

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS ON SUBSEQUENT HELPING:
IMAGINARY NUMBERS COUNT

by

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Bachelor of Science, 2010
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Submitted to the Graduate Faculty of the
College of Science and Engineering
Texas Christian University
in partial fulfillment of the requirements
for the degree of

Master of Science

May 2013

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my advisor, Dr. Charles G. Lord, for his continual guidance and encouragement during the research and writing of this thesis. I greatly admire and respect you and am honored to be able to learn from such a gifted and caring scholar.

I would also like to thank my thesis committee members, Dr. Cathy R. Cox and Dr. Sarah E. Hill, for your insightful suggestions and interest in my research project.

I am especially grateful to my mother and father for providing me with the opportunity to follow my dreams. Thank you for your love and your invaluable support. All that I am and hope to be I owe to you.

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Effects of Imagined Pro-Social Actions on Subsequent Helping: Imaginary Numbers Count

Imagine the following scenario. It is the morning of one of New England's most widely viewed sporting events. With close to 20,000 participants and 500,000 spectators, the Boston Marathon is one of the largest footraces in North America. Amongst the crowd are two spectators, Solitary Sally and Gregarious Greta. Both have come to see some of their friends who are participating in the race. It is now early afternoon. The two spectators realize that their friends are nowhere near the finish line, and they begin to daydream. Solitary Sally daydreams about volunteering to help the poor and needy and so does Gregarious Greta. The difference is that Sally imagines doing the volunteer work by herself, whereas Greta imagines doing the volunteer work together with two of her friends. If an emergency were to happen while Sally and Greta are at the marathon, all else being equal, who would be more likely to help a specific person in need? Does the number of other helpers in Sally's and Greta's imaginary scenarios make any difference? Previous research on bystander intervention and the imagined presence of others suggests that actual helping may be *less likely* when imaginary co-actors are present than absent.

Bystander Intervention

In the early morning of March 13, 1964, Catherine "Kitty" Genovese was violently assaulted and murdered outside of her apartment in New York City. Some reports say that there were over 30 witnesses but not one intervened to help (Darley & Latané, 1968). This tragedy stimulated research on why individuals fail to help a victim of an emergency when there are others present. Several years later, in two classic studies, Darley and Latané (1968) were able to recreate this effect, now recognized by others as the *bystander effect*—the phenomenon that occurs when individuals fail to help another person in distress when there

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are others present. The most common explanation of bystander apathy involves *diffusion of responsibility*—when there are many other people present, people feel *less responsible* for helping someone in need. The bystander effect has been consistently replicated in subsequent studies that investigated the context in which the emergency occurs, the type of situation, and the number and type of bystanders present (e.g., friends vs. strangers; Rutkowski, Gruder, & Romer, 1983; Levine & Crowther, 2008).

Classic Studies. Darley and Latané (1968) were the first researchers to demonstrate the bystander effect by recreating an emergency situation in a laboratory setting. In this study, the student participant was placed in a separate cubicle and told that he or she would be discussing personal problems associated with college life with other students over an intercom system. The participant was also told that each student would be given a 2-min turn to share experiences with the group. In reality, however, there were no other student participants present. The “other student” voices were actually tape recordings. During the discussion, one of the students began to have a seizure, and the researchers measured the time it took each participant to leave the cubicle to get help.

Although most of the participants believed that the emergency was real, whether or not the participant intervened depended on the number of people believed to be present. Participants who believed that they were alone with the victim responded the quickest; that is, the majority (i.e., 85%) went to find help before the victim’s 2-min turn ended. In contrast, 62% of participants reported the emergency when they believed they were in the presence of another student and only 31 % went to find help when they believed there were four others present.

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The researchers suggested that participants who believed many other students were present helped less because they thought someone else would do it (diffusion of responsibility). Students felt less responsibility and accountability for helping when they thought other potential helpers were present. These researchers did not, however, vary the relationship of the other potential helpers to the participant. Also, all of these studies on the role of bystander intervention involved the *actual* presence of other people. Would the same effects occur for the *imagined* presence of others?

Imagined Presence of Others

Although both classic and contemporary bystander intervention studies have demonstrated that the presence of increasing numbers of other people results in less helping behavior, research has also shown that in addition to group size, the likelihood of helping is also affected by the relationship between the people in the group (Rutkowski et al., 1983; Levine & Crowther, 2008). In classic bystander intervention studies, the groups of people were composed of strangers, who are said to form a less cohesive group. Strangers are less similar and feel less connected with one another than groups composed of friends.

