro-environmental student group, which encouraged people to volunteer to help the environment. Volunteerism is a widespread form of pro-social behavior (Snyder, Omoto, & Dwyer, in press), and because volunteer recruitment appeals often occur in online contexts (e.g., such as e-mailed volunteer recruitment messages, online community and

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<sup>1</sup> I also conducted an experiment using a different manipulation of persuasion awareness. In that study, a less direct manipulation of persuasion awareness was used, in which participants were asked to imagine having received an e-mail from a candidate either in the midst of campaign season during the weeks leading up to the election (high persuasion awareness) or after campaign season had ended during the weeks after the election (low persuasion awareness; see Appendix A). Results from that study revealed a marginally significant interaction between gratitude and persuasion awareness on the primary dependent variable, number of activities, but not of the hypothesized form. In that study, gratitude led to more activities checked under high persuasion awareness, and fewer activities checked under low persuasion awareness, compared to when gratitude was absent. However, this could have been due to perceptions of greater need of assistance on the part of a candidate before an election has occurred (i.e., in the high persuasion awareness condition) than after the election had passed. Therefore, I conducted a new experiment that utilized a more direct manipulation of persuasion awareness, which is now included as Study 2.

website-based advertisements and public service announcements, and online forums pertaining to different philanthropic causes), this study was conducted entirely online. Volunteerism is also an activity that may be considered a personal choice (i.e., since it is not socially mandated) as well as a social duty or obligation (i.e., since it is an opportunity to help those in need). Building on this distinction, and based on the manipulation of helping motivation used by Weinstein and Ryan (2010), an autonomous motivation toward volunteering was induced in Study 1 by framing volunteerism as a personal choice, and a controlled motivation toward volunteering was induced by framing volunteerism as a duty or obligation. In addition to the information in the message, the instructions that preceded the message were also part of the motivation manipulation, in that they framed the behavior of joining student groups as either more of a choice or as more of a duty. The appeal ended with either the phrase “Thanks in advance for your help” (gratitude with high persuasion awareness), the phrase “Thanks” (gratitude with low persuasion awareness), or contained no gratitude expression (control).

Basic need support and perceived sincerity were measured with items assessing participants’ reactions to the message. Participants were then presented with a checklist of voluntary behaviors they could perform on behalf of the organization, and were asked to check whether or not they were willing to perform each one. Compliance was measured as the number of activities checked by each participant. The measure of state helping motivation used by Weinstein and Ryan (2010) was modified and used to assess participants’ type of motivation to comply (i.e., state autonomous vs. state controlled). Additionally, compliance was measured as whether or not they provided their contact information (i.e., e-mail address) so that more information about the group could be sent

to them, and whether or not they clicked on a link to the organization's website appearing on the final page of the survey.

Participants' dispositional motivational orientation was also measured in Study 1 because this could influence the impact of the manipulation of motivation on compliance. For example, framing volunteerism as a choice may more effectively promote compliance for people who are dispositionally more autonomously oriented, and framing it as a duty may more effectively promote compliance for people who are dispositionally more controlled in their orientation, because in both cases the frame matches their chronic orientation. It may be the case that the hypothesized effects are more likely to emerge when condition is matched to participant personality.

## **Method**

### **Design**

I conducted a 2 (motivation type: autonomous, controlled) X 3 (gratitude with high persuasion awareness, gratitude with low persuasion awareness, no gratitude control) experiment.

### **Participants**

Participants were 501 individuals (209 females, 288 males, 3 transgender, 1 didn't provide information; age range 18-74 years, mean age = 31.92, SD = 10.40) recruited from Amazon's Mechanical Turk platform (mTurk). In total, 555 individuals were recruited from mTurk, but a number of them stopped answering items before completing the survey. The experimental manipulation occurred toward the end of the survey, so only participants who continued completing items up to that point, and who thus were randomized to an experimental condition (N = 501), were included as participants. I

chose to recruit a sample of this size for a number of reasons. First, the preliminary study that I ran involved 190 participants (Dwyer, 2014). That study had a single independent variable (i.e., gratitude present / absent), and examined the influence of measured moderator variables (i.e., altruism and agreeableness). The present study has two independent variables, and a total of six conditions. Because I'm also measuring dispositional motivational orientation in this study, I can now also look at 3-way interactions between gratitude, condition, and disposition. Therefore, I increased my required N to 480, which would allow for 80 participants per cell. Other work on gratitude by Grant and Gino (2010) included approximately 30 participants per cell, on average, across four experiments. However, these were higher impact studies than the present study. This is another reason why I feel that I would need a larger number of participants to detect an effect in my study.

Participants mostly identified as White (78.2%), but some identified as Asian (9.4%), Black (6.8%), American Indian or Alaskan Native (0.6%), or other (4.4%). Additionally, 7.6% of participants identified as Hispanic or Latino. Three participants (0.6%) didn't provide information about their race. Most participants completed at least some college coursework (37.9%), with an additional 38.9% having completed a Bachelor's Degree, an additional 9% having completed a Master's Degree, and an additional 2.4% having completed a Doctoral Degree. For the remaining participants, the highest educational level achieved was High School / GED (11.2%), and three participants (0.6%) didn't provide information about their educational background. Participants grew up in a variety of places, describing their hometowns as either suburban (41.7%), urban (31.1%), a small town (17.4%), or rural (9.8%).

## Procedure

Participants were first asked to complete a brief questionnaire assessing individual differences in motivational orientation, personality, and demographics. Next, participants were asked to read a message from a student organization and answer questions concerning their reactions to it. The first component of the motivation manipulation was embedded in the instructions for this task. Participants in the autonomous condition read: “many students decide to join clubs and organizations because of their interests”.

Participants in the controlled condition read: “many students feel that because they are members of the campus community they should participate in clubs and organizations”.

The message was always an appeal for volunteers from The Green Group, a real organization that is “dedicated to bringing students together to appreciate and preserve the environment at the University of Minnesota” (from the group’s website). The message discussed the importance of keeping the campus and surrounding environment clean, mentioned ways to get involved to protect the environment, and encouraged people to volunteer. To further manipulate type of motivation, a procedure similar to the manipulation used by Weinstein and Ryan (2010) was employed. An autonomous motivation toward volunteering was induced by framing volunteerism as a personal choice, and a controlled motivation toward volunteering was induced by framing volunteerism as a duty or obligation. Participants in the autonomous condition read: “Many students are concerned about the state of our campus and surrounding environment. For them, volunteering is one way of acting on their personal values and concerns about the planet. The need to take action to preserve the environment is something many students truly care about. Because they want to help out, they end up

enjoying their work. Every day more and more students are making the decision to get involved, and now the choice is yours”. Participants in the controlled condition read: “It’s everyone’s responsibility to preserve the state of our campus and surrounding environment. For many students, volunteering is one way of living up to these important obligations to their communities and to the planet. Taking action to preserve our environment is something all of us should do. The work might not always be enjoyable, but it is our responsibility to help out. Every day more and more students are doing their part by getting involved, and now you should do yours”. To manipulate gratitude at different levels of persuasion awareness, the appeal either ended with the phrase “Thanks in advance for your help” (gratitude with high persuasion awareness), the phrase “Thanks” (gratitude with low persuasion awareness), or no gratitude expression (control). After viewing the message, basic need support and perceived sincerity were measured with items assessing participants’ reactions to the message. These ten items were presented to each participant in random order to control for order effects.

Participants were then be presented with a checklist of voluntary behaviors they could perform on behalf of the Green Group, and were asked to check whether or not they were willing to perform each one. Compliance was measured as the number of activities checked by each participant. Then, a modified version of Weinstein and Ryan’s (2010) measure of state helping motivation was used to assess participants’ state motivation toward helping the organization. On the following page, participants were given an opportunity to provide their contact information so that they could receive further information about volunteer opportunities. Compliance was measured as whether or not they provide their contact information. On the last page of the survey, participants

were presented with a link to the Green Group's webpage. Compliance was measured as whether or not they clicked on the link.

## Measures

***Dispositional motivation type.*** The General Causality Orientation Scale (GCOS: Deci & Ryan, 1985) was used to assess participants' dispositional motivational orientation (see Appendix B), which is considered as a moderator variable in this study. The GCOS asks participants to read 17 vignettes describing different social situations. For each vignette participants are given three possible responses, which are coded in terms of different types of motivation (i.e., autonomous, controlled, and impersonal). An impersonal orientation is amotivational, and concerns nonvolitional behavior (Hodgins et al., 1996). It is thus not relevant to the present research and will not be considered further. Participants were asked to indicate the extent to which each response was typical for them using Likert-type scales. Each participant's dispositional level of autonomous motivation was computed by averaging their responses to the autonomy items (mean = 5.34, SD = .76, alpha = .85), and their dispositional level of controlled motivation was computed by averaging their responses to the controlled items (mean = 4.07, SD = .70, alpha = .76). The extent to which a participant was relatively more autonomously motivated, versus controlled, was computed by subtracting their standardized mean response across controlled items from their standardized mean response across autonomy items. This classification of participants' motivational orientation as being either relatively more autonomous or controlled has been used in previous research and has yielded groups of comparable sizes (e.g., Koestner, Bernieri, & Zuckerman, 1992; Pullins, 2001). Using this classification strategy, 237 participants were classified as

autonomous and 263 were classified as controlled in this study. One participant, who could not be classified because their difference score equaled zero, was excluded from analyses using this variable.

***Personality questionnaire.*** The 7-item Agreeableness scale from the Big Five Inventory (BFI: John, Naumann, & Soto, 2008) was used to assess dispositional agreeableness (see Appendix C, mean = 3.66, SD = .68, alpha = .76), along with seven filler items from the other four scales.

The 5-item Altruism scale of the Prosocial Personality Battery (Penner, 2002; see Appendix D) was also administered (mean = 2.74, SD = .82, alpha = .81).

These two constructs, agreeableness and altruism, were included as control variables.

***Basic need support.*** Participants' experiences of relatedness-need support were assessed with a 3-item Likert-type scale based on related measures from the literature (Grant, 2008; Grant & Gino, 2010; Keyes, 1998): "This message makes me feel that my help would be appreciated", "This message makes me feel valued by others as a person", "This message makes me feel a sense of connection with others" (mean = 4.59, SD = 1.27, alpha = .79). Participants' experiences of autonomy-need support was assessed with the following three items based on related measures from the literature (Gagné, 2003; Ilardi, Leone, Kasser, & Ryan, 1993): "This message makes me feel pressure to get involved" (reverse-scored), "This message makes me feel that I can choose for myself whether or not to volunteer", "This message makes me feel free to make decisions about how to spend my time" (mean = 4.58, SD = 1.29, alpha = .71). Relatedness-need support and autonomy-need support were considered as mediator variables.

***Perceived sincerity.*** Four items were used to assess perceived sincerity, which participants were asked to respond to on a Likert-type scale based on related measures from the literature (Campbell & Kirmani, 2000; Raggio & Folse, 2009): “The message was sincere”, “The message was genuine”, “The message felt fake” (reverse-scored), and “The message truly reflected the feelings of its author” (mean = 5.22, SD = 1.18, alpha = .89). Perceived sincerity was considered as a mediator variable.

***Checklist of behaviors.*** Participants were presented with a checklist of 20 voluntary behaviors they could perform on behalf of the Green Group. They were asked to check all of the activities they were willing to perform. A range of behaviors was listed, varying in amount of time or commitment required, with at least a few that almost anyone would be willing to do (examples: Help clean up litter in my community, Tell someone I know about environmental problems/issues, Recycle my cans and bottles, Take the stairs instead of the elevator, Make a monetary donation to promote environmental conservation). The primary outcome variable, compliance, was measured as the number of activities checked by each participant (mean = 9.18, SD = 4.81).

***State motivation.*** Participants were asked why they would be willing to perform these behaviors and to indicate their agreement with the following items using a Likert-type scale: “Because I feel I should” (controlled), “Because its important to me” (autonomous), “Because I think I would enjoy it” (autonomous), “Because I’d feel like a bad person if I didn’t” (controlled), “Because I want to” (autonomous), “Because I feel like I have to” (controlled). These items were based on items from Weinstein and Ryan’s (2010) state motivation to help scale. Each participant’s level of state autonomous motivation was generated by averaging their responses to the three autonomous items

(mean = 6.27, SD = 1.78, alpha = .83), and their level of state controlled motivation was generated by averaging their responses to the three controlled items (mean = 4.94, SD = 1.82, alpha = .70). State autonomous motivation and state controlled motivation were considered as mediator variables.

**Contact information.** Participants were given the opportunity to provide their e-mail address if they would like to receive more information about the Green Group. Compliance was measured as whether they provided it, and this was considered as an outcome variable. Sixty-five participants (13.0%) provided their e-mail address.

**Link to webpage.** When participants were told that the study was over, they were provided with a link to the webpage of the Green Group:

<http://sua.umn.edu/groups/directory/show.php?id=2856>.

Compliance was measured as whether or not they clicked on the link before exiting the survey, and this was considered as an outcome variable. Fourteen participants (2.8%) clicked on the link.

### **Analysis Plan**

I will run a series of hierarchical regression analyses to test the influence of gratitude, persuasion awareness, and motivation type, on each of the outcome variables and each of the proposed mediators. In each of these analyses, each of the three predictors will be entered on the first step, the three two-way multiplicative interaction terms will be entered on the second step, and the single three-way multiplicative interaction term will be entered on the third step (Aiken & West, 1991). Motivation type was a manipulated variable in this study, and for these analyses it will be coded as 1 for participants in the autonomous condition and -1 for participants in the controlled

condition. Dispositional motivation type was also measured in this study, so for the regression analyses participants will also be coded as 1 if they possessed a dispositional autonomous orientation, and as -1 if they possessed a dispositional controlled orientation. The manipulated gratitude variable had three levels (i.e., “Thanks”, “Thanks in advance for your help”, and a no gratitude control condition), which varied both based on whether gratitude was expressed, as well as based on level of persuasion awareness. Therefore, this independent variable will be coded as two separate variables, which will be tested in two different sets of regression analyses.

