

Intervening to Increase Expressions of Gratitude

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ABSTRACT

Five studies examined interventions to increase the frequency of expressions of gratitude by psychology students in two classes of a psychology course at a large university in southwest Virginia. Studies 1 and 4 included signing a paper when declaring an intention to express gratitude to people behaving prosocially, while studies 2, 3, and 5 included responding to writing prompts prior to declaring an intention to express gratitude. Students in one class of Study 5 were also offered Actively-Caring for People (AC4P) wristbands that served as “tangible reminders of kindness” (Geller, 2013). Students in all studies were given one week to express gratitude. Gratitude expression was measured by self-report on a survey administered during the psychology course. In all but the first and fourth studies, increased intentions to express gratitude were significantly higher in the Intervention class than the Control class. The impact of the interventions on reports of gratitude expression was inconsistent. Theoretical/methodological explanations and directions for future research are discussed.

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1.0 - Introduction

People place great value on receiving expressions of gratitude, but they often fail to express gratitude when it's called for. Although people believe their own expressions of gratitude are increasing, they believe expressions of gratitude from others are on the decline (Kaplan, 2012). In fact, less than 50% of 2000 people surveyed indicated they express gratitude to immediate family members on a daily basis. And, less than half of these people indicated they were "very likely" to express gratitude toward a service employee who assists them (Kaplan, 2012). This is problematic because receiving statements of gratitude is positively correlated with positive affect and negatively correlated with experiencing or expressing interpersonal aggression (DeWall et al., 2012).

Emmons and Crumpler (2000) defined gratitude as "an emotional response to a gift" (pg. 56), but researchers have discovered that gratitude (both the experience and expression of it) can be activated by general prosocial behavior. Increasing a person's sense of gratitude makes the person more likely to respond with thanks or other prosocial behaviors, even when such behaviors are costly to the performer (Bartlett & DeSteno, 2006). Expressions of gratitude typically include some variation of the word "thanks" or the phrase "thank-you" (Coulmas, 1981). Researchers have demonstrated that giving thanks can increase the occurrence of desired behaviors in various domains. In one longitudinal study, researchers discovered that people who were thanked after voting for public officials were more likely to vote in a subsequent election (Panagopoulos, 2011). Moreover, a recent series of experiments found that thanking people led to increases in the recipients' perceived self-worth, which in turn increased their subsequent frequencies

of prosocial behavior (Grant & Gino, 2010). Therefore, interventions that increase people's expressions of gratitude should increase the propensity of the recipient to perform prosocial behavior.

The term "prosocial behavior" is posited to have been created as an antonym to antisocial behavior (Batson, 1998). It's defined as voluntary behavior intended to help another person (Eisenberg et al., 2006). Given the beneficial impact of statements of sincere gratitude, expressing gratitude to others can be considered prosocial behavior (Coulmas, 1981). A complementary relationship has been found between expressing gratitude and experiencing positive affect such that the recipient of the gratitude experiences a boost in positive affect and is subsequently more likely to express gratitude to others (Emmons & McCullough, 2003).

Recipients of prosocial behavior are less likely to use drugs, have stronger interpersonal relationships, and are better able to recover from traumatic experiences (Carlo et al., 2011; Frazier et al., 2012; Lambert & Fincham, 2011). Performers of prosocial behavior also experience relationship benefits. In addition, people in organizational contexts benefit from prosocial behavior (also called organizational citizenship behavior or OCB). A recent meta-analysis indicated that performing OCB leads to higher job performance ratings for the performer, enhances individual and organizational efficiency and productivity, and results in higher customer satisfaction (Podsakoff et al., 2009). Developing effective interventions to increase frequencies of gratitude expression and other prosocial behaviors has been an aim of psychological science for decades.

2.0 - Preliminary Research

Interventions to increase expressions of gratitude were examined across three preliminary studies. Teie et al. (2011) assessed self-reported gratitude expression in the first study and assessed intentions to express gratitude as well as self-reported behavior in the second study. In the third preliminary study, Ekema-Agbaw et al. (2012) modified the independent variable from the second Teie et al. (2011) study and examined its impact on intentions to express gratitude and self-reported gratitude expression. In these studies, an intention to express gratitude was defined as either writing or circling “yes” in response to a statement regarding intention to express gratitude to another person for a prosocial act. In each study, thanking behavior was defined as the self-reported thanking of another person for a prosocial act. The second and third preliminary studies tested the hypotheses that reflecting on one’s legacy would increase the frequency of expressions of gratitude. Participants were introductory psychology students in two classes (i.e. a Monday-Wednesday class and a Tuesday-Thursday class) of the course at a large University in Southwest Virginia. Both classes received identical lectures taught by the same professor.

Since these studies were class activities incorporated into an introductory psychology course containing hundreds of students, informed consent was obtained by the professor, who emphasized that participation was optional and participants’ consent was implied by their return of any survey or other study-related document they completed. This procedure was consistent with the guidelines provided by the University Institutional Review Board.

The studies were quasi-experiments; each class represented an Intervention or Control condition and conditions were assigned by a coin flip. Data were collected in two

phases. In the first phase, participants received the experimental manipulation (based on their condition) and indicated their intentions to express gratitude to someone for prosocial behavior. They had one week to report their expressions of gratitude. One week later, their expressions of gratitude were measured in the second phase.

For the second and third preliminary studies (as well as the two current studies), students wrote a participant code on every survey sheet they completed. The participant code was five characters: the first letter of a participant's gender, the number of the day the participant was born, and the first two letters of the participant's father's first name. For example, a male participant born on the third day of a month with a father named Steven had the following participant code: **M03ST**. Finally, Chi Square tests of independence were used to examine the impact of each intervention on thanking intention and behavior.

2.1 - Study 1

Students in one class ($n = 398$) were assigned to the Intention condition, whereas students in the other class ($n = 425$) were in the No Intention condition. At the beginning of the first phase, Maslow's Hierarchy of Needs was described to students. Emphasis was placed on self-transcendence, the need at the top of the hierarchy. A self-transcendent person is able to establish a connection with something beyond the ego or to help others realize their potential (Huitt, 2007). Expressing gratitude to others for their prosocial behavior was described as a self-transcendent behavior since it could allow others to realize their potential as prosocial individuals. The professor also explained that expressions of gratitude are one component of the AC4P movement and described the movement as seeking to cultivate a more caring culture in the immediate community.