Levine and Crowther (2008) explored the relationship between group size and three different psychological relationships among bystanders. Specifically, the interaction of group size and type of bystanders (e.g., strangers, friends, or members of an in-group) influenced the likelihood of helping. Participants who imagined themselves in a group of five strangers were less willing to help a woman in distress than participants who imagined themselves in a group of five friends (Study 1). The researchers noted that groups composed of strangers are low in social cohesion, so the mere presence of dissimilar others discouraged helping behavior (Rutkowski et al., 1983).

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Building on Darley and Latané's (1968) work, another set of studies examined the effects of thinking about being with many versus few others on subsequent helping (Garcia, Weaver, Moskowitz, & Darley, 2002). In Study 1, students were asked to imagine winning a prize that involved dinner with themselves and 30 friends, 10 friends, or 1 friend. To get them to focus on the event, they were asked what time of day they would make the reservation. Subsequently, all participants were asked what percentage of their after-tax earnings they would be willing to donate to charity after they had been out of college for several years. Their predicted donations to charity showed a significant linear trend, with most donations from those who had imagined dinner with one friend and least from those who had imagined dinner with 30 friends. In a follow-up study, students who imagined being with many friends in a crowded movie theater subsequently reported that they would contribute less money to their university than did students who imagined being alone with one friend in a movie theater. The researchers attributed these effects of imagined scenarios to differences in diffusion of responsibility—that is,—students who imagined themselves with a crowd of strangers intended to help less, because immediately after the imagined scenes, they felt less accountable and less responsible for helping.

In the study most relevant to the present hypotheses, Garcia and colleagues (2002) demonstrated the effect of imagining many versus few others on *actual* helping behavior. Students who imagined winning a dinner for themselves and 10 friends at their favorite restaurant subsequently offered to spend less time helping with another experiment than students who imagined winning a dinner for themselves and one friend. This study provided further support for the diffusion of responsibility account—students who imagined themselves with a large group of friends actually helped less, because they felt less

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responsible for helping, but did not directly address the postulated mechanism. An additional study did so by showing that students who imagined being with a friend in a crowded movie theater subsequently responded more quickly to words relating to unaccountability on a lexical decision task than did students who imagined being alone with a friend in a movie theater. These results suggested that priming an imagined social context that includes many rather than few others increases feelings of being lost in a crowd, unaccountability, and diffusion of responsibility, which implicitly induces the bystander apathy effect.

The Present Studies

In summary, Garcia and colleagues (2002) demonstrated that thinking about being with many others decreases helping a specific person relative to thinking about being with few others—that imaginary numbers count. Their studies, however, did not address several important aspects related to imaginary scenarios and bystander intervention. First, the imagined scenarios in Garcia et al.'s studies were not related to helping. Their participants imagined the mere presence of a large compared to a small number of other people. Would imagining scenarios that were specifically about helping others result in the same effects—less helping of a specific individual? In the present studies, it was hypothesized that imagining helping with others would decrease the amount of help given to a specific individual in need of help in an actual situation.

Second, although many bystander intervention studies had a condition in which participants were alone, Garcia and colleagues (2002) did not. Their participants either imagined themselves and one other person having dinner or being in an empty movie theater together. They did not imagine themselves having dinner or watching a movie by themselves. Being alone versus in the presence of others played a large role in the early bystander

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intervention studies. If participants imagined themselves alone compared to in the presence of many others, would there still be a decrease in helping in real situations? In the present Study 1, it was hypothesized that imagining oneself helping other people together with two friends would decrease the amount of help given to a specific individual in an actual situation compared to imagining oneself helping other people alone.

Third, Garcia and colleagues (2002) also did not compare the effect of the type of bystanders (i.e., friends vs. strangers) on subsequent helping of a person in need. The present Study 2 tested whether imagining oneself helping other people with two friends would result in less actual helping than imagining oneself helping other people alone. Study 2 also tested whether increasing the number of friends to four would result in less helping than imagining helping with two friends and whether imagining helping together with four strangers would result in the least amount of actual helping.

To address these questions, the present research tested the prediction that people who imagine taking pro-social actions in concert with others will display lower levels of actual help for a specific person in need than will people who imagine taking pro-social actions by themselves. *Four friends* and *four strangers* conditions were included in Study 2 to test for a linear trend of the effects of the number of people imagined on subsequent actual helping.

Study 1: Effects of Imagined Pro-Social Behaviors on Subsequent Helping

The purpose of Study 1 was to examine the effect of imagined pro-social actions taken alone or together with two friends on subsequent helping. Previous research suggests that the imagined presence of others subsequently results in less helping (Garcia et al., 2002). In the present study, after imagining and describing three pro-social action scenarios in which participants took actions alone or together with two friends, they were given 10 opportunities

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to help another graduate student with an experiment by completing a consonant counting task. If they did not want to help on any given trial they could instead rate the funniness of cartoons. Consistent with previous research, it was hypothesized that participants who imagined taking pro-social actions together with two friends would help the other graduate student fewer times than participants who imagined taking pro-social actions alone.