The first of these variables, referred to as “gratitude”, simply represents whether gratitude was expressed or not. Participants who read either the “Thanks” or “Thanks in advance for your help” messages will be coded as 1 on this variable, and participants who were not exposed to an expression of gratitude (i.e., those in the control condition) will be coded as 0. The second of these variables, referred to as “gratitude with different levels of persuasion awareness” compares participants in the two gratitude conditions, and excludes those in the control condition. For this variable, participants who were exposed to a message ending in “Thanks in advance for your help” will be coded as 1 (gratitude with high persuasion awareness), and participants who were exposed to a message ending in “Thanks” will be coded as 0 (gratitude with low persuasion awareness).

## **Results**

Results from Study 1 are described below, in an attempt to address the primary questions guiding this dissertation, namely under what conditions do gratitude expressions lead to enhanced and diminished compliance with a request, and what are the psychological mechanisms underlying both of these outcomes. Table 1 displays the

means and standard deviations of each outcome variable and each mediator variable across the gratitude conditions. The moderating variables under consideration in this study are motivation type and gratitude at different levels of persuasion awareness.

Table 2 displays the correlations between these variables and the three dependent variables (i.e., number of activities, whether participants clicked on the link, and whether participants provided their e-mail address). Gratitude with different levels of persuasion awareness was negatively correlated with number of activities, and both manipulated and dispositional motivation type were positively correlated with number of activities. Table 3 displays the correlations between the proposed mediators and each of the dependent variables. All of the proposed mediators were positively correlated with number of activities, and all except state controlled motivation were positively correlated with whether or not the participant provided their e-mail address. Table 4 displays the correlations between the dependent variables and two control variables, altruism and agreeableness. Both altruism and agreeableness were positively correlated with number of activities, and with whether or not the participant provided their e-mail address. Table 5 displays the correlations between the two control variables and each of the proposed mediators (i.e., relatedness support, autonomy support, sincerity, state autonomous motivation, and state controlled motivation). Each of the proposed mediators was positively related to both control variables.

### **Does motivation type moderate the influence of gratitude expressions on compliance?**

I first examined the influence of gratitude, manipulated motivation type, and dispositional motivation type, and their interactions, on the first outcome variable, the

number of activities the participant checked. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in the number of activities checked,  $F(7,492) = 6.115, p = .000, R^2 = .080$ . Moreover, the gratitude by manipulated motivation type interaction was marginally significant ( $Beta = -.141, p = .058$ ; see Table 6 for a summary of results). As can be seen in Figure 8, the pattern of the interaction showed that gratitude enhanced compliance (i.e., led to more activities checked) when motivation type was controlled, and decreased compliance (i.e., led to fewer activities checked) when motivation type was autonomous, supporting the moderational components of hypotheses 3 and 4. A significant main effect was also observed for both manipulated motivation type ( $Beta = .203, p = .007$ ) and dispositional motivation type ( $Beta = .287, p = .000$ ). In both cases, autonomous motivation predicted a greater number of activities checked than controlled motivation. However, gratitude was not a significant independent predictor of number of activities ( $Beta = .033, p = .454$ ).

Because this outcome variable, number of activities, was correlated with the dispositional measures of altruism and agreeableness (see Table 4), a separate regression model was run that included both of these scales as control variables. Again, the overall prediction model again accounted for significant variance in the number of activities checked,  $F(9,490) = 7.312, p = .000, R^2 = .118$ . Moreover, the same pattern of results emerged. Again, the gratitude by manipulated motivation type interaction was marginally significant, supporting the moderational components of hypotheses 3 and 4 ( $Beta = -.143, p = .051$ ; see Table 7 for a summary of results). A significant main effect was observed for both manipulated motivation type ( $Beta = .213, p = .004$ ) and dispositional motivation type

( $Beta=.246, p=.001$ ), and gratitude was not a significant independent predictor ( $Beta=.031, p=.465$ ).

Next, I conducted a hierarchical regression analysis that examined the influence of gratitude, manipulated motivation type, and dispositional motivation type, and their interactions, on whether or not the participant clicked on the link to the Green Group's webpage. The overall prediction model, with all main effects and interaction effects included, did not account for significant variance in whether people clicked on the link,  $F(7,492)=1.502, p=.164, R^2=.021$ . Moreover, none of the main effects or interaction effects was significant or marginal. The lack of effects found on this outcome variable may have resulted from the low variability observed on it, with only a small percentage of participants having clicked on the link.

Looking next at whether participants provided their e-mail address, an additional hierarchical regression analysis examined the influence of gratitude, manipulated motivation type, and dispositional motivation type, and their interactions. The overall prediction model, with all main effects and interaction effects included, did not account for significant variance in whether people provided their e-mail address,  $F(7,492)=.394, p=.906, R^2=.006$ . Moreover, as was the case with the analysis predicting clicking on the link, none of the main effects or interaction effects was in the significant or marginal range.

However, because whether or not participants provided their e-mail address was correlated with the dispositional measures of altruism and agreeableness (see Table 4), a separate regression model was run that included both of these scales as control variables. Although now the overall prediction model accounted for marginally significant variance

in whether people provided their e-mail address,  $F(9,490)=1.659, p=.096, R^2=.030$ , again none of the main effects of the predictors, or their interaction effects, were in the significant or marginal range.

### **What mediates the interaction between gratitude expressions and motivation type on compliance?**

As a first step toward examining the role of mediators in explaining the interactive effect of gratitude and the motivation type manipulation on number of activities, I ran five additional hierarchical regression analyses, each with one of the five proposed mediating variables (i.e., autonomy support, relatedness support, sincerity, state autonomous motivation, and state controlled motivation) as the criterion variable. As in the previous analyses predicting number of activities, each of the three predictors was entered on the first step, the three two-way multiplicative interaction terms entered on the second step, and the single three-way multiplicative interaction term entered on the third step. In each case, however, the interaction between gratitude and manipulated motivation type was neither significant nor marginal.

Because all of the proposed mediators were correlated with the dispositional measures of altruism and agreeableness (see Table 5), these five hierarchical regressions were run again with these two scales included as control variables, in order to further examine the potential role of each proposed mediator in this process. However, in each case, again the interaction between gratitude and manipulated motivation type was neither significant nor marginal. Thus, although some evidence for the moderating role of motivation type in the influence of gratitude on number of activities was uncovered in these analyses, evidence for the psychological process mediating this effect remained

elusive. Even though all of the proposed mediators were positively correlated with number of activities (see Table 3), the interaction between gratitude and manipulated motivation type did not predict any of the proposed mediators.

### **Do different levels of persuasion awareness influence the effect of gratitude expressions on compliance?**

The next set of hierarchical regression analyses I ran for Study 1 mirror those presented above, but replace the “gratitude” variable with the “gratitude with different levels of persuasion awareness” variable. Whereas the analyses presented above shine some light on the influence of gratitude expressions on compliance, the analyses presented below attempt to determine how the influence of gratitude expressions occurs at different levels of persuasion awareness.

First, I examined the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in the number of activities checked,  $F(7,320)=4.311, p=.000, R^2=.086$ . Moreover, the effect of gratitude with different levels of persuasion awareness was significant ( $Beta=-.124, p=.021$ ; see Table 8 for a summary of results), supporting the moderational components of hypotheses 5 and 10. When persuasion awareness was high, the gratitude expression produced fewer activities checked than when persuasion awareness was low. A significant main effect was also observed for dispositional motivation type ( $Beta=.209, p=.007$ ). Consistent with the findings reported above, autonomous motivation predicted a greater number of activities than controlled

motivation. However, an interaction between gratitude with different levels of persuasion awareness and motivation type (when either manipulated or dispositional) did not emerge.

Because number of activities was correlated with the dispositional measures of altruism and agreeableness (see Table 4), a separate regression analysis was run that included both of these scales as control variables. The overall prediction model again accounted for significant variance in the number of activities checked,  $F(9,318)=6.008, p=.000, R^2=.145$ . Moreover, the same pattern of results emerged. Again, supporting the moderational components of hypotheses 5 and 10, the effect of gratitude with different levels of persuasion awareness was significant ( $Beta=-.126, p=.016$ ; see Table 9 for a summary of results), and a marginally significant main effect was observed for dispositional motivation type ( $Beta=.144, p=.060$ ). However, an interaction between gratitude with different levels of persuasion awareness and motivation type (whether manipulated or dispositional) again did not emerge.

Next, I conducted a hierarchical regression analysis that examined the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on whether or not the participant clicked on the link to the Green Group's webpage. The overall prediction model, with all main effects and interaction effects included, did not account for significant variance in whether people clicked on the link,  $F(7,320)=1.076, p=.379, R^2=.023$ . Moreover, no significant main effects or interaction effects emerged.

Looking next at whether participants provided their e-mail address, an additional hierarchical regression analysis examined the influence of gratitude with different levels

of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions. The overall prediction model, with all main effects and interaction effects included, did not account for significant variance in whether people provided their e-mail address,  $F(7,320)=.340, p=.935, R^2=.007$ . Moreover, none of the main effects or interaction effects was in the significant or marginal range.

Because whether or not participants provided their e-mail address was correlated with the dispositional measures of altruism and agreeableness (see Table 4), a separate regression analysis was run that included both of these scales as control variables.

Although now the overall prediction model accounted for marginally significant variance in whether they provided their e-mail address,  $F(9,318)=1.658, p=.098, R^2=.045$ , again none of the main effects of the predictors, or their interaction effects, were in the significant or marginal range.

### **What mediates the influence of gratitude with different levels of persuasion awareness on compliance?**

Because all of the proposed mediators were positively correlated with number of activities (see Table 3), each of them may potentially be responsible for transmitting the influence of gratitude with different levels of persuasion awareness to number of activities. To examine the role of the mediators in this process, I ran five additional hierarchical regression analyses, each with one of the five proposed mediating variables as the criterion variable. As in the previous analyses predicting number of activities, each of the three predictors was entered on the first step, the three two-way multiplicative interaction terms entered on the second step, and the single three-way multiplicative interaction term entered on the third step. Additionally, because all of the mediators were

correlated with altruism and agreeableness (see Table 5), these two scales were included as control variables in each of the regression models.

First, I examined the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on relatedness support. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in relatedness support,  $F(9,318)=5.204, p=.000, R^2=.128$ . However, a significant main effect of gratitude with different levels of persuasion awareness was not observed ( $Beta=-.029, p=.583$ ).

Next, I examined the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on autonomy support. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in autonomy support,  $F(9,318)=7.900, p=.000, R^2=.183$ . Although a significant main effect of gratitude with different levels of persuasion awareness was not observed ( $Beta=.028, p=.579$ ), the main effect of the motivation type manipulation was significant ( $Beta=.317, p=.000$ ). Higher levels of autonomy support were shown when motivation type was autonomous, compared to when it was controlled.

I then examined the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on perceived sincerity. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in sincerity,  $F(9,318)=6.092, p=.000, R^2=.147$ . Although a significant main effect of gratitude with different levels of persuasion awareness was not observed ( $Beta=-.058, p=.270$ ), the main

effect of dispositional motivation type was marginally significant ( $Beta=.140, p=.065$ ). Higher levels of sincerity were observed when motivation type was autonomous, compared to when it was controlled.

Next, I examined the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on state autonomous motivation. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in state autonomous motivation,  $F(9,318)=7.623, p=.000, R^2=.177$ . Additionally, a significant main effect of gratitude with different levels of persuasion awareness was observed ( $Beta=-.104, p=.044$ ). When persuasion awareness was high, the gratitude expression produced lower state autonomous motivation than when persuasion awareness was low, suggesting state autonomous motivation may mediate the influence of gratitude with different levels of persuasion awareness on number of activities.

I conducted an additional hierarchical regression analysis to further examine the possible mediating role of state autonomous motivation in explaining the effect of gratitude with different levels of persuasion awareness on number of activities. In this analysis, state autonomous motivation was entered along with each of the three predictors (and two controls, altruism and agreeableness) on the first step, the three two-way multiplicative interaction terms entered on the second step, and the single three-way multiplicative interaction term entered on the third step. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in number of activities,  $F(10,317)=12.889, p=.000, R^2=.289$ . Results supported mediation in that a) the mediator, state autonomous motivation, was a significant predictor of

number of activities ( $Beta=.418, p=.000$ ), and b) the effect of gratitude at different levels of persuasion awareness was reduced in size (from  $Beta=-.126, p=.016$  to  $Beta=-.083, p=.084$ ; Baron & Kenny, 1986). I also performed a Sobel test (Sobel, 1982) to determine if the indirect effect of state autonomous motivation was significant, which Baron and Kenny's method does not address. This test revealed that state autonomous motivation significantly mediated the relation between gratitude with different levels of persuasion awareness and number of activities ( $z=-1.970, p=.049$ ). Considered together, these analyses suggest that gratitude with different levels of persuasion awareness influenced the number of activities a participant checked because it affected their state level of autonomous motivation.

I next examined the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on state controlled motivation. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in state controlled motivation,  $F(9,318)=2.367, p=.013, R^2=.063$ . Moreover, a significant main effect of gratitude with different levels of persuasion awareness was observed ( $Beta=-.118, p=.031$ ). When persuasion awareness was high, the gratitude expression produced lower state controlled motivation than when persuasion awareness was low, suggesting state controlled motivation might also mediate the influence of gratitude with different levels of persuasion awareness on number of activities.

I conducted an additional hierarchical regression analysis to further examine the possible mediating role of state controlled motivation in explaining the effect of gratitude with different levels of persuasion awareness on number of activities. In this analysis,

state controlled motivation was entered along with each of the three predictors (and two controls, altruism and agreeableness) on the first step, the three two-way multiplicative interaction terms entered on the second step, and the single three-way multiplicative interaction term entered on the third step. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in number of activities,  $F(10,317)=5.901, p=.000, R^2=.157$ . Results supported mediation in that a) the mediator, state controlled motivation, was a significant predictor of number of activities ( $Beta=.111, p=.037$ ), and b) the effect of gratitude with different levels of persuasion awareness was reduced in size (from  $Beta=-.126, p=.016$  to  $Beta=-.113, p=.037$ ; Baron & Kenny, 1986). I also performed a Sobel test (Sobel, 1982) to determine if the indirect effect of state controlled motivation was significant. However, this test revealed that state controlled motivation did not significantly mediate the relation between gratitude with different levels of persuasion awareness and number of activities ( $z=-1.498, p=.134$ ).