Prosocial behavior was framed as a type of AC4P behavior. Next, the professor provided examples of such behavior (e.g., changing someone's tire, paying for someone's meal, helping someone with a homework assignment, giving someone a ride). Then RAs distributed candy-bar coupons to every student. These coupons could be redeemed for a Hershey PayDay bar emblazoned with the phrase "Pay-It-Forward". The professor told students they could express gratitude to people by giving them the candy-bar and they should try to do so within one week. Students were also informed they could eat the candy-bar if they did not want to give it away. Candy-bars were used for this study because it was conducted during the last week in October (i.e., Halloween).

While receiving an explanation from the professor, students in the Intention condition received index cards containing a blank line. They were asked to sign their names on the index cards if they were committed to giving away their candy-bars. Research assistants (RAs) collected the cards immediately before students were dismissed. When leaving the lecture hall, students gave their coupons to RAs in exchange for candy-bars. One week later, students completed a survey indicating what they had done with their candy-bars and the types of behaviors they had observed. A greater portion of students in the Intention condition were expected to express gratitude to others with candy-bars than students in the No Intention condition.

In the Intention condition, 47% of 210 students gave away their candy-bar. In the No Intention condition, 43% of 289 students gave away their candy-bar. Although the difference was in the hypothesized direction, it was not significant ($p=.413$). The results are summarized in Table 1. Most of the remaining students in both classes either

reported eating the candy-bar or still having it. The second and third preliminary studies explored additional approaches to increasing the frequency of expressing gratitude.

2.2 - Study 2

In the second preliminary study, at the start of class students in the Intervention class were asked to spend five minutes responding to a legacy writing prompt on paper provided by the RAs. Specifically, the students ($n=232$) were given five minutes to answer the following question:

“Imagine you lose your life next week. What would you want people to say about you at your funeral? In other words: what would be your legacy?”

Students in the Control class ($n=161$) did not complete the legacy prompt. Both classes received identical lectures by the same professor. At the end of class the professor described Maslow’s Hierarchy of Needs, the candy-bars, and examples of prosocial behavior to both classes in a manner identical to the previous study. Then, RAs provided candy-bar coupons to students and papers containing the following statement five minutes before the end of each class,:

“I commit to recognize and reward one actively-caring behavior with a Pay-It-Forward candy-bar.”

Students wrote unique participant codes at the top of their papers before circling “yes” or “no” in response to the statement. RAs collected the papers before students were dismissed. The students exchanged coupons for candy-bars as they did in the previous study. One week later, students in both classes completed a survey that asked whether they had honored their Intention. It was hypothesized that more students in the Legacy

class would indicate an intention to express gratitude and give away candy-bars than students in the Control class.

As summarized in Table 2, a dependency was observed between Class and Intention. In the Legacy class, 91.8% of the 232 students intended to give away a candy-bar. In the Control class, 84.5% of the 161 students expressed the intention ($p < .05$). An analysis of self-reported thanking behavior found a dependency in the opposite direction. As summarized in Table 3, in the Control class, 62.3% of 161 students reported giving away their candy-bars; whereas 42.2% of 232 students in the Legacy class reported giving away their candy-bars ($p < .01$).

The results from the second Chi Square analysis were unexpected. Higher self-reported thanking behavior in the Control condition than the Legacy condition (after the Legacy condition had exhibited higher intention) indicated the possibility of a “boomerang effect”. The third preliminary study sought to replicate these results.

2.3 - Study 3

Participants were asked to give out thank-you cards rather than candy-bars. As depicted in Figures 1 and 2, these cards measured 10 x 3 inches and included an illustration of the mascot used at sporting events. This change enhanced the study’s social validity (Schwartz & Baer, 1991). In the real world, expressing gratitude for prosocial behavior with a thank-you card is more customary than doing so with a candy-bar. Students were instructed to tear the thank-you card in half, give the top half to a prosocial individual, fill out the survey on the bottom half of the card at their earliest convenience, and deliver the bottom half to class. The Legacy class ($n=309$) received the following

writing prompt: *“We live, we love, we learn, we leave a legacy. What do you want your legacy to be?”*

Students in the Legacy class were given five minutes to respond to the prompt. The second phase included a measure of students’ liking of the professor in order to rule out liking as an explanation for the observed results. The Control class ($n=256$) and the rest of the methodology remained identical to the previous study.

As depicted in Tables 4 and 5, the “boomerang effect” was replicated. A dependency was observed between Class and Intention such that a significantly greater percentage of students in the Legacy class (i.e., 76.7% of 309 students) intended to express gratitude with a thank-you card than students in the Control class (i.e., 37.9% of 256 students). Meanwhile, a dependency was observed between Class and Thanking such that a greater proportion of students in the Control class (i.e., 62.9% of 97 students) reported expressing gratitude than students in the Legacy class (i.e., 35.9% of 237 students). Both dependencies were significant ($p<.001$). These results are included in Tables 4 (for Intention) and 5 (for Thanking). Finally, a point biserial correlation was used to analyze students’ responses to the statement:

“I like Dr. Geller.”

Students used a 1-10 Likert scale (1= strongly disagree; 10 = strongly agree) to respond. Observed correlations were close to zero (i.e., .003 for the Control condition and -.007 for the Legacy condition) with p values greater than .9, which indicated the students’ liking of the professor was unrelated to their Intention. Liking was also found to be unrelated to students’ thanking behavior (i.e., .011 for the Control condition and .009 for the Legacy condition; $p>.8$).

2.4 - Limitations

In the three preliminary studies, one class experienced the Intervention condition while another class experienced the Control condition. Therefore, students in the Intervention conditions of those studies might have differed from students in the Control conditions on constructs relevant to the dependent variables. Preliminary Study 3 found this was not the case for the liking construct, but liking was not examined in the first two studies.