Method

Participants. A total of 59 undergraduate students participated for course credit. Four participants were dropped from the analyses for not following instructions. The final sample consisted of 55 undergraduate students (37 women, 18 men).¹

Procedure. To obtain a baseline measure of past helping behavior, participants first completed an adapted 12-item Self-Report Altruism Scale (SRA; Rushton, Chrisjohn, & Fekken, 1981; see Appendix A). Sample items included “In the past I have made a donation to a charitable organization,” and “In the past I have made change for a stranger.” All items were answered on 5-point scales from 0 (*never*) to 4 (*very often*). After participants completed this initial measure, they were randomly assigned to one of two conditions for what they were told was a study of “creativity.” Participants in each condition were directed to imagine and describe three pro-social action scenarios: volunteering at a soup kitchen; volunteering to build a house for a needy family; and volunteering to help children at an elementary school. These three pro-social actions were different from any of the actions described in the adapted SRA. Participants imagined and described themselves performing the *actions alone* ($n = 27$) or *together with two friends* ($n = 28$) and took 3 min on each scenario (See Appendix B).²

¹ Sex of participant did not interact with the results to be reported.

² To test for the potential effect of differences in enjoyment of the imagined scenarios on subsequent helping,

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After a 5-min word search filler task to allow time for the imagined pro-social scenario manipulation to show an observable effect (i.e., cognitive restructuring; see McGuire & McGuire, 1996), all participants were introduced to a helping request (see Appendix C). Using a procedure adapted from Brown and Smart (1991; Study 2), Forbes and Schmader (2010), and Garcia and colleagues (2002; Study 3), all participants were informed that they had been randomly assigned to the condition they were in and that they were in a condition that took less time than the other participants.³ The participants were then informed that there were 20 min remaining and were given a choice for how they could spend each of 10, 2-min time periods. One choice for each time period was to rate how funny cartoons were on a scale of 0 (*not very funny*) to 4 (*very funny*)—a task we assumed most students would find enjoyable. The other choice on each trial was to help another graduate student who was running a master’s thesis. The participants were informed that the computer crashed during the other graduate student’s study, causing the participants to be dismissed. The other graduate student was unable to collect all the data needed for the study and would appreciate their help. Participants were informed that the other graduate student’s thesis task involved counting the number of consonants in a paragraph of text—a task we assumed most students would find relatively tedious—but they would not receive any extra credit for helping, because credit had already been awarded to the other participants from the interrupted session. The dependent measure was the number of times (out of a possible ten) that the participant helped the other graduate student by completing the consonant counting task.^{4, 5}

participants also reported how exciting, fun, and enjoyable they perceived each of the three scenarios to be. These measures did not affect the results to be reported in either Study 1 or Study 2.

³ All participants sat at tables separated by dividers to ensure that they could not see that other participants received the helping request and the tasks other participants chose to complete. To avoid experimental demand, the experimenter stood off to the side so that she could not see which tasks participants chose to work on.

⁴ Participants were counted as helping on a trial if they both chose and or worked on the consonant counting

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All participants then completed a manipulation check. Participants were told that this was a memory test and were asked, “What did you do during the imagination task?” with possible answers: I imagined and described *myself taking actions to volunteer*; or *myself and two friends taking actions to volunteer*. Four participants were eliminated from the analyses for answering the manipulation check question incorrectly.

Results

Effect on number of times helped the other graduate student. A one-way between subjects analysis of covariance (ANCOVA) was conducted to examine the effect of the number of actors imagined in the scenario (alone vs. together with two friends) on the number of two-minute time periods (out of a possible 10) in which participants helped the other graduate student by completing the consonant counting task. The 12 items from the adapted SRA were averaged to form one measure of reported past helping behavior ($\alpha = .88$), and this variable was used as the covariate to control for baseline differences in the tendency to help others.⁶ The ANOVA revealed a significant main effect for the number of actors imagined, $F(1, 52) = 4.27, p = .04, d = .34$ (see Figure 1), with participants who imagined taking pro-social actions with two friends ($M = 4.64, SD = 3.98$) helping the other graduate student fewer times than participants who imagined taking pro-social actions by themselves ($M = 5.89, SD = 3.42$). Adding two friends to the imagined pro-social actions decreased subsequent helping of a specific other person in need.

task, even if they also rated the cartoons.