Bootstrapping analyses were used to further examine the roles of the proposed mediators in explaining the relation between gratitude with different levels of persuasion awareness and number of activities, and to examine them within the same model. I used the PROCESS macro for SPSS (Hayes, 2013) to generate 5,000 bootstrap samples in order to estimate a bias-corrected 95% confidence interval (CI) for the indirect effect of each proposed mediator. Each of the five proposed mediators was simultaneously included in a model predicting number of activities, along with gratitude with different levels of persuasion awareness included as the predictor, and with manipulated motivation type, dispositional motivation type, altruism, and agreeableness included as covariates. Consistent with the analyses reported above, this analysis showed the indirect

effect of state autonomous motivation ( $Beta = -.3298$ ,  $CI = -.7095, -.0257$ ) to be significant, providing support for the mediational components of hypotheses 3 and 4. Moreover, the indirect effects of relatedness support ( $Beta = -.0357$ ,  $CI = -.2592, .0674$ ), autonomy support ( $Beta = .0173$ ,  $CI = -.0369, .1653$ ), perceived sincerity ( $Beta = -.0634$ ,  $CI = -.3045, .0347$ ), and state controlled motivation ( $Beta = -.0405$ ,  $CI = -.2067, .0472$ ) were not significant.

### **Summary**

Overall, the results from Study 1 provide evidence that motivation type and persuasion awareness influence the effect of gratitude expressions on compliance. Gratitude expressions led to a greater number of activities checked when motivation type was controlled, and led to fewer activities checked when motivation type was autonomous, supporting the moderational components of hypotheses 3 and 4. Additionally, when persuasion awareness was high, gratitude expressions produced fewer activities checked than when persuasion awareness was low, supporting the moderational components of hypotheses 5 and 10. Although no evidence for the process mediating the role of motivation type was found in this study, it was revealed that state autonomous motivation mediates the link between gratitude with different levels of persuasion awareness on compliance, which provides support for the mediational components of hypotheses 3 and 4.

### **Study 2**

Study 2 was designed to build on and complement Study 1 in a number of ways. First, Study 2 examined the influence of gratitude expressions on compliance in a political context. In Study 2, participants were recruited for a study on “Evaluating

Political Communication”, in which they were asked to evaluate an e-mail to supporters of a political candidate that ends with a request for further support. Because political appeals often occur in online contexts (e.g., messages from politicians to their supporters are often transmitted through e-mail), this study was also conducted entirely online. To manipulate gratitude, the message either included an expression of thanks for their previous support, or included a neutral statement. Second, a more direct manipulation of persuasion awareness was used in Study 2. To examine the influence of gratitude on compliance under conditions of high versus low persuasion awareness, a persuasion motive on the part of the sender was either made salient, or it was not. Before reading the message, some participants were told that political candidates use a variety of strategies to persuade voters, and that in addition to using more traditional advertisements to sway voters, e-mails are also frequently used to influence their opinions and behaviors (i.e., high persuasion awareness). Alternatively, some participants were told that political candidates use a variety of methods to reach voters, and that in addition to using more traditional forms of communication, e-mails are also frequently used to convey messages to voters (i.e., low persuasion awareness). And third, whereas Study 1 examined the influences of before the fact gratitude, Study 2 examined the influences of gratitude expressions delivered after the fact.

Additionally, whereas Study 1 included a manipulation of motivation type, participants’ chronic motivational orientation (i.e., autonomous vs. controlled) was measured in Study 2. Basic need support and perceived sincerity were also measured with items assessing participants’ reactions to the e-mail. Participants were then presented with a checklist of behaviors they could perform on behalf of the candidate and were

asked to check whether or not they would be willing to perform each. Compliance was measured as the number of activities checked by each participant. As in Study 1, the measure of state helping motivation used by Weinstein and Ryan (2010) was modified and used to assess participants' type of motivation to comply (i.e., state autonomous vs. state controlled). Additionally, compliance was measured by asking participants to report the degree to which they felt the e-mail would increase or decrease the likelihood of their voting for the candidate, and whether or not they clicked the link to a webpage where they could learn more about how to support future candidates for political office, which was on the final page of the survey.

## **Method**

### **Design**

I conducted a 2 (gratitude: present, absent) X 2 (persuasion awareness: high, low) experiment.

### **Participants**

Participants were 609 individuals (264 females, 338 males, 5 transgender, 2 didn't provide information; age range 18-72 years, mean age = 32.30, SD = 10.75) recruited from Amazon's Mechanical Turk platform (mTurk). In total, 695 individuals were recruited from mTurk, but a number of them stopped answering items before completing the survey. As in Study 1, the experimental manipulation occurred toward the end of the survey, so only participants who continued completing items up to that point, and who thus were randomized to an experimental condition (N = 609), were included as participants. I noted some important similarities and differences between this study and Study 1 in determining the sample size for this study. As with Study 1, I'm also looking

at the interaction between motivation and gratitude expressions. In this case, however, motivation is measured as opposed to manipulated, and so the opportunity to also look at 3-way (gratitude / condition / disposition) interactions is absent. However, persuasion awareness is manipulated in this study. In order to test hypotheses concerning interactions between gratitude, dispositional motivation, and persuasion awareness, I feel that at least 500 participants will be required to test all of my hypotheses based on both theoretical models.

Participants mostly identified as White (76.5%), but some identified as Asian (10.5%), Black (6.2%), American Indian or Alaskan Native (1.5%), Native Hawaiian or other Pacific Islander (1.0%) or other (4.1%). Additionally, 8.9% of participants identified as Hispanic or Latino. One participant (0.2%) didn't provide information about their race. Most participants completed at least some college coursework (41.1%), with an additional 38.3% having completed a Bachelor's Degree, an additional 9% having completed a Master's Degree, and an additional 2.1% having completed a Doctoral Degree. For the remaining participants, the highest educational level achieved was High School / GED (9.0%), and one participant (0.2%) didn't provide information about their educational background. Participants grew up in a variety of places, describing their hometowns as either suburban (42.7%), urban (29.4%), a small town (20.7%), or rural (7.1%).

### **Procedure**

Participants were recruited for a study on "Evaluating Political Communication". First, they were asked to complete a brief questionnaire assessing individual differences in motivational orientation, personality, and demographics. Participants were then asked

to read an e-mail to supporters of a political candidate that ends with a request for their continued support in the future.

To manipulate gratitude, the message either included an expression of thanks for their previous support, opening with the statement, “I wanted to take a moment to say ‘thank you’,” or instead began with the neutral statement, “I wanted to take a moment to contact you.” To manipulate persuasion awareness, before reading the message, some participants were told: “As you may be aware, political candidates use a variety of strategies to persuade voters. In addition to using more traditional advertisements to sway voters, e-mails are also frequently used to influence their opinions and behaviors. Imagine having received the following e-mail from a candidate you had supported in the past, who is now campaigning for re-election. You will be asked questions about your reactions on the following pages” (high persuasion awareness). Alternatively, some participants were told: “As you may be aware, political candidates use a variety of methods to reach voters. In addition to using more traditional forms of communication, e-mails are also frequently used to convey messages to voters. Imagine having received the following e-mail from a candidate you had supported in the past, who is now campaigning for re-election. You will be asked questions about your reactions on the following pages” (low persuasion awareness).

After viewing the message, basic need support and perceived sincerity were measured with items assessing participants’ reactions to the e-mail. As in Study 1, these ten items were presented to each participant in random order to control for order effects. Participants were then asked how they thought this e-mail would affect their actions, and were presented with a checklist of behaviors a person could volunteer to perform on

behalf of a candidate's campaign. They were asked to check whether or not they would be willing to perform each after having received the message. Compliance was measured as the number of activities checked by each participant. As in Study 1, the measure of state helping motivation used by Weinstein and Ryan (2010) was modified to assess participants' state motivation toward helping the candidate's campaign. As an additional measure of compliance, participants were asked to indicate the degree to which they felt the message would increase or decrease the likelihood of their voting for the candidate. On the last page of the survey, participants were presented with a link to a webpage where they could learn more about how to support future candidates for political office. Compliance was measured as whether or not they clicked on the link.

### **Measures**

***Manipulation check.*** To assess whether the manipulation of persuasion awareness was effective, an item was included which asked participants the extent to which they agreed with the following statement: "I could tell that someone was attempting to influence me". Participants indicated their agreement with this item on a seven-point Likert-type scale (mean = 5.21, SD = 1.60).

***Dispositional motivation type.*** As in Study 1, the General Causality Orientation Scale (GCOS: Deci & Ryan, 1985) was used to assess participants' dispositional motivational orientation (see Appendix B), which was again considered as a moderator variable in this study. The extent to which a participant was relatively more autonomously motivated, versus controlled, was computed by subtracting their standardized mean response across control items (mean = 4.05, SD = .74, alpha = .79) from their standardized mean response across autonomy items (mean = 5.36, SD = .78,

alpha = .86). Using this classification strategy, 287 participants were classified as autonomous and 320 were classified as controlled in this study. Two participants, who could not be classified because their difference scores equaled zero, were excluded from analyses using this variable.

**Personality questionnaire.** As in Study 1, the 7-item Agreeableness scale from the BFI (John, Naumann, & Soto, 2008) was used to assess dispositional agreeableness (see Appendix C, mean = 3.69, SD = .66, alpha = .75), along with seven filler items from the other four scales, and the 5-item Altruism scale of the Prosocial Personality Battery (Penner, 2002; see Appendix D) was also administered (mean = 2.77, SD = .79, alpha = .78). These two constructs, agreeableness and altruism, were again included as control variables.

**Basic need support.** Participants' experiences of relatedness-need support were assessed with a 3-item Likert-type scale: "This message makes me feel that my support would be appreciated", "This message makes me feel valued by others as a person", "This message makes me feel a sense of connection with others" (mean = 3.70, SD = 1.52, alpha = .87). Participants' experiences of autonomy-need support were assessed with the following three items: "This message makes me feel pressured" (reverse-scored), "This message makes me feel that I can choose for myself whom to support", "This message makes me feel free to make my own decisions about politics" (mean = 4.03, SD = 1.27, alpha = .67). Relatedness-need support and autonomy-need support were considered as mediator variables.

**Perceived sincerity.** Four items were used to assess perceived sincerity, which participants responded to on a Likert-type scale: "The message was sincere", "The

message was genuine”, “The message felt fake” (reverse-scored), and “The message truly reflected the feelings of its author” (mean = 3.29, SD = 1.52, alpha = .91). Perceived sincerity was considered as a mediator variable.

***Checklist of behaviors.*** Participants were presented with a checklist of 17 voluntary behaviors they could perform on behalf of the candidate, and were asked to check all of the activities they would be willing to perform. As in Study 1, a range of behaviors was listed, varying in amount of time or commitment required, with at least a few that almost anyone would be willing to do (examples: Help post campaign posters, Tell someone I know about the candidate, Make a monetary donation to the campaign, Make phone calls to promote the candidate’s message, Put a campaign sign in my yard). The primary outcome variable, compliance was measured as the number of activities checked by each participant (mean = 3.52, SD = 3.13).

***State motivation.*** Participants were asked why they would be willing to perform these activities for the candidate and to indicate their agreement with the following items using a Likert-type scale: “Because I would feel like I should” (controlled), “Because it would be important to me” (autonomous), “Because I think I would enjoy it” (autonomous), “Because I’d feel like a bad person if I didn’t” (controlled), “Because I would want to” (autonomous), “Because I would feel like I have to” (controlled). These items are based on items from Weinstein and Ryan’s (2010) state motivation to help scale. Each participant’s level of state autonomous motivation was generated by averaging their responses to the three autonomous items (mean = 4.25, SD = 1.63, alpha = .84), and their level of state controlled motivation was generated by averaging their responses to the three controlled items (mean = 2.72, SD = 1.39, alpha = .79). State

autonomous motivation and state controlled motivation were considered as mediator variables.

**Voting.** Participants were asked how they thought the message would affect their vote. They were asked to indicate the degree to which they felt the message would increase or decrease (on a scale from 1 –strongly decrease to 7 –strongly increase) the likelihood of their voting for the candidate (mean = 4.02, SD = 1.16). Voting was considered as an outcome variable.

**Link to webpage.** When participants were told that the study was over, they were provided with a link to a webpage where they could learn more about how to support future candidates for political office:

<http://www.fec.gov/pages/brochures/citizens.shtml>

Compliance was measured as whether or not they clicked on the link before exiting the survey, and this was considered as an outcome variable. Eighteen participants (3.0%) clicked on the link.

### **Analysis Plan**

I will run a series of hierarchical regression analyses to test the influence of gratitude, persuasion awareness, and motivation type on each of the outcome variables and each of the mediators. Gratitude, which was manipulated in this study, will be coded as 1 if gratitude was present and 0 if gratitude was not present. Persuasion awareness, which was also manipulated, will be coded 1 for high persuasion awareness and 0 for low persuasion awareness. Dispositional motivation type will be coded as 1 for autonomous motivation type and -1 for controlled motivation type. As in Study 1, for each of these analyses each of these three predictors will be entered on the first step, the three two-way

multiplicative interaction terms will be entered on the second step, and the single three-way multiplicative interaction term will be entered on the third step (Aiken & West, 1991).

## **Results**

Results from Study 2 are described below. These results attempt to expand on and complement the results from Study 1 by further addressing the primary questions guiding this dissertation, namely under what conditions do gratitude expressions lead to enhanced and diminished compliance with a request, and what are the psychological mechanisms underlying both of these outcomes. Table 10 displays the means and standard deviations of each outcome variable and each mediator variable across the gratitude conditions. The two moderators under consideration in this study are dispositional motivation type and persuasion awareness, which was manipulated.