Another methodological concern was the students in both conditions of the previous studies did not receive an equal number of tasks during the intervention. Specifically, only the students in the Intervention conditions completed a writing task. A more internally valid study would have included an opportunity for students in the Control conditions to write about something. Perhaps the mere act of writing influenced the dependent variables. Thus, subsequent studies included a writing task for both conditions.

Perhaps the instructions given in the Legacy conditions enabled students to guess the hypotheses of the study and alter their behavior to confirm the hypotheses. This could explain the group differences in intention, but it would not explain why students in the Legacy condition who committed to expressing gratitude with a thank-you card were less likely to report thanking behavior than students in the Control condition. Reactance theory was proposed as a possible explanation. More specifically, it was hypothesized that the lower reported frequency of thanking behavior among students in the Legacy condition was due to their delayed realization they had been manipulated by the professor's writing task, leading to decreased perception of choice when making their

intention and less obligation to follow through with their intention to express gratitude. In other words, awareness that the professor attempted to influence them to behave in a certain manner made them less willing to behave in that manner.

3.0 - Study 4

In Study 4, both experimental conditions took place in the same setting; students attending both introductory psychology classes (i.e., the Monday-Wednesday class and the Tuesday-Thursday class) were randomly assigned to either the Intervention condition or the Control condition. If demand characteristics existed, this change in methodology allowed those characteristics to be distributed across conditions.

3.1 - Method

Study 4 examined the impact of an intervention on the frequency of intentions and reported expressions of gratitude for prosocial behavior. Intention was defined as either writing or circling “yes” in response to a statement regarding intention to thank another person for prosocial behavior. An expression of gratitude was defined as the self-reported thanking of another person for a prosocial act. Study 4 was conducted in the introductory psychology course of a large university in southwest Virginia. Students in each class were randomly assigned to either the Should condition ($n=224$) or the Control condition ($n=208$).

At the start of each class, the professor described Maslow’s Hierarchy of Needs, the role of prosocial behavior, and its relationship with the AC4P movement in a manner identical to the previous two studies. Next, the thank-you cards were described, students were given instructions regarding how to use them, and then provided with examples of prosocial behavior (e.g., giving someone a ride, helping someone with homework, changing someone’s tire, etc.). Students received a sheet of paper on which they wrote their participant code before circling “yes” or “no” in response to the statement on the paper. Students in the Control condition responded to the following statement:

“I have declared a Major”.

Students in the Should condition responded to the following statement:

“I should give out a thank-you card”.

Next, all students turned their papers over and wrote “yes” or “no” to the following statement (spoken aloud by the professor):

“I intend to give out a thank-you card”.

Students were informed if they wrote “yes” to the final statement, they could obtain a thank-you card (as depicted in Figures 1 and 2) at one of the exits to the lecture hall. They were also informed they should attempt to thank someone within one week. The RAs collected the sheets of paper. At the end of class, RAs provided thank-you cards to students requesting one as they exited the lecture hall. One week later, students responded to a brief in-class survey that asked them what they did with their thank-you card and assessed their liking of the professor (as in Preliminary Study 3). It was hypothesized that students in the Should condition who answered “yes” to their initial statement would be most likely to intend to give thank-you cards and would report more thanking behavior than students who answered “no” as well as Control students.

3.2 Results

Results were analyzed using Chi Square tests of independence. No dependency was observed between the experimental conditions and intention to give out a thank-you card. Answering “yes” in either condition led to similar proportions of students indicating intentions to express gratitude. In the Should condition, 62.9% of 224 students answered “yes” to the “I should” statement. In the Control condition, 59.6% of 208 students answered “yes” to the “Control” statement. In the Should condition, 64.5% of the 141

students who answered “yes” to the “I should” statement also answered “yes” to the thanking intention statement. In the Control condition, 61.3% of the 114 students who answered “yes” to the “Major” statement also answered “yes” to the thanking intention statement. Table 6 illustrates these results.

A dependency was observed between students’ answers to their initial statements and their responses to the intention statement. Of the students in the Should condition who answered “yes” to the “I should” statement ($n=141$), 64.5% also answered yes to the “I intend” statement. Of the students in the Should condition who answered “no” to the “I should” statement ($n=83$), 20.5% also answered “yes” to the intention statement ($p<.05$). A similar pattern was observed in the Control condition. Of the students in the Control condition who answered “yes” to the “Major” statement ($n=114$), 61.3% of them answered “yes” to the intention statement. Of the students who answered “no” to the “Major” statement ($n=84$), 45.2% of these students answered “yes” to the intention statement.

No dependency was observed between the experimental conditions and the frequencies of reported expressions of gratitude. Expressions of gratitude were similar in both conditions. Overall, 29.1% of 86 students in the Should condition and 31.4% of 118 students in the Control condition reported expressing gratitude after initially expressing an intention ($p>.05$). Finally, in both experimental conditions liking of the professor was significantly correlated with answering “yes” to the intention statement (.256 for the Should condition and .261 for the Control condition; $p<.05$), but did not correlate with self-reported thanking behavior (.032 and .045, respectively; $p>.05$).

3.3 Discussion

The hypothesis that students in the Should condition would have greater intentions to express gratitude and report expressing more gratitude than students in the Control condition was not supported. In addition, though the pattern of results (greater intentions in the Should condition, greater behavior in the Control condition) was consistent with the boomerang effect observed in the previous studies, the Should and Control conditions did not significantly differ in terms of intentions and behavior. Therefore, the boomerang effect was not observed. Perhaps asking students whether they had declared a major was not a neutral question. Declaring one's major indicates certainty in one's academic goals. Removing uncertainty from one's life can activate positive affect, which has been shown to make people more prosocial (Emmons & McCullough, 2003).

The lack of a boomerang effect in this study may have been due to the study's manipulation being weaker than the manipulations in the second and third preliminary studies. Perhaps the act of responding to a prompt/statement prior to declaring one's intentions made students more likely to express prosocial intentions. Since students in the control conditions in the second and third preliminary studies did not respond to writing prompts (while the legacy conditions responded to writing prompts), this possibility cannot be ruled out. Alternatively, since students likely communicated with each other after exiting class, learning that all students responded to a prompt (as opposed to only students in one condition responding to a prompt) may have prevented students in the Intervention condition from concluding that they had been manipulated by the professor. The absence of this conclusion would eliminate the impact of reactance and the occurrence of the boomerang effect. Finally, randomly assigning students in both

introductory psychology lectures to both conditions (which was not done in the previous studies) might have led to groups that were more similar to each other in all constructs relevant to expressing gratitude, thereby increasing the study's internal validity.