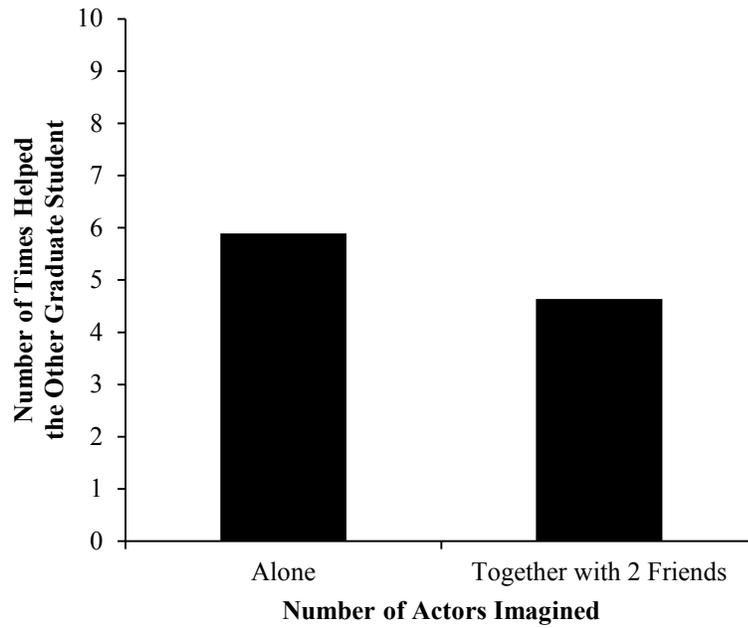
⁵ To test for the potential effect of changes in perceived social consensus on helping, participants also reported the percentage of people they thought would agree to help the other graduate student and the number of times (out of a possible 10) they thought the average person would help the other graduate student. These measures did not affect the results to be reported in either Study 1 or Study 2.

⁶ The adapted SRA covariate was significant, $F(1, 52) = 8.73, p = .01$.

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Figure 1

Number of times completed the helping task for the other graduate student (raw means) by number of actors imagined in scenario. Higher scores indicate more helping.



Discussion

The results of Study 1 were consistent with predictions derived from research by Garcia and colleagues (2002; Study 3). Adding co-actors to imagined pro-social actions decreased subsequent helping compared to imagining solitary pro-social actions. These results, however, did not test the linear trend found by Garcia and colleagues (2002; Study 1), in which helping decreased steadily as participants moved from imagining scenes that involved one other person to 10 other people to 30 other people. To extend their finding of a linear trend from imagined scenarios that did not involve helping (in their Study 3) to scenarios that did involve helping others would require additional conditions beyond the two conditions of the present Study 1.

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Study 1 also did not address what may be an equally important aspect of imagined scenarios—the nature of the other people involved. Previous research on bystander helping has shown that the presence of strangers creates greater diffusion of responsibility and lack of accountability than the presence of close friends (Rutkowski et al., 1983; Levine & Crowther, 2008). To address the nature of the other people involved would require an additional condition that involved strangers rather than friends.

Study 2: Varying the Number and Nature of Imagined Others

The purpose of Study 2 was to examine the effect of varying the number and nature of imagined co-actors in pro-social action scenarios on subsequent helping. Previous research on the imagined presence of others suggests that there might be a linear trend relationship between the number of other people present and subsequent helping—as the number of other people present increases, the amount of subsequent helping steadily decreases (Garcia et al., 2002; Study 1: 1 to 10 to 30 other people). The procedure for the present study was the same as that for Study 1, but included an *alone* condition, a together with *two friends* condition, and a together with *four friends* condition. It was hypothesized that participants who imagined themselves taking pro-social actions alone would help the other graduate student the most times and participants who imagined themselves taking pro-social actions together with four friends the fewest times.

Further, to examine the effect of the nature of the imagined co-actors in pro-social action scenarios on subsequent helping, a together with *four strangers* condition was included. Although previous research suggests that the presence of strangers results in greater diffusion of responsibility and therefore less helping than the presence of friends (Rutkowski et al., 1983; Levine & Crowther, 2008), other research suggests that the increase in diffusion

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of responsibility comes from an increase in the sheer number of other people present in imagination (Garcia et al., 2002). In the present study, it was hypothesized that, consistent with Garcia and colleagues' mere presence explanation, the nature of the four imagined co-actors would not matter and helping would be similar in the *four friends* and *four strangers* conditions.

Method

Participants. A total of 167 undergraduate students participated for course credit. Seven participants were dropped from the analyses for not following instructions. The final sample consisted of 160 undergraduate students (114 women, 45 men, 1 unspecified).⁷

Procedure. As in Study 1, all participants completed the 12-item adapted SRA and were then randomly assigned to one of four conditions in which they imagined and described volunteering at a soup kitchen, volunteering to build a house for a needy family, and volunteering to help children at an elementary school. They imagined and described themselves performing the *actions alone* ($n = 37$), themselves performing the *actions together with two friends* ($n = 35$) (see Appendix B), themselves performing the *actions together with four friends* ($n = 51$), or themselves performing the *actions together with four strangers* ($n = 37$) (see Appendix D). After imagining the three scenarios and a 5-min word search filler task, all participants received the same helping request as in Study 1 (see Appendix C) and a manipulation check question about how many others were involved in their imaginary scenarios.