Table 11 displays the correlations between gratitude and the proposed moderating variables and the three dependent variables (i.e., number of activities, whether participants clicked on the link, and whether participants provided their e-mail address). Gratitude was positively correlated with voting intentions, and dispositional motivation type was positively correlated with number of activities. Table 12 displays the correlations between the proposed mediators and each of the dependent variables. All of the proposed mediators were positively correlated with number of activities and voting intentions. Table 13 displays the correlations between the dependent variables and two control variables, altruism and agreeableness. Both agreeableness and altruism were positively correlated with number of activities and voting intentions. Table 14 displays the correlations between the two control variables and each of the proposed mediators

(i.e., relatedness support, autonomy support, sincerity, state autonomous motivation, and state controlled motivation). All of the proposed mediators were positively related to both control variables, with the exception of state controlled motivation, which was not correlated with agreeableness.

### **Did the manipulation of persuasion awareness affect the manipulation check?**

First, I examined the influences of gratitude, persuasion awareness, and motivation type, and their interactions, on the manipulation check item, which assessed the extent to which participants felt that someone was attempting to influence them. The overall prediction model, with all main effects and interaction effects included, did not account for significant variance in the number of activities checked,  $F(7,597)=1.157, p=.326, R^2=.013$ . However, because the manipulation check item was correlated with the dispositional measures of altruism and agreeableness, a separate regression model was run that included both of these scales as control variables. The overall prediction model now accounted for significant variance in the number of activities checked,  $F(9,595)=2.118, p=.026, R^2=.031$ , but the only variable that significantly predicted the manipulation check item was dispositional altruism ( $Beta = -.108, p = .011$ ). Participants scoring lower in altruism were more likely to feel that someone was attempting to influence them. The manipulation of persuasion awareness did not significantly influence this item ( $Beta = -.046, p = .430$ ).

### **Do motivation type and persuasion awareness moderate the influence of gratitude expressions on compliance?**

As a first step toward addressing this question, I examined the influences of gratitude, persuasion awareness, and motivation type, and their interactions, on the

number of activities the participant checked. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in the number of activities checked,  $F(7,599)=3.592, p=.001, R^2=.040$ . Moreover, the gratitude by motivation type interaction was significant ( $Beta=-.204, p=.012$ ; see Table 15 for a summary of results). As can be seen in Figure 9, gratitude led participants to check a greater number of activities when motivation type was controlled, and fewer activities when it was autonomous, supporting the moderational components of hypotheses 3 and 4. Additionally, the gratitude by persuasion awareness interaction was marginally significant ( $Beta=-.121, p=.083$ ). As can be seen in Figure 10, gratitude led participants to check a greater number of activities when persuasion awareness was low, and fewer activities when persuasion awareness was high, supporting the moderational components of hypotheses 5 and 10. A significant main effect was also observed for motivation type ( $Beta=.249, p=.002$ ), such that autonomous motivation predicted a greater number of activities than controlled motivation.

Because number of activities was correlated with the dispositional measures of altruism and agreeableness (see Table 13), a separate regression model was run that included both of these scales as control variables. The overall prediction model again accounted for significant variance in the number of activities checked,  $F(9,597)=4.572, p=.000, R^2=.064$ . Moreover, the same pattern of results emerged. Again, the gratitude by motivation type interaction was significant ( $Beta=-.202, p=.012$ ; see Table 16 for a summary of results), supporting the moderational components of hypotheses 3 and 4, and the gratitude by persuasion awareness interaction was again marginally significant ( $Beta=-.115, p=.097$ ), supporting the moderational components of

hypotheses 5 and 10. A significant main effect was also observed for motivation type ( $Beta=.236, p=.004$ ), with autonomous motivation predicting a greater number of activities than controlled motivation.

Next, I conducted a hierarchical regression analysis that examined the influence of gratitude, motivation type, and persuasion awareness, and their interactions, on whether or not the participant clicked on the link to learn more about how to support candidates for office. The overall prediction model, with all main effects and interaction effects included, did not account for significant variance in whether people clicked on the link,  $F(7,599)=.633, p=.729, R^2=.007$ . Moreover, none of the main effects or interaction effects was in the significant or marginal range. As in Study 1, this lack of effects on this variable may have resulted from the low variability observed on it, with only a small percentage of participants having clicked on the link.

Looking at whether participants felt that the message would influence their vote, I ran an additional hierarchical regression analysis that examined the influence of gratitude, motivation type, and persuasion awareness, and their interactions. The overall prediction model, with all main effects and interaction effects included, did not account for significant variance in the voting variable,  $F(7,594)=.881, p=.521, R^2=.010$ . However, a significant main effect of gratitude was observed ( $Beta=.127, p=.028$ ). Participants felt that the message would more positively influence their vote when gratitude was expressed in the message, compared to when it was not, supporting the main effect prediction of hypothesis 1a. Additionally, because the voting variable was correlated with altruism and agreeableness (see Table 13), a separate regression analysis was run that included both of these scales as control variables. With these controls included, the

overall prediction model accounted for significant variance in the voting variable,  $F(9,592)=3.911, p=.000, R^2=.056$ , and the main effect of gratitude remained significant ( $Beta=.124, p=.028$ ), again providing support for the main effect prediction of hypothesis 1a.

**What mediates the effect of gratitude expressions, and the interaction between gratitude expressions and motivation type, and between gratitude expressions and persuasion awareness, on compliance?**

To examine the potential role of each mediator in explaining the main effect of gratitude on voting, the interaction between gratitude and motivation type on number of activities, and the interaction between gratitude and persuasion awareness on number of activities, I ran five additional hierarchical regression analyses, each with one of the five proposed mediating variables (i.e., autonomy support, relatedness support, sincerity, state autonomous motivation, and state controlled motivation) as the criterion variable. Because all of the mediators were correlated with the dispositional measures of altruism and agreeableness (with one exception; see Table 14), these two scales were included as control variables in each of the regression models.

First, I examined the influence of gratitude, motivation type, and persuasion awareness, and their interactions, on relatedness support. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in relatedness support,  $F(9,597)=4.733, p=.000, R^2=.067$ . Although the interaction between gratitude and motivation type was not significant ( $Beta=-.055, p=.496$ ), and the interaction between gratitude and persuasion awareness was not significant ( $Beta=-.070, p=.308$ ), a significant main effect of gratitude was observed ( $Beta=.115, p=.040$ ).

Messages with a gratitude expression produced greater relatedness support than those without a gratitude expression, offering support for the mediational prediction of hypothesis 1a. Relatedness support may be a mediator of the influence of gratitude on voting.

I conducted an additional hierarchical regression analysis to further examine the possible mediating role of relatedness support in explaining the effect of gratitude on voting. In this analysis, relatedness support was entered along with each of the three predictors (and two controls, altruism and agreeableness) on the first step, the three two-way multiplicative interaction terms entered on the second step, and the single three-way multiplicative interaction term entered on the third step. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in voting,  $F(10,591)=35.706, p=.000, R^2=.377$ . Results support mediation in that a) the mediator, relatedness support, was a significant predictor of voting ( $Beta=.586, p=.000$ ), and b) the effect of gratitude was reduced in size (from  $Beta=.124, p=.028$  to  $Beta=.059, p=.202$ ; Baron & Kenny, 1986). I also performed a Sobel test (Sobel, 1982) to determine if the indirect effect of relatedness support was significant, which Baron and Kenny's method does not address. This test revealed that relatedness support significantly mediated the relation between gratitude and voting ( $z=2.039, p=.041$ ). Considered together, these analyses suggest that gratitude influences voting because it affects perceptions of relatedness support, supporting the mediational prediction of hypothesis 1a.

Next, I examined the influence of gratitude, motivation type, and persuasion awareness, and their interactions, on autonomy support. The overall prediction model,

with all main effects and interaction effects included, accounted for significant variance in autonomy support,  $F(9,597)=3.081, p=.001, R^2=.044$ . However, no significant (or marginal) main effects or interactions were observed.

I then examined the influence of gratitude, motivation type, and persuasion awareness, and their interactions, on perceived sincerity. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in sincerity,  $F(9,597)=4.488, p=.000, R^2=.063$ . A significant main effect of gratitude was also observed ( $Beta=.141, p=.012$ ). Messages with a gratitude expression produced greater perceptions of sincerity than those without a gratitude expression. Thus, sincerity may be a possible mediator of the influence of gratitude on voting, which would support the mediational predictions in hypotheses 5-10.

I conducted an additional hierarchical regression analysis to further examine the possible mediating role of perceived sincerity in explaining the effect of gratitude on voting. In this analysis, sincerity was entered along with each of the three predictors (and two controls, altruism and agreeableness) on the first step, the three two-way multiplicative interaction terms entered on the second step, and the single three-way multiplicative interaction term entered on the third step. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in voting,  $F(10,591)=36.347, p=.000, R^2=.381$ . Results support mediation in that a) the mediator, sincerity, was a significant predictor of voting ( $Beta=.589, p=.000$ ), and b) the effect of gratitude was reduced in size (from  $Beta=.124, p=.028$  to  $Beta=.043, p=.354$ ; Baron & Kenny, 1986). I also performed a Sobel test (Sobel, 1982) to determine if the indirect effect of sincerity was significant, which Baron and Kenny's method does not

address. This test revealed that sincerity significantly mediated the relation between gratitude and voting ( $z=2.510, p=.012$ ). Considered together, these analyses suggest that gratitude influences voting because it affects perceptions of sincerity, supporting the mediational predictions in hypotheses 5-10.

Bootstrapping analyses were used to further examine the roles of the proposed mediators in explaining the relation between gratitude and voting, and to examine them within the same model. As in my Study 1 mediation analyses, I used the PROCESS macro for SPSS (Hayes, 2013) to generate 5,000 bootstrap samples in order to estimate a bias-corrected 95% confidence interval (CI) for the indirect effect of each proposed mediator. Each of the five proposed mediators was simultaneously included in a model predicting voting, along with gratitude included as the predictor, and with dispositional motivation type, altruism and agreeableness included as covariates. Consistent with the analyses reported above, this analysis revealed that the indirect effects of relatedness support ( $Beta = .0414, CI = .0027, .1067$ ) and perceived sincerity ( $Beta = .0638, CI = .0167, .1352$ ) were significant. Moreover, the indirect effects of autonomy support ( $Beta = -.0009, CI = -.0195, .0120$ ), state autonomous motivation ( $Beta = -.0014, CI = -.0260, .0179$ ), and state controlled motivation ( $Beta = .0023, CI = -.0252, .0300$ ) were not significant.

However, because state autonomous motivation and state controlled motivation were both positively correlated with number of activities (see Table 12), it's possible that they mediate the interactions between gratitude expressions and motivation type, and between gratitude expressions and persuasion awareness, on number of activities. I next examined the influence of gratitude, motivation type, and persuasion awareness, and their

interactions, on state autonomous motivation. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in state autonomous motivation,  $F(9,593)=2.343, p=.013, R^2=.034$ . A marginally significant effect of persuasion awareness was observed ( $Beta=.105, p=.073$ ).

Finally, I examined the influence of gratitude, motivation type, and persuasion awareness, and their interactions, on state controlled motivation. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in state controlled motivation,  $F(9,593)=5.530, p=.000, R^2=.077$ . A marginally significant main effect of persuasion awareness was observed ( $Beta=.137, p=.076$ ). Moreover, the interaction between gratitude and motivation type was significant ( $Beta=-.188, p=.019$ ), and the interaction between gratitude and persuasion awareness was also significant ( $Beta=-.136, p=.049$ ). When motivation type was controlled, gratitude produced greater state controlled motivation, and when motivation type was autonomous, gratitude produced lower state controlled motivation (see Figure 11), supporting the mediational predictions in hypotheses 3 and 4. And, when persuasion awareness was low, gratitude led to greater state controlled motivation, but when persuasion awareness was high, gratitude led to lower state controlled motivation (see Figure 12). These results suggest that state controlled motivation may be a mediator of both of these interactive effects (i.e., between gratitude and motivation type, and between gratitude and persuasion awareness) on number of activities, supporting the mediational predictions in hypotheses 3 and 4.

I conducted an additional hierarchical regression analysis to further examine the possible mediating role of state controlled motivation in explaining the interactive effects

between gratitude and motivation type and between gratitude and persuasion awareness on number of activities. In this analysis, state controlled motivation was entered along with each of the three predictors (and two controls, altruism and agreeableness) on the first step, the three two-way multiplicative interaction terms entered on the second step, and the single three-way multiplicative interaction term entered on the third step. The overall prediction model, with all main effects and interaction effects included, accounted for significant variance in number of activities,  $F(10,592)=9.382, p=.000, R^2=.137$ . Results support mediation of both interactions in that a) the mediator, state controlled motivation, was a significant predictor of number of activities ( $Beta=.270, p=.000$ ), b) the interaction between gratitude and motivation type was reduced in size (from  $Beta=-.202, p=.012$  to  $Beta=-.154, p=.048$ ), and c) the interaction between gratitude and persuasion awareness was reduced in size (from  $Beta=-.115, p=.097$  to  $Beta=-.084, p=.213$ ; Baron & Kenny, 1986). I also performed two Sobel tests (Sobel, 1982) to determine if the indirect effects of state controlled motivation were significant for both interactions. The first Sobel test revealed that state controlled motivation did significantly mediate the interactive effect between gratitude and motivation type on number of activities ( $z=-2.220, p=.026$ ). The second Sobel test revealed that state controlled motivation was a marginally significant mediator of the interactive effect between gratitude and persuasion awareness on number of activities ( $z=-1.894, p=.058$ ).

Bootstrapping analyses were used to further examine the roles of the proposed mediators in explaining the interactions between gratitude expressions and motivation type, and between gratitude expressions and persuasion awareness, on compliance, and to examine the mediators within the same models. I again used the PROCESS macro for

SPSS (Hayes, 2013) to generate 5,000 bootstrap samples in order to estimate a bias-corrected 95% confidence interval (CI) for the indirect effect of each proposed mediator. Each of the five proposed mediators was simultaneously included in two models predicting number of activities. In the first model, gratitude was included as the predictor and dispositional motivation type was included as the moderator. Persuasion awareness, altruism, and agreeableness were included as covariates. Consistent with the analyses reported above, this analysis showed the indirect effect of state controlled motivation ( $Beta = -.0965$ ,  $CI = -.2827, -.0058$ ) was significant. However, the indirect effects of relatedness support ( $Beta = -.0349$ ,  $CI = -.2616, .0248$ ), autonomy support ( $Beta = -.0071$ ,  $CI = -.0963, .0211$ ), perceived sincerity ( $Beta = -.0137$ ,  $CI = -.1834, .0315$ ), and state autonomous motivation ( $Beta = .0858$ ,  $CI = -.3369, .4851$ ) were not significant.