4.0 Study 5

4.1 - Background

This study was designed to reexamine the reflection intervention approach of Grant and Dutton (2012) as a way to increase students' intentions to thank someone and actual expressions of gratitude for prosocial behavior. Research has demonstrated that a person who reflects on reasons to be grateful (i.e., by counting blessings) experiences gratitude for the existence of those reasons, which in turn leads to heightened well-being (Emmons & McCullough, 2003). Grant and Dutton examined whether this heightened well-being disposition affected frequency of prosocial behavior and whether people who reflected on the benefits they provided others became more prosocial than people who reflected on the benefits they received from others.

One group of participants spent four days (15 minutes per day) writing in a journal about times in their lives when they engaged in behavior on behalf of others' welfare (Benefactor Condition), whereas another group spent the same amount of time writing about occasions when they were the beneficiaries of others' prosocial behavior (Beneficiary Condition). Grant and Dutton (2012) expected both conditions would increase frequency of prosocial behavior. They posited the Benefactor condition would increase prosocial behavior due to Self-perception theory (Bem, 1965). People who reflect on instances in their lives when they were benefactors would view themselves as benefactors, thereby leading to an increase in their prosocial behavior.

Grant and Dutton also considered the Norm of Reciprocity would affect prosocial behavior in the Beneficiary condition. The Norm of Reciprocity is a mutually beneficial pattern of exchanging goods/services because of a perceived obligation to return a favor

(Gouldner, 1960). People who reflect on times when they were the beneficiaries of others' prosocial behavior were expected to be influenced by the Norm of Reciprocity, thereby making them feel obligated to reciprocate directly (i.e., by performing prosocial behavior on behalf of the person who aided them) or indirectly (i.e., by aiding someone who has never aided them).

The Benefactor and Beneficiary conditions were applied to two studies. The Benefactor condition activates values (e.g., concern with protecting and promoting others) that Schwartz and Bardi (2001) discovered to be the most widely held across cultures. Therefore, Grant and Dutton hypothesized the participants in the Benefactor conditions would perform more prosocial behaviors than participants in the Beneficiary conditions (Verplanken & Holland, 2002).

In the first study, the dependent variable was the number of donation-solicitation calls students made during a two-week period at their place of employment. All participants had the same job at the same call center. The call center provided no performance incentives/bonuses for these calls; rather, the employees were paid a flat, hourly rate.

Supervisors at the call center recorded how many calls each employee made during the two weeks before writing in their journals and during the two weeks afterward. Participants in the Benefactor condition made significantly more calls during the two weeks after they wrote in their journals. However, a significant increase in calls was not observed for the Beneficiary condition.

In the second study, a Control condition was added. Participants in the Control condition wrote about meals they had consumed in previous weeks. The dependent

variable was the portion of money (from financial compensation they received for participating in the experiment) participants were willing to donate to a charity for earthquake victims. The experimenter verbally explained the donation option to students before they received compensation for their participation. While participants in both Intervention conditions made more contributions than participants in the Control condition, participants in the Benefactor condition made more contributions than participants in the Beneficiary and Control conditions. As indicated above, the results from the Grant and Dutton studies supported the Self-perception theory over the Norm of Reciprocity.

The present study modified the reflection conditions in Grant and Dutton (2012). Instead of four days of journal writing, participants had one writing session. Also, participants in the present study were students in an introductory psychology course rather than university employees. The present study examined whether including Actively Caring for People (AC4P) wristbands in addition to a reflection-based intervention would increase the frequency of intentions to express gratitude for prosocial behavior and reported expressions of gratitude. The wristbands were added to address one common reason people fail to experience and/or express gratitude: forgetfulness (Emmons, 2007).

Identified as “tangible reminders of kindness”, AC4P wristbands are green and emblazoned with the phrase “Actively Caring for People” (Geller, 2013). An image of the wristband is included in Figure 3. After giving the wristband to a performer of prosocial behavior, the benefactor is supposed to tell the recipient to pass on the wristband to another person exhibiting prosocial behavior. Each green wristband has a

unique number printed on it and people are encouraged to visit the website (also printed on the wristband) to describe their experiences. The website (ac4p.org) reports evidence that many wristbands have been passed on multiple times. To date, over 50,000 wristbands have been given away, making their way to several countries (Geller, 2013). Study 5 assessed how the availability of wristbands impacted prosocial behavior.

4.2 - Method

Study 5 compared the behavior of non-randomized students in two large lecture classes: a Wristband class and a No-Wristband class. Classes were assigned the conditions by a coin flip. Green wristbands were made available to one of the classes. Within each class, students were randomly assigned to one of three conditions: a Thanked condition, a Were-Thanked condition, and a Control condition. These conditions were determined by the type of writing prompt each participant received, as follows:

1. Thanked Condition: “Briefly describe three situations in your life where you thanked someone.”
2. Were-Thanked Condition: “Briefly describe three situations in your life where you Were-Thanked by someone.”
3. Control Condition: “Briefly describe three meals you’ve eaten in the past two weeks.”

The Thanked condition was analogous to the Beneficiary condition in Grant and Dutton (2012) since people typically give thanks to those who have done something to benefit them. The Were-Thanked condition was analogous to the Benefactor condition since people typically receive thanks in return for having helped the giver of the thanks.

Finally, the Control condition remained similar to the Grant and Dutton (2012) by asking about recently consumed foods.

The two phases of the study occurred on consecutive class days and two dependent variables were measured: intentions to express gratitude (on the first day) and reported expressions of gratitude (on the second day). Intentions were measured by students' responses to a survey asking whether they intended to give away a thank-you card following the observation of a prosocial behavior. On the following class day, students were asked to report on a survey whether they gave away a thank-you card.