Results

Effect on number of times helped the other graduate student. A one-way between subjects analysis of covariance (ANCOVA) was conducted to examine the effect of the type

⁷ Sex of participant did not interact with the results to be reported.

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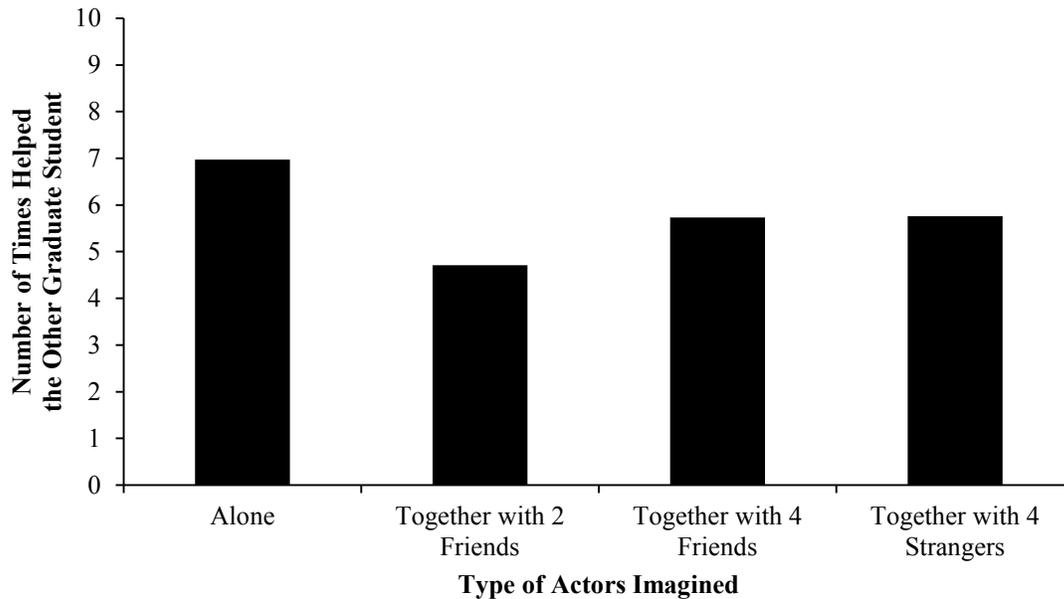
of actors imagined in the scenario (solitary vs. together with two friends vs. together with four friends vs. together with four strangers) on the number of 2-min time periods (out of a possible 10) in which participants helped the other graduate student by completing the consonant counting task. The 12 items from the adapted SRA were averaged to form one measure of reported past helping behavior ($\alpha = .85$), and this variable was used as the covariate to control for baseline differences in tendency to help others.⁸ The ANOVA revealed a non-significant main effect for type of actors imagined, $F(3, 155) = 2.22, p = .09$ (see Figure 2). However, in a focused comparison, participants who imagined pro-social actions taken alone helped more times ($M = 6.97, SD = 3.21$) than did the average of participants who imagined pro-social actions taken with two friends ($M = 4.71, SD = 3.54$), four friends ($M = 5.73, SD = 3.78$), or four strangers ($M = 5.76, SD = 3.54$), $t(156) = 2.36, p = .02$. The linear trend across the first three conditions (alone, with 2 friends, with 4 friends) was not significant, $F(1, 156) = 3.33, p = .07$, but the quadratic trend was, $F(1, 156) = 4.20, p = .05$.

⁸ Unlike in Study 1, the adapted SRA was not a significant predictor of helping, $F(1, 155) = 2.19, p = .14$.

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Figure 2

Number of times completed the helping task for the other graduate student (raw means) by type of actors imagined in scenario. Higher scores indicate more helping.



Discussion

The results of Study 2 replicated those of Study 1. Adding co-actors to imagined pro-social actions decreased subsequent helping compared to imagining solitary pro-social actions. These results, however, did not replicate Garcia and colleagues' (2002) finding of a significant trend in which helping decreased steadily as participants moved from imagining scenes that involved 1 to 10 to 30 friends. Study 2 also addressed the effect of the nature of the other people involved in the imaginary scenarios. These results suggest that imagining strangers as co-actors in imagined pro-social behaviors had no more or less effect than imagining friends.