In the second model, gratitude was included as the predictor and persuasion awareness was included as the moderator, and dispositional motivation type, altruism, and agreeableness were included as covariates. Again consistent with the analyses reported above, this analysis showed the indirect effect of state controlled motivation ( $Beta = -.0972$ ,  $CI = -.2956, -.0039$ ) was significant. However, the indirect effects of relatedness support ( $Beta = -.0395$ ,  $CI = -.2392, .0231$ ), autonomy support ( $Beta = -.0173$ ,  $CI = -.1401, .0130$ ), perceived sincerity ( $Beta = -.0210$ ,  $CI = -.2036, .0333$ ), and state autonomous motivation ( $Beta = -.2754$ ,  $CI = -.7072, .1251$ ) were not significant.

### **Summary**

In summary, Study 2 provided evidence that gratitude expressions influence compliance, in that participants felt that a message would more positively influence their vote when gratitude was expressed in the message, compared to when it was not,

supporting the main effect prediction in hypothesis 1a. Furthermore, this influence of gratitude was mediated by enhanced perceptions of relatedness support, which provides evidence for the mediational prediction in hypothesis 1a, and greater perceptions of sincerity, which provides evidence for the mediational predictions in hypotheses 5-10. Additionally, the influence of gratitude on number of activities was moderated by motivation type. Being thanked led participants to check a greater number of activities when motivation type was controlled, and fewer activities when it was autonomous, supporting the moderational predictions in hypotheses 3 and 4. This effect was mediated by differences in state controlled motivation, supporting the mediational predictions in hypotheses 3 and 4. Additionally, persuasion awareness moderated the influence of gratitude expressions on compliance, in that being thanked led participants to check a greater number of activities when persuasion awareness was low, and fewer activities when persuasion awareness was high, supporting the moderational predictions in hypotheses 5 and 10. State controlled motivation also played a mediational role in this process, again supporting the mediational predictions in hypotheses 3 and 4.

### **Discussion**

Most of the research examining the influence of gratitude expressions on compliance has focused on their benefits, but some empirical and anecdotal evidence has suggested that they can both facilitate and inhibit compliance with requests. In this dissertation, I have attempted to understand when and why gratitude expressions are effective in eliciting compliance, and also when and why they may lead to diminished levels of compliance. The results of these two experiments suggest that gratitude does indeed elicit compliance, and they also provide evidence for the psychological

mechanisms mediating this influence. Specifically, in Study 2 participants felt messages that included an expression of thanks would more positively influence their vote, compared to messages that did not include an expression of thanks. This effect occurred “across the board”, and was not moderated by any variable that was manipulated or measured. Moreover, the influence of gratitude expressions on compliance was mediated by enhanced perceptions of sincerity and enhanced perceptions of relatedness need support.

However, the results of these studies also suggest that gratitude expressions accompanying requests do not necessarily always lead to enhanced compliance, and can lead to diminished compliance in some cases. I found evidence for both of the hypothesized moderators of the influence of gratitude expressions on compliance, and also found evidence for psychological mechanisms mediating these effects. Specifically, in Study 1, motivation type and persuasion awareness were both shown to influence the effectiveness of gratitude expressions on compliance. First, with regard to motivation type, gratitude expressions led to a greater number of activities checked when a person’s motivation was controlled, but led to fewer activities checked when a person’s motivation was autonomous. Second, with regard to persuasion awareness, gratitude expressions produced more activities checked when persuasion awareness was low, but produced fewer activities checked when persuasion awareness was high. Moreover, it was revealed that changes in state autonomous motivation mediated the link between gratitude with different levels of persuasion awareness on compliance. When persuasion awareness was low, being thanked led to higher levels of state autonomous motivation, which led to a higher number of activities being checked. When persuasion awareness was high, being

thanked led to lower levels of state autonomous motivation, which led to a lower number of activities being checked.

In Study 2, I found additional evidence for the moderation of gratitude expressions on compliance by both motivation type and persuasion awareness. Although now in a political context, the pattern of results was consistent with the findings from Study 1, in that gratitude expressions led participants to check a greater number of activities when motivation type was controlled, and led participants to check fewer activities when motivation type was autonomous. Moreover, this effect was mediated by differences in state controlled motivation. Also, persuasion awareness again moderated the influence of gratitude expressions on compliance, in that gratitude led participants to check a greater number of activities when persuasion awareness was low, and fewer activities when persuasion awareness was high. State controlled motivation also played a mediational role in explaining the interaction between gratitude expressions and persuasion awareness on compliance.

### **Theoretical Implications**

The results of both of these studies supported hypotheses that were based on insights from psychological theory on human motivation (i.e., self-determination theory; Deci, 1971; Deci & Ryan, 2000) and persuasion (i.e., the persuasion knowledge model; Friestad & Wright, 1994). Specifically, the current findings regarding the moderating role of motivation type offer support for Hypotheses 3 and 4, which suggested that when a person's motivation is autonomous, gratitude expressions can be expected to decrease compliance because it decreases their motivation to perform the behavior, but when a person's motivation is controlled, gratitude expressions will lead to increased compliance

because it increases their motivation to perform the behavior. These hypotheses were based on the concept of motivation crowding, also known as the “overjustification effect” (Deci, 1971; Morgan, 1981), which suggests that when a person’s behavior is externally induced through rewards and punishments, autonomous motivation to perform the behavior can be undermined, resulting in diminished performance of the behavior. Results from both studies found gratitude expressions led participants to check a greater number of activities when motivation type was controlled, and led participants to check fewer activities when motivation type was autonomous. Moreover, this effect was mediated by changes in state controlled motivation (in Study 2), such that being thanked increased state controlled motivation for people who initially possessed a controlled motivational orientation, leading to greater compliance. Among individuals who initially possessed an autonomous motivational orientation, however, being thanked decreased state controlled motivation, and thereby decreased compliance. Thus, the hypotheses based on the “overjustification effect” (i.e., Hypotheses 3 and 4) were supported both with regard to their moderational and mediational predictions. Expressions of gratitude, like other external inducements, appear to have the capacity to undermine the behavior of autonomously motivated individuals. Alternatively, Hypotheses 1b and 2b, which predicted the opposite pattern of moderation through a process of mediation based on support of basic psychological needs, were not supported by the results of either study.

Additionally, the findings regarding the moderating role of persuasion awareness offer support for Hypotheses 5 and 10, which predicted that under high persuasion awareness, a ‘thank you’ would lead to decreased compliance, and that when persuasion awareness was low, a ‘thank you’ would lead to increased compliance. In both Study 1

and Study 2, gratitude expressions produced a greater number of activities checked when persuasion awareness was low, but produced fewer activities checked when persuasion awareness was high. These results are in line with previous findings of Carey, Clique, Leighton, and Milton (1976), who found that although business was increased among customers who were called and thanked for their business, this effect was diminished among customers who were called, thanked, and also told about a special upcoming sale. It seems probable that increased persuasion awareness (i.e., as a result of being informed of the sale) reduced the effect of gratitude in this previous study.

However, the mediating role of sincerity in explaining the interaction between gratitude and persuasion awareness, as predicted by Hypotheses 5 and 10, was not supported in the present research. Instead, and similar to the findings regarding the process underlying the motivation type moderation effect described above, the results suggest that motivational dynamics also played a role in mediating the effect of persuasion awareness. In Study 1, it was revealed that changes in state autonomous motivation mediated the link between gratitude with different levels of persuasion awareness on compliance. In Study 2, however, changes in state controlled motivation appeared to play the mediational role in explaining this interaction. The discrepancy in type of motivation that was found to mediate this process across both studies is intriguing. It may be the case that, since Study 1 involved a request to engage in proenvironmental behavior and Study 2 involved a request to engage in political behavior, autonomous motivation was more relevant to the behavior under investigation in Study 1 (i.e., because a clean environment is likely something that everyone wants) and controlled motivation was more relevant to the behavior under investigation in Study

2 (i.e., because supporting a hypothetical political candidate is unlikely to be something people want to do, but may be induced to feel that they should do).

Evidence for two of the hypothesized mediators was found with regard to explaining why gratitude expressions made people feel that they were more likely to vote for a political candidate. In Study 2, participants felt messages that included an expression of thanks would more positively influence their vote, compared to messages that did not include an expression of thanks. This influence was mediated by enhanced perceptions of relatedness support, supporting Hypothesis 1a, and enhanced perceptions of sincerity, supporting mediational predictions proposed in Hypotheses 5-10. That relatedness support played a mediational role here is consistent with the findings of Grant and Gino (2010), who found that being thanked for a past helping act facilitates compliance with a future request because it supports relatedness needs, and specifically, because it makes a person feel that their actions are valued by other people. The other mediator found to play a role here, perceived sincerity, was highly correlated with relatedness need support in Study 2, which is not surprising since feelings of relatedness resulting from an interpersonal expression should be greater to the extent that the expression is perceived as sincere. A greater perception of autonomy need support was the one proposed mediating variable that was not supported by the results from either study.

The findings regarding the mediational roles of relatedness support and perceived sincerity are also consistent with other research suggesting that gratitude leads to positive interpersonal outcomes because it brings attention to other people in one's environment who are likely to be responsive relationship partners, and thus serves the function of

“binding” individuals together (Algoe, 2012). That the present research involved a message from a political candidate is particularly interesting to think about from this perspective, as it has been primarily concerned with the dynamics of gratitude in romantic relationships up to this point. Research examining the relationship binding function of gratitude has also tended to consider how it helps people maintain already existing relationships, rather than how it may help them form new ones. The results of the present studies suggest that gratitude can foster positive relations between people and relatively novel individuals and groups. Additionally, these findings are consistent with those of Panagopoulos (2011), who found that thanking people for voting in previous political elections increased the likelihood that they would vote in subsequent elections, and provide the more nuanced implication that being thanked by a particular political candidate may increase the likelihood that a person will vote for that political candidate in the future.

### **Practical Implications**

The results of these studies also have practical implications for nearly everyone, and particularly for people who use gratitude expressions in their interactions with others, and for organizations that use gratitude expressions in their messages to the public. The implications are particularly relevant to those interactions and messages that also contain a request for assistance. Generally, the use of gratitude expressions in these contexts can be encouraged, as it has been shown to lead to greater levels of compliance through increasing perceptions of sincerity and supporting people’s basic psychological need for relatedness and social connection. This appears to be particularly true for political messages that target widely practiced behaviors, such as voting. However, when asking a

person to go “above and beyond” by engaging in additional behaviors, such as participating in voluntary activities in order to protect the environment, or performing extra tasks on behalf of a politician’s campaign, using gratitude expressions may only “work” sometimes. In such instances, the present findings suggest that gratitude expressions should only be used to promote compliance when the target of the appeal possesses a controlled motivation to engage in these activities, or when the persuasive intentions of the expresser are not obvious.

Moreover, these results also suggest instances where individuals and groups may be better off refraining from the use of gratitude expressions. If the person on the receiving end of such an expression already possesses an autonomous motivation to perform the behavior, then thanking them can actually make them less likely to comply. So, rather than thanking someone for doing something that they’ve already internalized, and that they truly wanted to do, an individual or group attempting to motivate continued behavior may be better off simply not mentioning it. Additionally, when a persuasive motivation on the part of the expresser is salient, they may also be better off refraining from using gratitude expressions to promote compliance. The present findings also lend themselves to the recommendation made by Carey et al. (1976) that practical applications of gratitude expressions refrain from saying anything that sounds overly manipulative (e.g., like a sales promotion), or otherwise risk minimizing their effects, and potentially even reducing levels of compliance. If, as La Rochefoucauld suggests, “the gratitude of most [people] is but a secret desire of receiving greater benefits”, then these benefits only appear to be achievable to the extent that people are able to keep this secret desire to themselves.

### **Limitations and Future Research Directions**

There are limitations to the present studies that should also be considered. First, the control conditions in both studies involved messages in which an expression of gratitude was not included. Because these messages were neutral controls, the question can be raised as to whether the effects of gratitude expressions were not unique to gratitude, and whether similar effects would have been found if expressions of other positive emotions were included instead. For example, in Study 1, would an expression of optimism about the potential for volunteers to preserve the natural environment similarly affect targets of the message? And, in Study 2, would expressions of other positive emotions on the part of a political candidate, such as humility or pride, similarly influence voters? Future research on the effects of gratitude expressions, which includes control conditions that include expressions of other positive emotions, would help tease apart the unique implications of gratitude expressions, and of other positive emotions, in social contexts.

Also, although evidence was found for persuasion awareness as a moderator of the influence of gratitude expressions on compliance in Study 2, the manipulation of persuasion awareness did not significantly influence the manipulation check item. This item assessed the extent to which participants agreed with the statement, "I could tell that someone was attempting to influence me". The failure to find a significant effect of the manipulation on this item could have occurred for a number of reasons. Generally participants agreed with the item, in that a mean of 5.21 (SD = 1.60) was observed on a 7-point scale. Therefore, a ceiling effect could have made it difficult to detect the influence of the manipulation on this item, which increases my confidence that the effects

obtained for the persuasion awareness variable are valid. In retrospect, it is not surprising that participants largely agreed with this item, since they were aware they were participating in a psychological study, and one that examines political communication. People are often suspicious that they are being manipulated in both psychological and political contexts, so the default response to this item may simply be to agree in these contexts. Moreover, there was a vague setup to the item, in that the prompt preceding the set of items simply stated, “now that you've read the message, please indicate the extent to which you agree with the following statements using the scale below”. Had participants been given a more specific prompt, such as one that asked them to think about the item only in relation to the message they read, more variability may have been observed on the item and the chances of finding a significant effect of the manipulation would have been greater.