4.3 - Hypotheses

Given the wristband's status as a reminder of kindness, it was hypothesized students in the Wristband class would be more likely to intend to express gratitude and to honor their intentions than students in the No-Wristband class (H1). Within each class, it was hypothesized students in the Were-Thanked condition would be more likely to intend to express gratitude and to honor their intentions than students in the Thanked and Control conditions (H2).

4.4 - Participants

A priori power analyses were conducted at the between-class (i.e., Wristband vs. No-Wristband) and within-class (i.e., Thanked, Were-Thanked, and Control) levels. For the between-class level, an alpha of .05, and an anticipated small effect size for both dependent variables (i.e., the Wristband condition's thanking intention and behavior would be .11 different than the No-Wristband condition), a sample size of at least 300 students was required for each class in order to maintain a power of .8 (Lenth, 2006). At the within-class level, 100 students per condition, and an alpha of .05 yielded a power of

.8 for detecting a medium effect size (i.e., differences of at least .185 on thanking intention and behavior).

The introductory psychology course where the study was conducted had four lectures a week with half the students attending Monday and Wednesday lectures ($n = 303$) while the other half attended Tuesday and Thursday lectures ($n = 341$). All lectures were taught by the same professor. The Monday-Wednesday lectures did not differ from the Tuesday-Thursday lectures in terms of the content presented.

4.5 - Procedure

At the beginning of class, Maslow's Hierarchy of Needs was described to students with an emphasis on self-transcendence. Students in both classes then received identical lectures from the professor. During the final 15 minutes of the lecture, students were each given a sheet of paper with a line for a participant code and one of the three writing prompts specified above. After all students had received a sheet of paper, the professor presented an overhead transparency of the participant code and students wrote their participant codes on their papers. Then students responded to their writing prompts. After that, the professor presented an overhead transparency of a thank-you card and explained the cards were supposed to be given to people who displayed prosocial behavior, since recipients of such gratitude were better able to realize their full potential, a component of self-transcendence. The professor also explained that expressions of gratitude are one component of the AC4P movement and described the movement as seeking to cultivate a more caring culture in the immediate community. Students were instructed to tear the thank-you card in half, give the top half to a prosocial individual, fill out the survey on

the bottom half of the card, and deliver the bottom half to class. Images of the front and back of the thank-you card are in Figures 1 and 2, respectively.

Then the professor presented an overhead transparency that listed sample behaviors for which students could express gratitude, as given in Figure 4. He explained that prosocial behavior can also be called “actively caring behavior”. Students turned their sheets to the opposite side and either wrote “yes” or “no” to the statement: “I intend to recognize someone’s actively caring behavior with a thank-you card”. In the Wristband class, the professor then informed students that green Actively Caring wristbands were also available and should be worn as a reminder to express gratitude.

RAs collected the sheets. Finally, students were dismissed and given the opportunity to obtain thank-you cards when they left the lecture hall. Students in the Wristband class were also given the opportunity to obtain wristbands at the lecture hall exits. One week after Phase 1, RAs handed out surveys at the beginning of class. Students were given five minutes to complete the survey. Afterward, RAs collected the surveys. The survey is shown in Figure 5.

4.6 - Results

4.6.1 - Manipulation Check

Content analyses were conducted on the writing prompt responses to see if consistent differences existed between each experimental condition. Students in the Thanked condition consistently described themselves as the person giving thanks in their responses. Their responses listed the reasons why they gave thanks. Prompts were similar in content to this example: “I expressed gratitude when I received a gift; I thanked my surgeon for performing a successful oral surgery; I thanked my parents for always being

there for me”. The analysis indicated students in this condition described themselves in a manner that made them appear as beneficiaries.

Students’ responses in the Were-Thanked condition consistently listed the actions they did that activated thanks from others. For example, one prompt was as follows:

“Whenever I hold the door open for someone, or if someone does not have a card key to get in; Accommodating people when they are at my home (water, food, etc.); If I offer to pay/help pay for a friend at a store or for food”. The content analysis indicated students in this condition consistently described themselves in a manner that reflected benefactor.

Students in the Control condition consistently described the foods they had eaten. For example: “1. Burrito with chicken, rice, beans, guac, lettuce, tomato, cheese. 2. Gyros, lamb and topping. 3. Pasta with tomato, broccoli, and other vegetables”. The manipulation check confirmed the following: the Thanked and Were-Thanked conditions were analogous to the Beneficiary and Benefactor conditions defined by Grant and Dutton (2012), respectively.

4.6.2 - Hypothesis Testing

In order to assess whether relationships existed between students’ intentions and the experimental conditions to which they were randomly assigned, results were analyzed using log linear modeling. Log linear modeling was also used to determine the existence of a relationship between experimental conditions and students’ behavior. The sample sizes varied due to students either failing to be present for both phases of the study or students failing to respond fully to the surveys in the first and second phases.

For comparisons of students’ intentions vs. their behavior, only students who had experienced both phases of the study were included. These students were determined by

comparing the Phase 1 datasets with the Phase 2 datasets in order to see which subject codes appeared in both datasets. Cases were omitted using pairwise deletion. Students' intentions were measured by examining their yes/no responses to the statement: "I intend to recognize someone's actively-caring behavior with a thank-you card."

Students' reported behaviors were assessed by comparing their responses to the statement from the first phase to their yes/no response (regarding whether they gave away a thank-you card) in the survey they completed in the second phase. Honoring of intention was defined as responding "yes" to both the intent statement in the first phase and the behavior question in the second phase (i.e., whether a thank-you card was given away).

The first hypothesis was that students in the Wristband class would be more likely to intend to express gratitude and more likely to honor their intentions than students in the No-Wristband class (H1). Students in the Wristband class (n=304) were 1.740 times more likely to intend to give a thank-you card than students in the No Wristband class (n=341), a significant difference ($p < .01$). However, students in Phase 2 of the Wristband class (n=215) were only 1.383 times more likely to honor their intention than students in the No Wristband class (n=198), an insignificant difference ($p > .05$). These results are summarized in Tables 7 and 8, respectively. Thus, H1 was partially supported.