General Discussion

When does imagination shape reality? The introduction to this paper presented a hypothetical scenario in which two spectators, Solitary Sally and Gregarious Greta, began to daydream about helping others while they waited for their friends to cross the finish line at the Boston Marathon. The only difference in their scenarios was the number of co-actors imagined. Sally imagined doing the volunteer work by herself, whereas Greta imagined doing the volunteer work together with two of her friends. The question raised by this introductory scenario was, if an emergency occurred during the marathon, which spectator would help more—Solitary Sally or Gregarious Greta.

The results of these two studies provide some support for the hypotheses. Previous research suggests that people actually offer less help, not more, after being in the actual (Darley & Latané, 1968) and imagined presence (Garcia et al., 2002) of many than few others, but did not measure the effects of imaginary scenarios that involved helping. The present Study 1 extended the previous research by showing that the number of imaginary others matters for imagined helping scenarios as much as it does for imagined non-helping scenarios. Participants who had imagined pro-social actions with two friends helped an experimenter less than did participants who had imagined pro-social actions taken by themselves. The present Study 1, however, did not include a true control condition in which participants invented no imaginary scenarios, so it is impossible based on the present results to determine whether the imaginary presence of two friends decreased subsequent helping or solitary helping decreased it.

The present studies also did not directly address the cognitive mechanisms responsible for the effects. Garcia and colleagues (2002) suggested that adding numbers of

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people to an imagined social context, even a social context unrelated to helping, primes lack of accountability. Accessibility of constructs related to unaccountability was not measured in the present Study 1 or 2, but should be included in future research of this type, because Garcia and colleagues (2002) found that their manipulation (imagining an event that includes 1, 10, or 30 friends) affected response latency for words related to unaccountability.

Furthermore, the present Study 2 failed to replicate the linear trend reported by Garcia and colleagues (2002), but that might have been because the manipulation used a restricted range of imagined others (from 0 to 2 to 4) rather than the much wider range used by those researchers (from 1 to 10 to 30). Latané (1981) reviewed studies of conformity, embarrassment, news events, bystander intervention, and helping, in all of which the number of people present affected responses according to a power law. The more people that were added, the larger the effects on these disparate dependent measures, but as the number of people increased, the impact of each additional person was diminished. The typical asymptote was between three and four people, which fits well within the present Study 2's result that the imaginary presence of four friends was no different from the imaginary presence of two friends. It would be surprising if it required as many as 30 imaginary people to have an effect in the present studies, but without future studies that used a wider range than in the present Study 2, it would be difficult to estimate the range for this particular type of manipulation.

The present Study 2 also added the useful information that imagined friends are no different from imagined strangers in their effects, as imaginary co-actors in pro-social behaviors, on subsequent helping of a specific other person in need. This result is somewhat surprising in that previous research has shown a difference between the presence of friends

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and strangers in the level of help afforded to victims of actual emergencies by bystanders. Rutkowski and colleagues (1983), for instance, demonstrated that when the norm of social responsibility was made salient, that is, when a victim's need for help was great, groups high in cohesion (e.g., friends) were more helpful than groups low in cohesion (e.g., strangers; Study 2). Future research is needed to determine whether imagined friends and strangers differ in their effects on opportunities to help a specific person who is an emergency victim versus one who is merely in need of assistance and also whether differences in helping occur when the norm of social responsibility is not made salient.

In spite of these limitations, the present research offers some support for extending Garcia and colleagues' (2002) findings from imagined non-helping scenarios to imagined helping situations, but also left many questions to be answered by future research. Taken together, however, the results of the present studies suggest that the number of co-actors included in imagined scenarios that involve helping can affect one's own subsequent actual helping. As mathematicians are fond of reminding us, imaginary numbers count.

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APPENDIX A

*Adapted Self-Report Altruism Scale: Studies 1 & 2
Baseline Measure of Past Helping Behavior*

As part of another study on helping, a total of 134 undergraduate students (96 women, 35 men, 3 unspecified) completed an adapted 29-item Self-Report Altruism Scale (SRA; Rushton, Chrisjohn, & Fekken, 1981) for course credit. Nine items were added to the original 20-item SRA Scale to include a wider variety of helping behaviors, and the wording of each item was changed to reflect past helping behavior. All items were answered on 5-point scales from 0 (*never*) to 4 (*very often*).

Adapted Self-Report Altruism Scale

Instructions: Place a **CHECKMARK** in the category on the right that conforms to the frequency with which you have carried out the following acts **in the past**.

	Never	Once	More than once	Often	Very often
1. In the past I have donated clothes to a church/shelter/Goodwill.					
2. In the past I have given a donation to a homeless person.					
3. In the past I have volunteered to help at a shelter.					
4. In the past I have made efforts to save the environment (e.g., recycle, use double-sided copying at the library, etc.).					
5. In the past I have adopted an animal from a shelter.					
6. In the past I have made a donation to a charitable organization					
7. In the past I have volunteered to help at a hospital.					
8. In the past I have held the door open for a person in a wheelchair.					