Additionally, both studies examined the influence of gratitude expressions in hypothetical scenarios presented online. Future research should examine these dynamics using more high impact studies. Although past studies of gratitude and compliance have taken place in field settings and have incorporated behavioral measures, these studies have hardly focused on the psychological mechanism underlying the observed effects. Whereas the present research uses hypothetical scenarios in order to understand these dynamics, a fruitful direction for future studies would be to generalize the results obtained to field settings and actual behavior. Another related limitation of the present studies is that two of the outcome variables used in these studies saw very low response rates. The potential to achieve higher rates of response on relevant outcome measures may be greater in studies that use high impact designs in more realistic settings.

## Conclusion

The primary goals of this dissertation were to understand when and why gratitude expressions enhance compliance and when and why they lead to diminished compliance. Two online experiments of adult participants were conducted in order to address these questions. These studies were designed to test hypotheses that were based on insights from psychological theory on human motivation (i.e., self-determination theory) and persuasion (i.e., the persuasion knowledge model). Results suggest that gratitude expressions increase compliance by increasing perceptions of sincerity and by supporting relatedness needs. However, results also suggest that gratitude expressions do not always enhance compliance, and can sometimes lead to diminished compliance. In support of my hypotheses, motivation type and persuasion awareness were both found to moderate the influence of gratitude expressions on compliance, and these effects were mediated by changes in state motivation.

This research broadens our understanding of gratitude in social contexts by showing that expressions of gratitude can not only facilitate compliance with requests, but also sometimes lead to reductions in compliance. Moreover, it is among the first lines of research to demonstrate when and why each of these outcomes is more likely to occur. This research also contributes by uncovering some of the psychological dynamics underlying the influence of gratitude on compliance. I hope that this work inspires future research on the complex role of gratitude in social contexts.

Table 1

*Means and standard deviations of outcome variables and mediator variables for each gratitude condition of Study 1.*

<i>Thanks</i>		
<i>i.e., Gratitude with Low Persuasion Awareness</i>		
<i>Variable</i>	<i>M</i>	<i>SD</i>
Number of Activities	9.96	4.48
Clicked Link	.03	.17
Provided E-mail	.14	.35
Relatedness Support	4.62	1.32
Autonomy Support	4.63	1.27
Sincerity	5.26	1.22
State Autonomous	6.50	1.73
State Controlled	5.11	1.80
<i>Thanks in Advance</i>		
<i>i.e., Gratitude with High Persuasion Awareness</i>		
<i>Variable</i>	<i>M</i>	<i>SD</i>
Number of Activities	8.74	4.67
Clicked Link	.04	.20
Provided E-mail	.12	.33
Relatedness Support	4.56	1.24
Autonomy Support	4.68	1.26
Sincerity	5.14	1.15
State Autonomous	6.09	1.89
State Controlled	4.70	1.79
<i>Control Condition</i>		
<i>i.e., No Gratitude Expression</i>		
<i>Variable</i>	<i>M</i>	<i>SD</i>
Number of Activities	8.87	5.18
Clicked Link	.01	.11
Provided E-mail	.13	.33
Relatedness Support	4.60	1.25
Autonomy Support	4.43	1.34
Sincerity	5.26	1.18
State Autonomous	6.21	1.70
State Controlled	5.01	1.86

Table 2

*Correlations between predictor variables and outcome variables in Study 1.*

	1	2	3	4	5	6	7
1. Manipulated Motivation Type	--						
2. Dispositional Motivation Type	.01	--					
3. Gratitude	.02	.03	--				
4. Gratitude (With High vs. Low Persuasion Awareness)	.00	-.02	--	--			
5. Number of Activities	.09*	.25**	.05	-.13*	--		
6. Clicked Link	-.03	.06	.07	.03	.03	--	
7. Provided E-mail	.00	-.02	.00	-.03	.19**	.01	--

Note. <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 3

*Correlations between mediator variables and outcome variables in Study 1.*

	1	2	3	4	5	6	7	8
1. Relatedness Support	--							
2. Autonomy Support	.47**	--						
3. Sincerity	.64**	.39**	--					
4. State Autonomous	.35**	.21**	.32**	--				
5. State Controlled	.19**	-.13**	.09 <sup>+</sup>	.17**	--			
6. Number of Activities	.38**	.27**	.38**	.46**	.11*	--		
7. Clicked Link	.08 <sup>+</sup>	.04	.02	.03	.05	.03	--	
8. Provided E-mail	.23**	.10*	.19**	.21**	.06	.19**	.01	--

Note. <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 4

*Correlations between control variables and outcome variables in Study 1.*

	1	2	3	4	5
1. Number of Activities	--				
2. Clicked Link	.03	--			
3. Provided E-mail	.19**	.01	--		
4. Agreeableness	.22**	.03	.11*	--	
5. Altruism	.18**	.05	.12**	.28**	--

*Note.* <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 5

*Correlations between control variables and mediator variables in Study 1.*

	1	2	3	4	5	6	7
1. Agreeableness	--						
2. Altruism	.28**	--					
3. Relatedness Support	.30**	.17**	--				
4. Autonomy Support	.21**	.09*	.46**	--			
5. Sincerity	.29**	.11*	.64**	.39**	--		
6. State Autonomous	.34**	.21**	.35**	.21**	.32**	--	
7. State Controlled	.09*	.15**	.19**	-.13**	.09 <sup>+</sup>	.17**	--

Note. <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 6

*Results from a hierarchical regression model examining the influence of gratitude, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked.*

<i>Step and Predictors</i>	B	SE	Beta	F (df)	R <sup>2</sup>
Step 1				12.97 (3, 496)**	.07
Gratitude	.35	.44	.04		
Dispositional Motivation Type	1.20	.21	.25**		
Manipulated Motivation Type	.42	.21	.09*		
Step 2				7.10 (6, 493)**	.07
Gratitude	.34	.44	.03		
Dispositional Motivation Type	1.37	.36	.29**		
Manipulated Motivation Type	.96	.36	.20**		
Gratitude X Dispositional Motivation Type	-.21	.44	-.04		
Gratitude X Manipulated Motivation Type	-.82	.44	-.14 <sup>+</sup>		
Dispositional Motivation Type X Manipulated Motivation Type	-.02	.21	.00		
Step 3				6.12 (7, 492)**	.08
Gratitude	.33	.44	.03		
Dispositional Motivation Type	1.38	.36	.29**		
Manipulated Motivation Type	.98	.36	.20**		
Gratitude X Dispositional	-.21	.44	-.04		

Motivation Type			
Gratitude X Manipulated Motivation Type	-.84	.44	-.14 <sup>+</sup>
Dispositional Motivation Type X Manipulated Motivation Type	.13	.36	.03
Gratitude X Dispositional Motivation Type X Manipulated Motivation Type	-.21	.44	-.04

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*Note.* <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 7

*Results from a hierarchical regression model examining the influence of gratitude, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked, controlling for dispositional measures of altruism and agreeableness.*

<i>Step and Predictors</i>	B	SE	Beta	F (df)	R <sup>2</sup>
Step 1				12.29 (5, 494)**	.11
Gratitude	.34	.43	.03		
Dispositional Motivation Type	.98	.21	.20**		
Manipulated Motivation Type	.45	.20	.09*		
Altruism	.77	.26	.13**		
Agreeableness	.84	.33	.12*		
Step 2				8.18 (8, 491)**	.12
Gratitude	.33	.43	.03		
Dispositional Motivation Type	1.18	.36	.25**		
Manipulated Motivation Type	1.00	.35	.21**		
Altruism	.80	.26	.14**		
Agreeableness	.81	.33	.11*		
Gratitude X Dispositional Motivation Type	-.24	.43	-.04		
Gratitude X Manipulated Motivation Type	-.83	.43	-.14 <sup>+</sup>		
Dispositional Motivation Type X Manipulated Motivation Type	-.02	.21	.00		
Step 3				7.32 (9, 490)**	.12
Gratitude	.32	.43	.03		

Dispositional Motivation Type	1.18	.36	.25**
Manipulated Motivation Type	1.02	.35	.21**
Altruism	.80	.26	.14**
Agreeableness	.81	.33	.12*
Gratitude X Dispositional Motivation Type	-.24	.43	-.04
Gratitude X Manipulated Motivation Type	-.85	.43	-.14 <sup>+</sup>
Dispositional Motivation Type X Manipulated Motivation Type	.17	.35	.04
Gratitude X Dispositional Motivation Type X Manipulated Motivation Type	-.28	.43	-.05

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*Note.* <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 8

*Results from a hierarchical regression model examining the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked.*

<i>Step and Predictors</i>	B	SE	Beta	F (df)	R <sup>2</sup>
Step 1				9.57 (3, 324)**	.08
Gratitude (With High vs. Low Persuasion Awareness)	-1.12	.49	-.12*		
Dispositional Motivation Type	1.15	.25	.25**		
Manipulated Motivation Type	.14	.25	.03		
Step 2				5.01 (6, 321)**	.09
Gratitude (With High vs. Low Persuasion Awareness)	-1.12	.49	-.12*		
Dispositional Motivation Type	.96	.35	.21**		
Manipulated Motivation Type	-.03	.35	-.01		
Gratitude (With High vs. Low Persuasion Awareness) X Dispositional Motivation Type	.40	.49	.06		
Gratitude (With High vs. Low Persuasion Awareness) X Manipulated Motivation Type	.35	.49	.05		
Dispositional	-.11	.25	-.02		

Motivation Type X Manipulated Motivation Type					
Step 3				4.31 (7, 320)**	.09
Gratitude (With High vs. Low Persuasion Awareness)	-1.14	.49			-.12*
Dispositional Motivation Type	.96	.35			.21**
Manipulated Motivation Type	-.03	.35			-.01
Gratitude (With High vs. Low Persuasion Awareness) X Dispositional Motivation Type	.40	.49			.06
Gratitude (With High vs. Low Persuasion Awareness) X Manipulated Motivation Type	.36	.49			.06
Dispositional Motivation Type X Manipulated Motivation Type	-.22	.35			-.05
Gratitude (With High vs. Low Persuasion Awareness) X Dispositional Motivation Type X Manipulated Motivation Type	.21	.49			.03

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Note. <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 9

*Results from a hierarchical regression model examining the influence of gratitude with different levels of persuasion awareness, manipulated motivation type, and dispositional motivation type, and their interactions, on the number of activities the participant checked, controlling for dispositional measures of altruism and agreeableness.*

<i>Step and Predictors</i>	B	SE	Beta	F (df)	R <sup>2</sup>
Step 1				10.37 (5, 322)**	.14
Gratitude (With High vs. Low Persuasion Awareness)	-1.13	.47	-.12*		
Dispositional Motivation Type	.87	.25	.19**		
Manipulated Motivation Type	.18	.24	.04		
Altruism	.94	.31	.17**		
Agreeableness	1.00	.39	.14*		
Step 2				6.74 (8, 319)**	.14
Gratitude (With High vs. Low Persuasion Awareness)	-1.14	.48	-.12*		
Dispositional Motivation Type	.65	.35	.14 <sup>+</sup>		
Manipulated Motivation Type	-.02	.34	-.01		
Altruism	.97	.31	.17**		
Agreeableness	1.00	.40	.14*		
Gratitude (With High vs. Low Persuasion Awareness) X Dispositional Motivation Type	.45	.48	.07		
Gratitude (With High vs. Low	.42	.48	.07		

Persuasion Awareness) X Manipulated Motivation Type					
Dispositional Motivation Type X Manipulated Motivation Type	-.14	.24	-.03		
Step 3				6.01 (9, 318)**	.15
Gratitude (With High vs. Low Persuasion Awareness)	-1.16	.48	-.13*		
Dispositional Motivation Type	.66	.35	.14 <sup>+</sup>		
Manipulated Motivation Type	-.03	.34	-.01		
Altruism	.97	.31	.17**		
Agreeableness	1.00	.40	.14*		
Gratitude (With High vs. Low Persuasion Awareness) X Dispositional Motivation Type	.44	.48	.07		
Gratitude (With High vs. Low Persuasion Awareness) X Manipulated Motivation Type	.43	.48	.07		
Dispositional Motivation Type X Manipulated Motivation Type	-.27	.34	-.06		
Gratitude (With High vs. Low Persuasion Awareness) X Dispositional Motivation Type X Manipulated Motivation Type	.27	.48	.04		

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Note. <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 10

*Means and standard deviations of outcome variables and mediator variables for each gratitude condition of Study 2.*

<i>Gratitude Present</i>		
<i>Variable</i>	<i>M</i>	<i>SD</i>
Number of Activities	3.42	3.05
Clicked Link	.03	.18
Voting	4.11	1.12
Relatedness Support	3.82	1.52
Autonomy Support	4.03	1.27
Sincerity	3.44	1.56
State Autonomous	4.24	1.61
State Controlled	2.73	1.37
<i>Gratitude Absent</i>		
<i>Variable</i>	<i>M</i>	<i>SD</i>
Number of Activities	3.63	3.21
Clicked Link	.03	.16
Voting	3.92	1.19
Relatedness Support	3.57	1.52
Autonomy Support	4.04	1.28
Sincerity	3.13	1.47
State Autonomous	4.26	1.63
State Controlled	2.71	1.41

Table 11

*Correlations between predictor variables and outcome variables in Study 2.*

	1	2	3	4	5	6
1. Gratitude	--					
2. Persuasion Awareness	-.01	--				
3. Dispositional Motivation Type	-.01	-.02	--			
4. Number of Activities	-.03	-.02	.14**	--		
5. Clicked Link	-.01	.04	.03	.06	--	
6. Voting	.08 <sup>+</sup>	.01	-.03	.25**	.01	--

*Note.* <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 12

*Correlations between mediator variables and outcome variables in Study 2.*

	1	2	3	4	5	6	7	8
1. Relatedness Support	--							
2. Autonomy Support	.35**	--						
3. Sincerity	.82**	.39**	--					
4. State Autonomous	.42**	.29**	.40**	--				
5. State Controlled	.34**	.03	.30**	.33**	--			
6. Number of Activities	.32**	.20**	.30**	.51**	.25**	--		
7. Clicked Link	-.02	-.03	-.03	.02	.07 <sup>+</sup>	.06	--	
8. Voting	.61**	.31**	.61**	.39**	.35**	.25**	.01	--