The second hypothesis was that, within both class, students in the Were-Thanked condition (Benefactor) would be more likely to intend to express gratitude and more likely to honor their intentions than students in the Thanked (Beneficiary) and Control conditions. No significant differences were observed in either class when examining for the impact of within-class conditions on intentions. In the Wristband class (n=304),

students in the Were-Thanked condition (n=105) were 1.536 times more likely to intend to give a thank-you card than students in the Thanked and Meal conditions ($p>.05$). In the No Wristband class (n=341), students in the Were-Thanked condition (n=132) were 1.012 times more likely to intend to give a thank-you card than students in the Thanked and Meal conditions ($p>.05$). Tables 9 and 10 summarize the results of these analyses.

The analysis of students' honoring their intentions revealed an identical non-significant pattern of results. In the Wristband class (n=160), students in the Were-Thanked condition (n=49) were 2.147 times more likely to honor their intentions than students in the Thanked and Meal conditions ($p>.05$). In the No Wristband class (n=128), students in the Were-Thanked condition (n=57) were 1.454 times more likely to intend to give a thank-you card than students in the Thanked and Meal conditions ($p>.05$). It should be noted that, due to greatly reduced sample sizes, the effect sizes in Tables 11 and 12 needed to be extremely large in order for the differences between conditions to be significant. H2 was not supported.

4.6.3 - Content Analysis

In order to explore barriers to thanking, the survey in Phase 2 included a question explicitly asking students what prevented them from giving out their thank-you cards.

Students responded by checking a box next to one of three options:

1. "I didn't observe an actively-caring behavior"
2. "I didn't have a thank-you card on hand when observing an actively-caring behavior"
3. "Other (please explain)"

Option #2 was the most common reason for not giving a thank-you card, which indicates the majority of students had an opportunity to thank someone. The proportion of students who chose this option was as follows: 64% of students in the Thanked condition ($n=93$), 62% of students in the Were-Thanked condition ($n=80$), and 71% of students in the Control condition ($n=88$). Option #1 was selected least often. Only 3% of students in the Thanked condition, 13% of students in the Were-Thanked condition, and 5% of students in the Control condition selected it.

The proportions of students in each condition who chose Option #3 (“Other”) were: 33% (Thanked), 25% (Were-Thanked), and 24% (Control) respectively. A content analysis of the responses to the “Other” option indicated that the most common reason for not thanking someone was forgetting. Specifically, 15% of students in the Thanked condition, 62% in the Were-Thanked condition, and 12% of students in the Control condition who marked “Other” said they forgot about their intention. In addition, a small percentage of students either felt that giving a thank-you card was too elaborate for the behaviors they witnessed or they were too shy to approach a stranger to present him/her with a thank-you card. Therefore, almost 90% of students in every condition witnessed a prosocial act and had an opportunity to give away a thank-you card. This 90% statistic negated one of the most salient risks associated with deviating from the structured style of the Grant and Dutton (2012) study. Unlike participants in that study, students in the present study were not guaranteed an opportunity to perform prosocial behavior (in this case, the opportunity was witnessing prosocial behavior for which to express gratitude).

The gender representation in each class was also examined. Research suggests females are more likely to behave prosocially in general (Leslie et al., 2013). For these

analyses, cases with missing data were addressed using pairwise deletion. A gender effect was observed in the No Wristband class for thanking intention. Females ($n=195$) in the No Wristband class ($n=339$) were 1.732 times more likely to intend to give a thank you card than males ($p<.05$). No gender difference was observed in the Wristband class. Males ($n= 110$) in the Wristband class ($n= 299$) were 1.319 times more likely to intend to give a thank you card than females ($p>.05$).

The impact of gender on thanking behavior was also non-significant. Only students who expressed thanking intention in each class were included in these analyses. Females ($n= 99$) in the No Wristband class ($n= 156$) were 1.611 times more likely to honor their intentions than males ($p>.10$). Males ($n= 64$) in the Wristband class ($n= 112$) were 1.224 times more likely to honor their intentions than females ($p>.10$).

The impact of obtaining a wristband (as opposed to being aware of wristband availability) on thanking behavior was also assessed for the Wristband class. Pairwise deletion was used to handle cases with missing data. Students in the Wristband class ($n=183$) who obtained a wristband ($n=151$) after intending to thank were 7.015 times more likely to honor their intention than students who stated the intention but failed to obtain a wristband ($n=32$; $p<.01$). Since students could only obtain wristbands after indicating their intentions to express gratitude, wristband acquisition may be a signal of strong prosocial intentions in addition to an attempt to remind oneself to honor them. Finally, exploratory analyses were conducted on the bottom half of the returned thank-you cards. Analyses of the returned cards ($n=37$) indicated that students were more likely to give thank-you cards to friends than to strangers.

4.7 - Discussion

A primary hypothesis of the study, that a greater proportion of students in the Wristband class would intend to give out thank-you cards and then honor their intentions than students in the No-Wristband class (H1), was partially supported. The impact of the intervention in the Wristband class eliminated the difference between the two conditions in terms of intentions to express gratitude. Meanwhile, the classes did not differ significantly in terms of students' likelihood of honoring intentions.

Perhaps the number of steps required to thank someone explains this pattern of results. While it was very easy for students to write "Yes" on a sheet of paper as a display of intention, compliance required students to keep thank-you cards in a bag (the cards were too big to fit into a pocket), witness a prosocial act, remove the card from their bag, approach the person performing the behavior, and give the person the top half of the card.

The wristband intervention might not have been sufficient motivation for students to complete that inconvenient process upon witnessing prosocial behavior. Therefore, it's possible the relationship between the experimental manipulation and the honoring of intentions could have been moderated by the difficulty of honoring intentions. For example, all of the participants in the Grant and Dutton (2012) study had immediate opportunities to perform simple prosocial behaviors (i.e., asking people to donate to the university; donating a portion of their compensation to earthquake victims) after they had been subjected to the experimental manipulation.