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	Never	Once	More than once	Often	Very often
9. In the past I have helped carry an elderly person's belongings.					
10. In the past I have given directions to someone who was of a different ethnicity than mine.					
11. In the past I have helped push a stranger's car out of the snow.					
12. In the past I have given directions to a stranger.					
13. In the past I have made change for a stranger.					
14. In the past I have given money to a stranger who needed it (or asked me for it).					
15. In the past I have donated goods or clothes to a charity.					
16. In the past I have done volunteer work for a charity.					
17. In the past I have donated blood.					
18. In the past I have helped carry a stranger's belongings (books, parcels, etc.).					
19. In the past I have delayed an elevator and held the door open for a stranger.					
20. In the past I have allowed someone to go ahead of me in a lineup (at a photocopy machine, in the supermarket).					
21. In the past I have given a stranger a lift in my car.					

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	Never	Once	More than once	Often	Very often
22. In the past I have pointed out a clerk's error (in a bank, at the supermarket) in undercharging me for an item.					
23. In the past I have let a neighbor whom I didn't know too well borrow an item of some value to me (e.g., a dish, tools, etc.)					
24. In the past I have bought "charity" Christmas cards deliberately, because I knew it was a good cause.					
25. In the past I have helped a classmate who I did not know that well with a homework assignment when my knowledge was greater than his or hers.					
26. In the past I have before being asked, voluntarily looked after a neighbor's pets or children without being paid for it.					
27. In the past I have offered to help a handicapped or elderly stranger across a street.					
28. In the past I have offered my seat on a bus or train to a stranger who was standing.					
29. In the past I have helped an acquaintance to move households.					

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Responses to the 29 items of the adapted SRA were subjected to a principal components analysis (PCA). In the PCA, 12 pro-social behaviors (with loadings of at least .55) formed a first factor that explained 25% of the variance.

Factor Loadings of Helping Scale Items: Study 1

Factors	Factor loading
	Past Helping
I have donated goods or clothes to a charity.	.65
I have offered to help a handicapped or elderly stranger across the street.	.64
I have delayed an elevator and held the door open for a stranger.	.63
I have made a donation to a charitable organization.	.62
I have helped carry a stranger's belongings (books, parcels, etc.).	.61
I have made change for a stranger.	.61
I have allowed someone to go ahead of me in a lineup (at a photocopy machine, in the supermarket).	.59
I have offered my seat on a bus or train to a stranger who was standing.	.55
I have helped an acquaintance to move households.	.55
I have helped carry an elderly person's belongings.	.55
I have held the door open for a person in a wheelchair.	.55
I have given directions to a stranger.	.55

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

APPENDIX B

Imagined Pro-Social Action Scenario Instructions by Condition: Studies 1 & 2

Actions Alone

Volunteering at a Shelter to Help in the Soup Kitchen

For the next few minutes, imagine a mental scenario in which you visualize **only yourself** (you alone) volunteering in the soup kitchen at a shelter. Imagine the **actions** you could take to volunteer.

Please list three **specific actions** you could take to volunteer in the soup kitchen at a shelter.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself** (you alone) volunteering in the soup kitchen at a shelter.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering to Help Build a House for Someone in Need

For the next few minutes, imagine a mental scenario in which you visualize only **yourself** (you alone) volunteering to help build a house for someone in need. Imagine the **actions** you could take to volunteer.

Please list three **specific actions** you could take to volunteer to help build a house for someone in need.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself** (you alone) volunteering to help build a house for someone in need.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering at an Elementary School to Help Children

For the next few minutes, imagine a mental scenario in which you visualize only **yourself** (you alone) volunteering at an elementary school to help children. Imagine the **actions** you could take to volunteer.

Please list three **specific actions** you could take to volunteer to volunteer at an elementary school to help children.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, write a description of the **actions** you imagined of **yourself** (you alone) volunteering at an elementary school to help children.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Together with 2 Friends Actions

Volunteering at a Shelter to Help in the Soup Kitchen

For the next few minutes, imagine a mental scenario in which you visualize **yourself and two of your friends** volunteering in the soup kitchen at a shelter. Imagine the actions you **and your two friends** could take to volunteer.

Please list three **specific actions** you and two of your friends could take to volunteer in the soup kitchen at a shelter.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the actions you imagined of **yourself and two of your friends** volunteering in the soup kitchen at a shelter.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering to Help Build a House for Someone in Need

For the next few minutes, imagine a mental scenario in which you visualize **yourself and two of your friends** volunteering to help build a house for someone in need. Imagine the **actions** you and your two friends could take to volunteer.