Note. <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 13

*Correlations between control variables and outcome variables in Study 2.*

	1	2	3	4	5
1. Number of Activities	--				
2. Clicked Link	.06	--			
3. Voting	.25**	.01	--		
4. Agreeableness	.08*	.03	.18**	--	
5. Altruism	.17**	.04	.11**	.29**	--

*Note.* <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 14

*Correlations between control variables and mediator variables in Study 2.*

	1	2	3	4	5	6	7
1. Agreeableness	--						
2. Altruism	.29**	--					
3. Relatedness Support	.18**	.15**	--				
4. Autonomy Support	.15**	.17**	.35**	--			
5. Sincerity	.15**	.14**	.82**	.39**	--		
6. State Autonomous	-.02	.10*	.34**	.03	.30**	--	
7. State Controlled	.13**	.14**	.42**	.29**	.39**	.33**	--

Note. <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 15

*Results from a hierarchical regression model examining the influences of gratitude, persuasion awareness, and dispositional motivation type, and their interactions, on the number of activities the participant checked.*

<i>Step and Predictors</i>	B	SE	Beta	F (df)	R <sup>2</sup>
Step 1				4.39 (3, 603)**	.02
Gratitude	-.19	.25	-.03		
Persuasion Awareness	-.11	.25	-.02		
Dispositional Motivation Type	.44	.13	.14**		
Step 2				4.03 (6, 600)**	.04
Gratitude	.22	.35	.04		
Persuasion Awareness	.37	.36	.06		
Dispositional Motivation Type	.65	.22	.21**		
Gratitude X Persuasion Awareness	-.90	.50	-.13 <sup>+</sup>		
Gratitude X Dispositional Motivation Type	-.65	.25	-.15*		
Dispositional Motivation Type X Persuasion Awareness	.25	.25	.06		
Step 3				3.59 (7, 599)**	.04
Gratitude	.21	.35	.03		
Persuasion Awareness	.36	.36	.06		
Dispositional Motivation Type	.78	.25	.25**		
Gratitude X Persuasion Awareness	-.87	.50	-.12 <sup>+</sup>		

Awareness			
Gratitude X Dispositional Motivation Type	-.89	.35	-.20*
Dispositional Motivation Type X Persuasion Awareness	.00	.36	.00
Gratitude X Dispositional Motivation Type X Persuasion Awareness	.49	.50	.08

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*Note.* <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$

Table 16

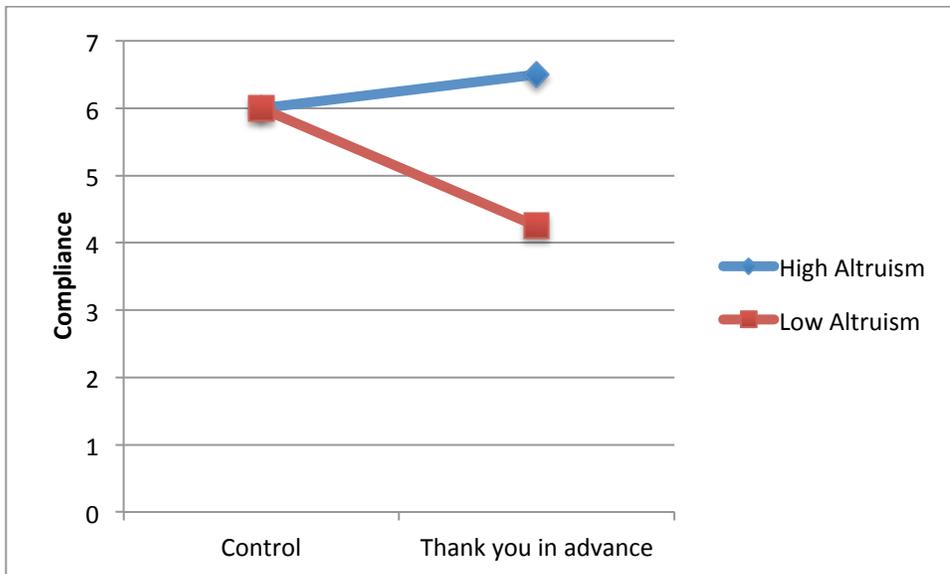
*Results from a hierarchical regression model examining the influences of gratitude, persuasion awareness, and dispositional motivation type, and their interactions, on the number of activities the participant checked, controlling for dispositional measures of altruism and agreeableness.*

<i>Step and Predictors</i>	B	SE	Beta	F (df)	R <sup>2</sup>
Step 1				5.91 (5, 601)**	.05
Gratitude	-.21	.25	-.03		
Persuasion Awareness	-.05	.25	-.01		
Dispositional Motivation Type	.42	.14	.13**		
Altruism	.65	.17	.16**		
Agreeableness	-.07	.21	-.02		
Step 2				4.98 (8, 598)**	.06
Gratitude	.19	.35	.03		
Persuasion Awareness	.41	.36	.07		
Dispositional Motivation Type	.60	.22	.19**		
Altruism	.63	.17	.16**		
Agreeableness	-.05	.21	-.01		
Gratitude X Persuasion Awareness	-.86	.50	-.12 <sup>+</sup>		
Gratitude X Dispositional Motivation Type	-.60	.25	-.14*		
Dispositional Motivation Type X Persuasion Awareness	.27	.25	.06		
Step 3				4.57 (9, 597)**	.06
Gratitude	.17	.35	.03		

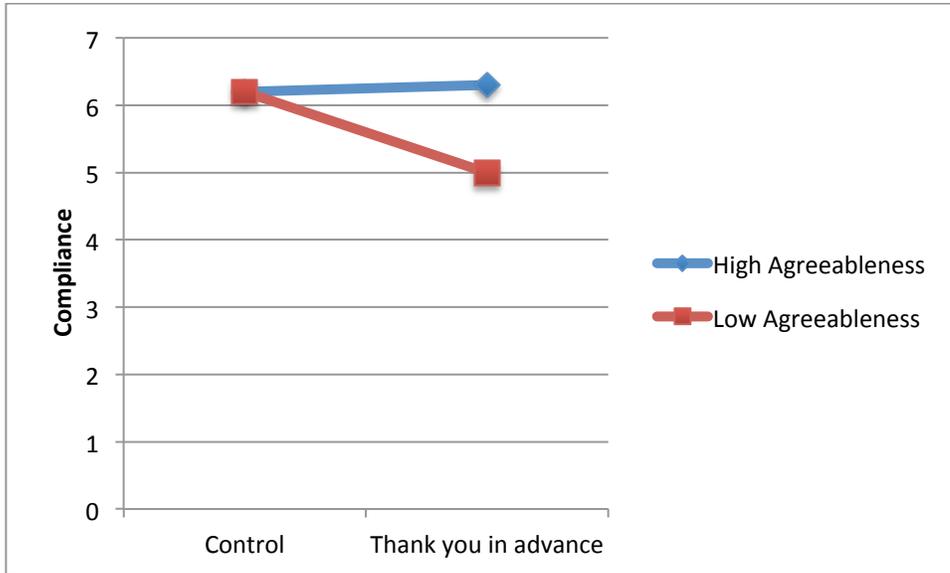
Persuasion Awareness	.40	.36	.06
Dispositional Motivation Type	.74	.26	.24**
Altruism	.63	.17	.16**
Agreeableness	-.05	.21	-.01
Gratitude X Persuasion Awareness	-.82	.50	-.12 <sup>+</sup>
Gratitude X Dispositional Motivation Type	-.88	.35	-.20*
Dispositional Motivation Type X Persuasion Awareness	-.02	.36	.00
Gratitude X Dispositional Motivation Type X Persuasion Awareness	.56	.50	.09

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*Note.* <sup>+</sup> $p < .10$ , \* $p < .05$ , \*\* $p < .01$



*Figure 1.* Results from a previous experiment (Dwyer, 2014) that found a significant interaction between dispositional altruism and the presence/absence of the phrase “Thank you in advance” on compliance.



*Figure 2.* Results from a previous experiment (Dwyer, 2014) that found a significant interaction between dispositional agreeableness and the presence/absence of the phrase “Thank you in advance” on compliance.

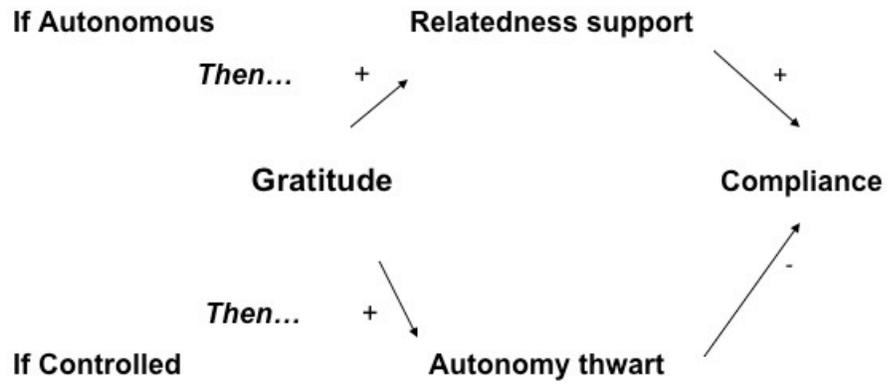
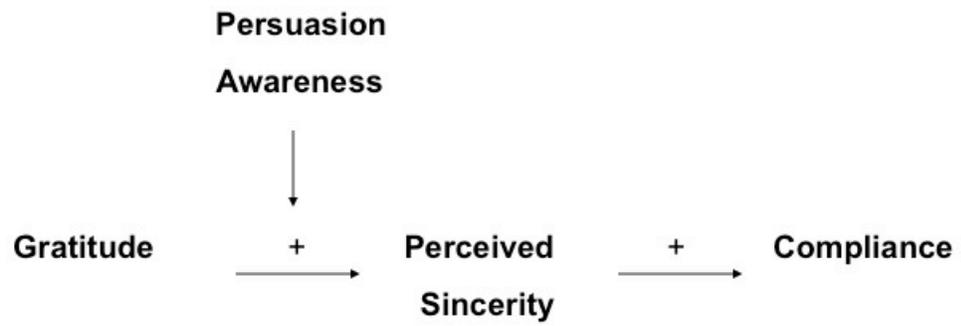
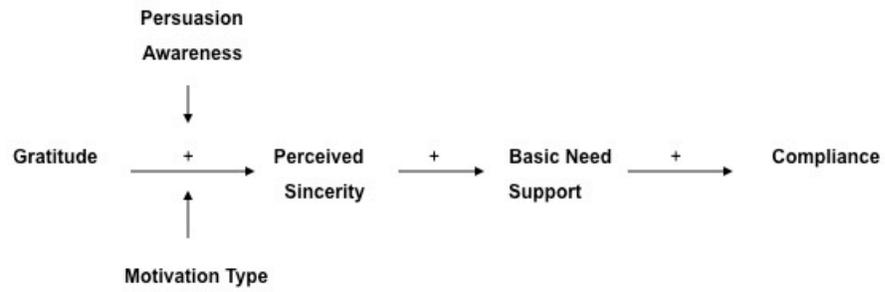


Figure 3. Depiction of Hypotheses 1a-b and 2a-b.



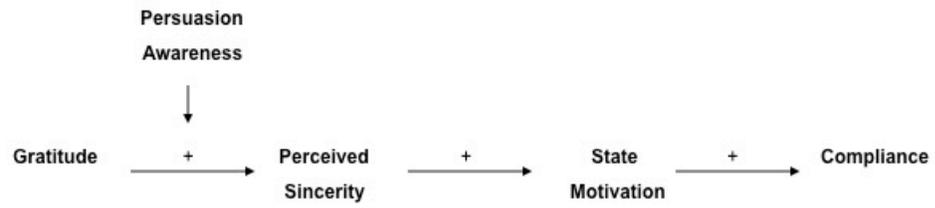
*Figure 4.* Depiction of Hypothesis 5.



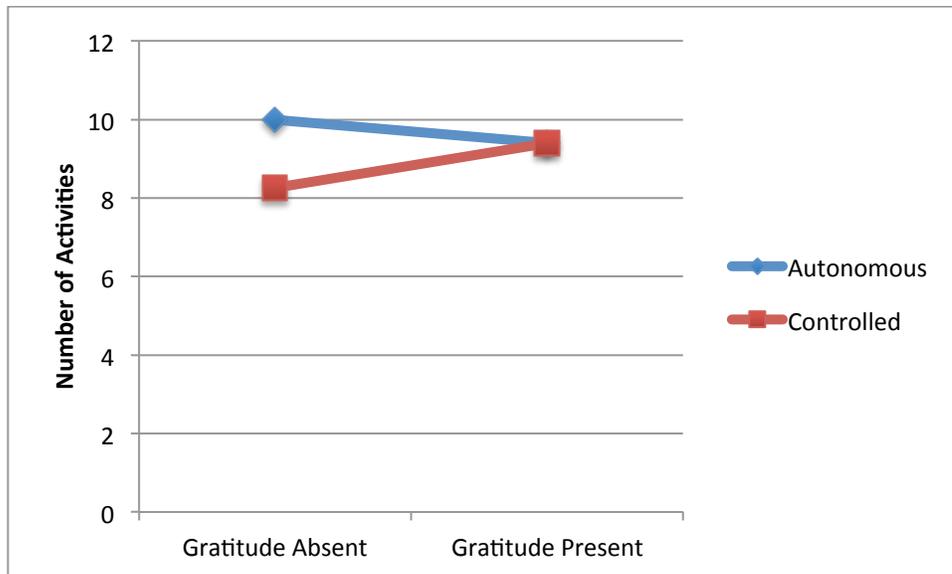
*Figure 5.* Depiction of Hypotheses 6-9.