The second hypothesis was that students in the Were-Thanked condition of each class would be more likely to intend to give out thank-you cards and honor intentions than students in the Thanked and Control conditions. H2 was not supported. A number of potential explanations exist for this. Perhaps the Control condition was not sufficiently

neutral. Prior to declaring their thanking intention, Control students wrote about three meals they had previously eaten. Some Control students might have written about three meals they had enjoyed eating. Describing a pleasurable dining experience can increase positive affect and people with high positive affect are more likely to perform prosocial behavior (Emmons & McCullough, 2003). In other words, the Control prompt may have been a de facto “positive affect” prompt for a critical mass of Control students in the Wristband class, thereby eliminating the differences between conditions in the class. However, it remains unclear why a similar pattern did not manifest in the No Wristband class. Perhaps the students in the Wristband class differed from the No Wristband class students in terms of their susceptibility to experiencing positive affect when remembering meals they had consumed.

While the purpose of the current study was to assess the impact of two types of self-reflection on expressing gratitude, the similarity between the Thanked condition writing prompt and the intention prompt may have impacted intention rates in the Thanked condition. Answering “yes” to the statement “I intend to recognize someone’s actively-caring behavior with a thank-you card” put students in the role of someone giving thanks. Since students in the Thanked condition (i.e., “Briefly describe three situations in your life where you thanked someone.”) were primed to see themselves as people who gave thanks, the wording of the intention prompt may have increased their likelihood of answering “yes”.

4.7.1 - Limitations

Participant attrition was the primary limitation. It noticeably reduced the number of completed writing prompts and surveys that could be analyzed. It is possible the

students who failed to complete all materials might have significantly affected the results if they had participated fully. Moreover, the attrition decreased the power for within-class analysis of the second dependent variable (i.e., self-reported prosocial behavior).

While random assignment allowed the experimental sub-conditions in each class to be compared with each other, the two classes (Wristband vs. No-Wristband) were compared with each other in a quasi-experimental manner. Students were not randomly assigned to those conditions; they signed up for their desired lecture schedule (Tuesday-Thursday lectures vs. Monday-Wednesday lectures) at the beginning of the semester. Therefore, it's possible the Wristband class differed systemically from the No-Wristband class on constructs relevant to the study.

The use of self-report as the only dependent variable was also a limitation. Students might have responded to questions in a socially desirable manner (e.g., falsely claiming to have given out a thank-you card). Therefore, it is likely the difference between intention and behavior is greater than what was observed in the study. However, use of a participant code and emphasizing the anonymous nature of the experiment is likely to have minimized the frequency of students responding in that manner. In addition, a difference between the verbal report of compliance with the intention and actual compliance is not expected to vary as a function of the independent variable. Therefore, the verbal report of compliance is presumed to be an impartial estimator of actual behavior.

Finally, the length of time participants had to react to their respective prompts was a limitation. During a four-day period, participants in the Grant and Dutton (2012) study spent 15 minutes each day responding to reflection prompts. Meanwhile, participants in

the present study spent five minutes of one 50-minute class period doing the same. It is possible five minutes was an insufficient amount of time for the manipulation to impact behavior and/or intention differentially.

5.0 - General Discussion

The five studies discussed in this paper underscore the difficulty of increasing expressions of gratitude or thanking behavior, indicating the need for continued testing of relevant behavior-change interventions. While the students' intentions to express gratitude were relatively high, the reports of actual thanking behavior were relatively low.

Students may have discussed their respective class conditions with each other. The supervision of RAs during the first phase prevented students from discussing their writing prompts or intentions, but nothing prevented them from discussing the project during the one-week period designated for giving out thank-you cards. Therefore, some students may have participated in conversations outside of class that influenced their likelihood of honoring their intentions.

Inconsistent relationships were observed when liking of the professor was assessed. The third preliminary study found no relationship between liking and participants' performance on the dependent variables, while Study 4 found a significant positive relationship between liking and thanking intention (but not thanking behavior).

5.1 - Future Direction

Since within-person comparisons would improve the understanding of how the reflection and wristband interventions impact prosocial behavior, a future study should measure students' frequency of prosocial behavior (baseline data) prior to an intervention to increase such behavior. Such a strategy would be helped if a smaller thank-you card were also developed in order to make the thanking process more convenient.

Additionally, a future study should include a strategy for minimizing communication between participants in order to allow for stronger inferences to be made

regarding the impact of experimental manipulations. Also, different populations should be examined in field settings in order to see if the results observed in the current study generalize beyond student populations. Although the above study was a field experiment, it only involved introductory psychology students. Future field studies should recruit from a wider pool of participants. Certain organizational settings may allow a future study to collect data via methods more reliable than self-report.

Regardless of the limitations, two preliminary studies provided evidence of a so-called “boomerang effect” (e.g., a classroom intervention designed to promote statements of gratitude for prosocial behavior resulted in contrary results) and subsequent studies demonstrated procedures for eliminating the effect. In addition, though the hypotheses for reported expressions of gratitude were unsupported in the final study, observed differences were in the hypothesized direction, thereby suggesting a need to conduct a subsequent study in a manner that minimizes participant attrition in order to better determine the impact of AC4P wristband availability on people’s likelihood of expressing gratitude.

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Table 1

Frequencies of reported gratitude expression as a function of Intention vs. No Intention condition

<i>Behavior</i>	<i>Intention</i>	<i>No Intention</i>	$X^2(1)$	<i>Sig. (2-sided)</i>
Yes	99	125		
No	111	164	.744	.413

Table 2

Intention to thank prosocial behavior with a “Pay-it-Forward” candy-bar as a function of Legacy vs. Control condition

<i>Intention</i>	<i>Legacy</i>	<i>Control</i>	$\chi^2(1)$	<i>Sig. (2-sided)</i>
Yes	213	136		
No	19	25	5.15	*.023

* $p < 0.05$

Table 3

Frequencies of reported gratitude expression as a function of Legacy vs. Control condition

<i>Behavior</i>	<i>Legacy</i>	<i>Control</i>	$X^2(1)$	<i>Sig. (2-sided)</i>
Yes	98	101		
No	134	60	15.97	***.000

*** $p < 0.001$

Table 4

Intention to thank prosocial behavior with an Actively Caring thank-you card as a function of Legacy vs. Control condition

<i>Intention</i>	<i>Legacy</i>	<i>Control</i>	$X^2(1)$	<i>Sig. (2-sided)</i>
Yes	237	97		
No	72	159	87.245	***.000

*** $p < 0.001$

Table 5

Frequencies of reported gratitude expression as a function of Legacy vs. Control condition