Please list three **specific actions** you and two of your friends could take to volunteer to help build a house for someone in need.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself and your two friends** volunteering to help build a house for someone in need.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering at an Elementary School to Help Children

For the next few minutes, imagine a mental scenario in which you visualize **yourself and two of your friends** volunteering at an elementary school to help children. Imagine the **actions** you and your two friends could take to volunteer.

Please list three **specific actions** you and two of your friends could take to volunteer to volunteer at an elementary school to help children.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself and two of your friends** volunteering at an elementary school to help children.

APPENDIX C

Helping Request (Studies 1 & 2)

*** Experimenter Message ***

You were randomly assigned to the condition that you are in for this study, and you are in a condition that takes less time than the other participants. There are 20 minutes remaining in this study, and you can choose how you would like to spend each of 10 two-minute time periods.

You have two choices for how you can spend this time:

(1) You can rate the funniness of cartoons

or

(2) You can help another graduate student with a master's thesis study. The other day another graduate student was running a study when the computer crashed, and the participant had to be dismissed. The graduate student was unable to collect all the data needed for the study and would really appreciate if you would help. I told the other graduate student that I would offer the study's task to participants in my study. The other graduate student's thesis task involves counting the number of consonants in a few sentences of text. You will not receive any extra credit for helping, because the credit had to be awarded to the other participant, but the other graduate student would really appreciate if you would help.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

APPENDIX D

Imagined Pro-Social Action Scenario Instructions by Condition: Study 2

Together with 4 Friends Actions

Volunteering at a Shelter to Help in the Soup Kitchen

For the next few minutes, imagine a mental scenario in which you visualize **yourself and four of your friends** volunteering in the soup kitchen at a shelter. Imagine the actions you **and your four friends** could take to volunteer.

Please list three **specific actions** you and four of your friends could take to volunteer in the soup kitchen at a shelter.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the actions you imagined of **yourself and four of your friends** volunteering in the soup kitchen at a shelter.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering to Help Build a House for Someone in Need

For the next few minutes, imagine a mental scenario in which you visualize **yourself and four of your friends** volunteering to help build a house for someone in need. Imagine the **actions** you and your four friends could take to volunteer.

Please list three **specific actions** you and four of your friends could take to volunteer to help build a house for someone in need.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself and your four friends** volunteering to help build a house for someone in need.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering at an Elementary School to Help Children

For the next few minutes, imagine a mental scenario in which you visualize **yourself and four of your friends** volunteering at an elementary school to help children. Imagine the **actions** you and your four friends could take to volunteer.

Please list three **specific actions** you and four of your friends could take to volunteer to volunteer at an elementary school to help children.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself and four of your friends** volunteering at an elementary school to help children.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Together with 4 Strangers Actions

Volunteering at a Shelter to Help in the Soup Kitchen

For the next few minutes, imagine a mental scenario in which you visualize **yourself and four strangers** volunteering in the soup kitchen at a shelter. Imagine the **actions you and four strangers** could take to volunteer.

Please list three **specific actions** you and four strangers could take to volunteer in the soup kitchen at a shelter.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself and four strangers** volunteering in the soup kitchen at a shelter.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering to Help Build a House for Someone in Need

For the next few minutes, imagine a mental scenario in which you visualize **yourself and four strangers** volunteering to help build a house for someone in need. Imagine the actions you and four strangers could take to volunteer.

Please list three **specific actions** you and four strangers could take to volunteer to help build a house for someone in need.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the actions you imagined of **yourself and four strangers** volunteering to help build a house for someone in need.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

Volunteering at an Elementary School to Help Children

For the next few minutes, imagine a mental scenario in which you visualize **yourself and four strangers** volunteering at an elementary school to help children. Imagine the **actions** you and **four strangers** could take to volunteer.

Please list three **specific actions** you and four strangers could take to volunteer to volunteer at an elementary school to help children.

Specific Action 1:

Specific Action 2:

Specific Action 3:

In the space provided, please write a description of the **actions** you imagined of **yourself and four strangers** volunteering at an elementary school to help children.

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS

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ABSTRACT

EFFECTS OF IMAGINED PRO-SOCIAL ACTIONS ON SUBSEQUENT HELPING: IMAGINARY NUMBERS COUNT

by Emily Lauren Smith, Bachelor of Science, 2010
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When does imagination shape reality? We know that the presence of others subsequently results in less helping because of diffusion of responsibility, but what effect does the imagined social context have on translating imagined helping into actual actions? People help less in actual situations, for instance, when others are present than when they are alone, but are they also less likely to help in actual situations when they have recently *imagined* helping with others than helping by themselves? Two studies addressed this question. Compared to those who imagined helping by themselves, participants who imagined helping with others subsequently were actually less likely to help (Study 1), whether the others were friends or strangers (Study 2).