	Low Persuasion Awareness	High Persuasion Awareness
Autonomous	High Perceived Sincerity High Relatedness Support High Compliance Boost	Lower Perceived Sincerity Lower Relatedness Support Lower Compliance Boost
Controlled	Lower Perceived Sincerity Lower Relatedness Support Lower Compliance Boost	Lowest Perceived Sincerity Autonomy Thwart Less Compliance

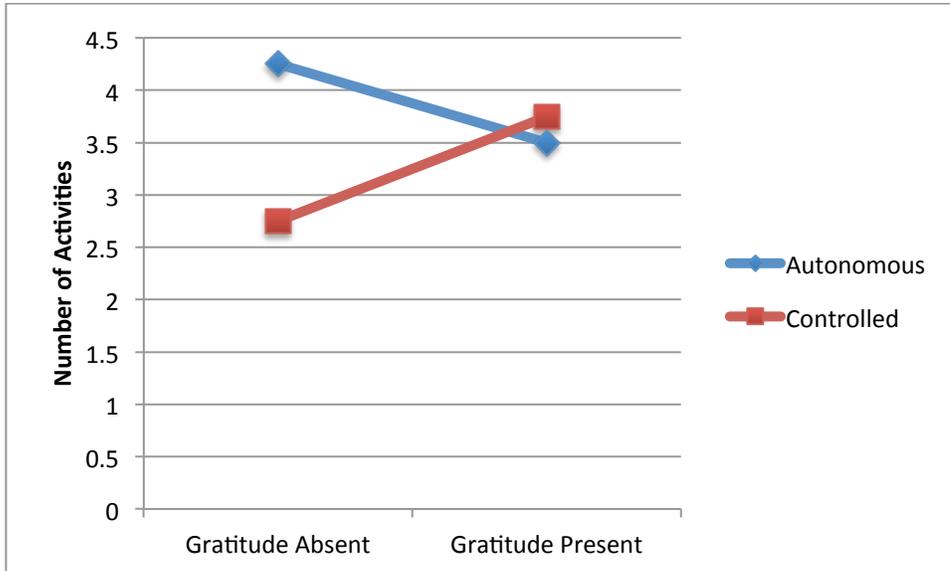
*Figure 6.* Depiction of Hypotheses 6-9.



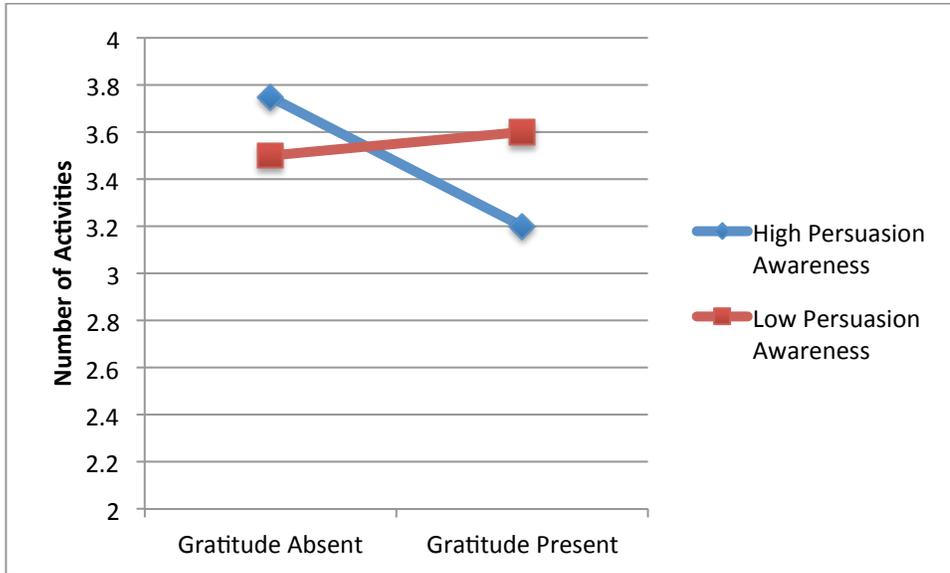
*Figure 7.* Depiction of Hypothesis 10.



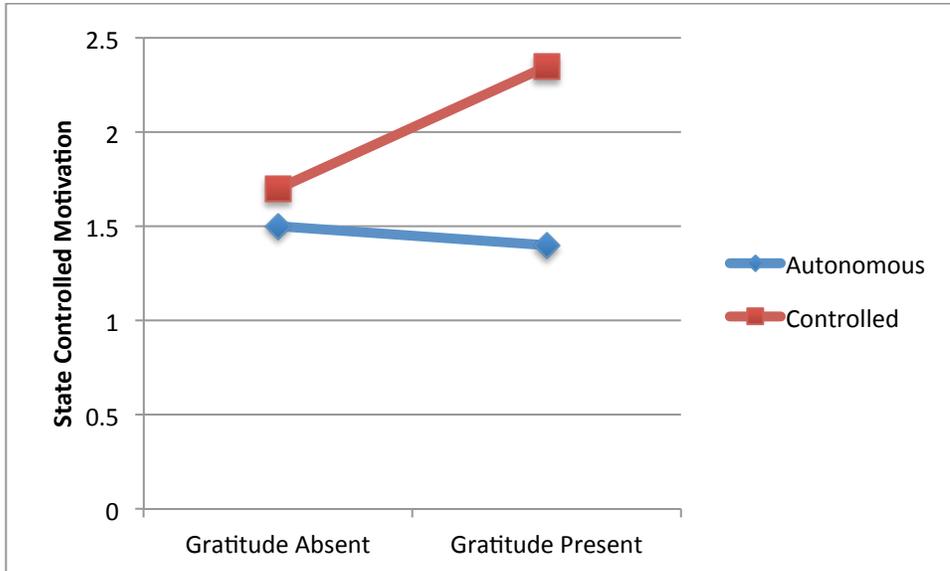
*Figure 8.* Depiction of the gratitude by motivation type interaction on number of activities found in Study 1.



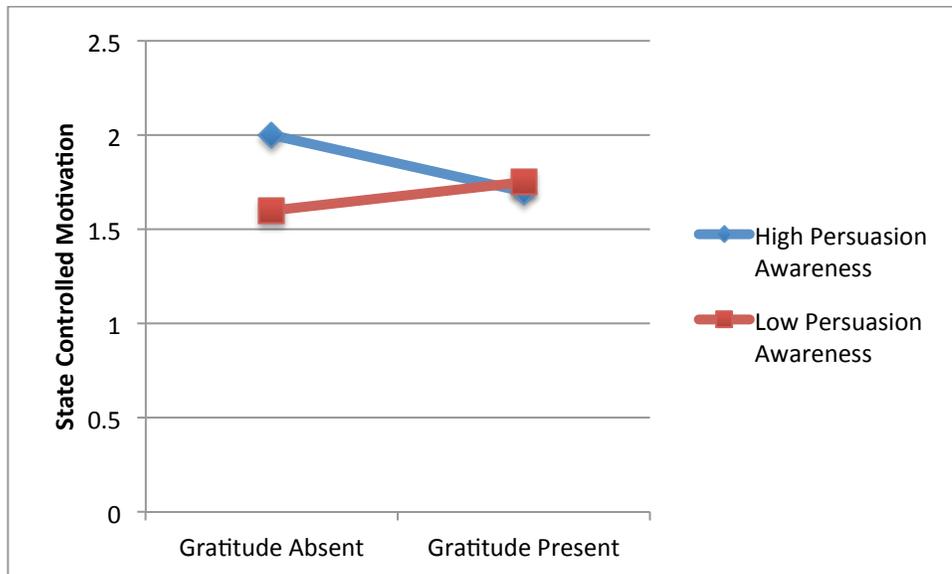
*Figure 9.* Depiction of the gratitude by motivation type interaction on number of activities found in Study 2.



*Figure 10.* Depiction of the gratitude by persuasion awareness interaction on number of activities found in Study 2.



*Figure 11.* Depiction of the gratitude by motivation type interaction on state controlled motivation found in Study 2.



*Figure 12.* Depiction of the gratitude by persuasion awareness interaction on state controlled motivation found in Study 2.

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## Appendix A

This previous study was a 2 (gratitude: present, absent) X 2 (persuasion awareness: high, low) experiment, in which participants were recruited for a study on “Evaluating Political Communication”, and were asked to evaluate an e-mail to supporters of a political candidate that ends with a request for support in the form of donations and volunteers. To manipulate gratitude, the message either included an expression of thanks for having voted for them in the past, or not, and simply mentioned that they had voted for them in the past. To examine the influence of gratitude on compliance under conditions of high versus low persuasion awareness, participants were asked to imagine having received the e-mail from a candidate either in the midst of campaign season during the weeks leading up to the election (i.e., high persuasion awareness) or after campaign season had ended during the weeks after the election (i.e., low persuasion awareness). Specifically, participants were asked to imagine having received the e-mail from a candidate they had supported in the past either “during the weeks leading up to an election, in the middle of political campaign season, when efforts to influence voters are in full swing” (i.e., high persuasion awareness) or “during the weeks after an election, after political campaign season had come to an end, when those elected are getting ready to take office” (i.e., low persuasion awareness). Similar to Study 2, participants were then presented with a checklist of behaviors they could volunteer to perform on behalf of the candidate and were asked to check whether or not they would be willing to perform each. Compliance was measured as the number of activities checked by each participant.

## Appendix B

Instructions: On these pages you will find a series of vignettes. Each one describes an incident and lists three ways of responding to it. Please read each vignette and then consider the responses in turn. Think of each response option in terms of how likely it is that you would respond in that way. We all respond in a variety of ways to situations, and probably each response is at least slightly likely for you. If it is very unlikely that you would respond in the way described in a given response, you would select numbers 1 or 2. If it is moderately likely, you would respond in the midrange of numbers; and if it is very likely that you would respond as described, you would select the 6 or 7. Please select one number for each of the three responses for each vignette.

**1. You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:**

a) What if I can't live up to the new responsibility?

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

b) Will I make more at this position?

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

c) I wonder if the new work will be interesting.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

**2. You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think:**

a) It's not what you know, but who you know.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

b) I'm probably not good enough for the job.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	



very unlikely

moderately likely

very likely

**5. When you and your friend are making plans for Saturday evening, it is likely that you would:**

a) Leave it up to your friend; he (she) probably wouldn't want to do what you'd suggest.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

b) Each make suggestions and then decide together on something that you both feel like doing.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

c) Talk your friend into doing what you want to do.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

**6. You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:**

a) You'll try to fit in with whatever is happening in order to have a good time and not look bad.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

b) You'll find some people with whom you can relate.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

c) You'll probably feel somewhat isolated and unnoticed.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

**7. You are asked to plan a picnic for yourself and your fellow employees. Your style**

**for approaching this project could most likely be characterized as:**

a) Take charge: that is, you would make most of the major decisions yourself.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) Follow precedent: you're not really up to the task so you'd do it the way it's been done before.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) Seek participation: get inputs from others who want to make them before you make the final plans.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**8. Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:**

a) You didn't really expect the job; you frequently get passed over.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

b) The other person probably "did the right things" politically to get the job.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

c) You would probably take a look at factors in your own performance that led you to be passed over.

1	2	3	4	5	6	7
very unlikely			moderately likely			very likely

**9. You are embarking on a new career. The most important consideration is likely to be:**

a) Whether you can do the work without getting in over your head.



b) Feel excited about the higher status and salary that is involved.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

c) Feel stressed and anxious about the upcoming changes.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

**12. Within your circle of friends, the one with whom you choose to spend the most time is:**

a) The one with whom you spend the most time exchanging ideas and feelings.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

b) The one who is the most popular of them.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

c) The one who needs you the most as a friend.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

**13. You have a school-age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:**

a) Talk it over with your daughter to understand further what the problem is.

1	2	3	4	5	6	7
very unlikely			moderately likely		very likely	

b) Scold her and hope she does better.

1	2	3	4	5	6	7
---	---	---	---	---	---	---



very unlikely

moderately likely

very likely

**16. Your friend's younger sister is a freshman in college. Your friend tells you that she has been doing badly and asks you what he (she) should do about it. You advise him (her) to:**

a) Talk it over with her and try to see what is going on for her.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

b) Not mention it; there's nothing he (she) could do about it anyway.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

c) Tell her it's important for her to do well, so she should be working harder.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

**17. You feel that your friend is being inconsiderate. You would probably:**

a) Find an opportunity to explain why it bothers you; he (she) may not even realize how much it is bothering you.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

b) Say nothing; if your friend really cares about you he (she) would understand how you fell.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

c) Demand that your friend start being more considerate; otherwise you'll respond in kind.

1                    2                    3                    4                    5                    6                    7

very unlikely

moderately likely

very likely

### Appendix C

Instructions: Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please choose a number for each statement to indicate the extent to which you agree or disagree with that statement.

1	2	3	4	5
Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree Strongly

I see myself as *someone who . . .*

- \_\_\_\_\_ 1. tends to find fault with others
- \_\_\_\_\_ 2. is depressed, blue
- \_\_\_\_\_ 3. is original, comes up with new ideas
- \_\_\_\_\_ 4. is reserved
- \_\_\_\_\_ 5. is helpful and unselfish with others
- \_\_\_\_\_ 6. is full of energy
- \_\_\_\_\_ 7. starts quarrels with others
- \_\_\_\_\_ 8. has a forgiving nature
- \_\_\_\_\_ 9. tends to be disorganized
- \_\_\_\_\_ 10. is generally trusting
- \_\_\_\_\_ 11. has an assertive personality
- \_\_\_\_\_ 12. can be cold and aloof
- \_\_\_\_\_ 13. is considerate and kind to almost everyone
- \_\_\_\_\_ 14. makes plans and follows through with them

## Appendix D

Instructions: Below are several different actions in which people sometimes engage. Read each of them and decide how frequently you have carried it out in the past. Please select the response that best describes your past behavior. Use the scale presented below.

1	2	3	4	5
Never	Once	More than Once	Often	Very Often

1. I have helped carry a stranger's belongings (e.g., books, parcels, etc.).
2. I have allowed someone to go ahead of me in a line (e.g., supermarket, copying machine, etc.)
3. I have let a neighbor whom I didn't know too well borrow an item of some value (e.g., tools, a dish, etc.).
4. I have, before being asked, voluntarily looked after a neighbor's pets or children without being paid for it.
5. I have offered to help a handicapped or elderly stranger across a street.