<i>Behavior</i>	<i>Legacy</i>	<i>Control</i>	$X^2(1)$	<i>Sig. (2-sided)</i>
Yes	85	61		
No	152	36	20.426	***.000

*** $p < 0.001$

Table 6

Intention to thank others as a function of saying “yes” to Should or Control statement

<i>Intention</i>	<i>Should</i>	<i>Control</i>	$X^2(1)$	<i>Sig. (2-sided)</i>
Yes	91	76		
No	50	48	.299	.585

Table 7

Intention to thank others as a function of Class

Intention	<i>Wristband</i>	<i>No-Wristband</i>	<i>exp(Est.)</i>	<i>Sig.(2-sided)</i>
Yes	215	198		
No	89	143		
			1.740	
				** .001

***p < 0.01*

Table 8

Frequencies of reported gratitude expression as a function of Class

<i>Intention</i>	<i>Wristband</i>	<i>No-Wristband</i>	<i>exp(Est.)</i>	<i>Sig. (2-sided)</i>
Yes	61	44		
No	154	154	1.383	
				0.155

Table 9

Intention to thank others as a function Wristband conditions

Intention	<i>Thanked</i>	<i>Were-Thanked</i>	<i>Control</i>	<i>exp(Est.)</i>	<i>Sig. (2-sided)</i>
Yes	74	68	73		
No	24	35	29	1.536	0.099

Table 10

Intention to thank others as a function of No-Wristband conditions

Intention	<i>Thanked</i>	<i>Were-Thanked</i>	<i>Control</i>	<i>exp(Est.)</i>	<i>Sig. (2-sided)</i>
Yes	47	85	66		
No	30	56	57	1.012	.957

Table 11

Frequencies of reported gratitude expression as a function of Wristband conditions

<i>Intention</i>	<i>Thanked</i>	<i>Were-Thanked</i>	<i>Control</i>	<i>exp(Est)</i>	<i>Sig. (2-sided)</i>
Yes	16	21	9		
No	40	30	23	2.147	.064

Table 12

Frequencies of reported gratitude expression as a function of No-Wristband conditions

<i>Intention</i>	<i>Thanked</i>	<i>Were-Thanked</i>	<i>Control</i>	<i>exp(Est)</i>	<i>Sig. (2-sided)</i>
Yes	7	8	17		
No	30	21	39	1.454	0.351

Figure 1: Front of thank-you card

**I THANK YOU FOR
ACTIVELY CARING OF PEOPLE**



sponsored by:
Center for Applied Behavior Systems
Center for Peace Studies and Violence Prevention



**Thank you for caring enough
to return us this card!**

What Actively Caring behavior occurred?

Card Giver:
VT Email or PID _____

Card Recipient is: Male Female
Student Faculty Staff Other _____

Please circle a number for the following questions:

Relationship to card recipient

1 2 3 4 5
Family/ Close Friend Acquaintance Stranger

The reaction from the card recipient was

1 2 3 4 5
Negative Neutral Positive

My experience giving out this card was

1 2 3 4 5
Negative Neutral Positive

Figure 2: Back of thank-you card



Figure 3: Actively-Caring for People (AC4P) Wristbands

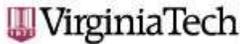


Figure 4: AC4P behavior examples

EXAMPLES OF ACTIVELY CARING BEHAVIOR:

- 1. Holding the door for someone**
- 2. Helping someone to carry books**
- 3. Paying for someone's meal**
- 4. Consoling someone (being the shoulder that they cry on)**
- 5. Changing someone's tire**
- 6. Giving someone a ride**
- 7. Helping someone to study for an exam**
- 8. Lending someone an article of clothing**

Appendix A



Office of Research Compliance
Institutional Review Board
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Blacksburg, VA 24060
540/231-4606 Fax 540/231-0969
email irb@ut.edu
website <http://www.irb.ut.edu>

MEMORANDUM

DATE: December 6, 2012
TO: Scott Geller, Ryan Christopher Smith, Shane McCarty, Michael L Ekema-Agbaw
FROM: Virginia Tech Institutional Review Board (FWA00000572, expires May 31, 2014)
PROTOCOL TITLE: The Pay It Forward Study: A Test of Commitment
IRB NUMBER: 10-877

Effective December 5, 2012, the Virginia Tech Institutional Review Board (IRB) Chair, David M Moore, approved the Amendment request for the above-mentioned research protocol.

This approval provides permission to begin the human subject activities outlined in the IRB-approved protocol and supporting documents.

Plans to deviate from the approved protocol and/or supporting documents must be submitted to the IRB as an amendment request and approved by the IRB prior to the implementation of any changes, regardless of how minor, except where necessary to eliminate apparent immediate hazards to the subjects. Report within 5 business days to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.

All investigators (listed above) are required to comply with the researcher requirements outlined at:

<http://www.irb.vt.edu/pages/responsibilities.htm>

(Please review responsibilities before the commencement of your research.)

PROTOCOL INFORMATION:

Approved As: **Expedited, under 45 CFR 46.110 category(ies) 7**
Protocol Approval Date: **November 6, 2012**
Protocol Expiration Date: **November 5, 2013**
Continuing Review Due Date*: **October 22, 2013**

*Date a Continuing Review application is due to the IRB office if human subject activities covered under this protocol, including data analysis, are to continue beyond the Protocol Expiration Date.

FEDERALLY FUNDED RESEARCH REQUIREMENTS:

Per federal regulations, 45 CFR 46.103(f), the IRB is required to compare all federally funded grant proposals/work statements to the IRB protocol(s) which cover the human research activities included in the proposal / work statement before funds are released. Note that this requirement does not apply to Exempt and Interim IRB protocols, or grants for which VT is not the primary awardee.

The table on the following page indicates whether grant proposals are related to this IRB protocol, and which of the listed proposals, if any, have been compared to this IRB protocol, if required.

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

Date*	OSP Number	Sponsor	Grant Comparison Conducted?

* Date this proposal number was compared, assessed as not requiring comparison, or comparison information was revised.

If this IRB protocol is to cover any other grant proposals, please contact the IRB office (irbadmin@vt.edu) immediately.