BE THE CHANGE YOU WANT TO SEE IN THE WORLD:

BEING PROSOCIAL IMPROVES ATTRIBUTIONS OF ANOTHER

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ABSTRACT

BE THE CHANGE YOU WANT TO SEE IN THE WORLD:

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KEVIN J. WILLCOX

Having positive and prosocial attributions about others is crucial for well-being. While research has thoroughly demonstrated the importance of having positive attributions toward the people we interact with, there is little research that investigates what a person can do to improve their attributions of the people they interact with. In two experimental studies I investigate the impact on attributions toward another person caused by giving a resource to and feeling empathy toward them. I use 2 (giving: before/after attribution measures) by 2 (empathy: present vs. absent) between participants designs. Both studies showed that both giving to the other person and feeling empathy toward them improved prosocial attributions of the other person and reduced antisocial attributions. Giving and empathy interacted to affect the amount of the resource that participants gave. This impacted attributions such that those who gave more had more prosocial and fewer antisocial attributions about the other person. These results suggest that a single act of giving and empathy improved attributions about another person, and that participants attributions of the other person depended upon the way they treated them. These results are important because they suggest that each socially oriented thought and behavior a person has affects the way they see people. This has implications for any research involving human interaction or social perception. Future research should investigate the boundary conditions for these effects and their impact on other scenarios.

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Table of Contents

List of Tables

List of Figures

For my father, Jim Willcox,

who could not have possibly known

how deeply his words would touch my heart

every morning as my sister and I left for school:

“Be good to each other. Take care of each other.

Love each other.”

Introduction

Social situations are an integral part of our everyday lives. Dyadic interactions are their foundation (Caporael, 1997; Rusbult, & Van Lange, 2003; Thibaut, 2017). A mother feeds her child. A boss gives her employee a raise. A young man has a conversation with a familiar gas station attendant. These interactions can contribute to or detract from our quality of life (Bergman et al., 2010; Mikulincer & Shaver, 2007; Simmons et al., 2009). They can leave us feeling drained, like an argument with a significant other, and they can make us feel good, like receiving a call from an old friend.

One factor that determines whether a person enjoys these situations is the extent to which the interaction is prosocial (Algoe et al., 2008; Coan et al., 2006; Orbell, & Dawes, 1991). People benefit from being both the agent and recipient of prosocial behaviors like empathy and generosity (Algoe et al., 2008; Algoe, & Haidt, 2009; Ferguson et al., 2010; Hamilton, 2017; Rumble et al., 2010). One type of prosocial behavior, kindness, "produces the single most reliable momentary increase in well-being" known to scientists today (Seligman, 2012). While some benefits certainly come about from healthy, long-term, stable relationships (Mikulincer, & Shaver, 2007), prosocial behavior also effectively improves even the briefest interactions with strangers. A kind word to an exhausted grocery store clerk can be a welcome relief and help their day go more smoothly. It is also enjoyable for the person who is being kind. Regardless of the context, prosocial behavior tends to have an uplifting effect on those who perform it and those who witness it (Algoe, & Haidt, 2009).

In this paper, I address the role prosocial behavior may play in the attributional process. Particularly, I explore the effect that one person's prosocial behavior may have on their own attributions of another person. While most of us would prefer to interact with people who are kind, few researchers have investigated whether our own behavior affects our perceptions of the people we judge as kind or not. If indeed our behavior does affect our perceptions of others,

then illuminating that process might have numerous implications for how to promote subjective well-being.

In this paper, I ask the question: do an actor's emotions and actions affect their expectations, attributions, and impressions of a single other in a brief interaction? First, I will discuss interdependence theory as a framework to discuss the attributional process. Then I will discuss the attributional process. Then I will discuss why I chose to investigate this question through prosociality. Third, I will discuss methods, results. Finally, I will discuss the implications and limitations of these studies.

Interdependence Theory

Change can happen quickly in social interaction. It can, therefore, be beneficial to use a framework that accurately represents all those changes. Interdependence theory provides such a framework. Interdependence theory is a comprehensive theory of social interaction that seeks to understand them by investigating the interplay between situational factors and each participant's internal factors (Kelley & Thibaut, 1978; Van Lange & Rusbult, 2011). According to interdependence theory, each situation has four parts: structure, interaction, transformation and adaptation. This paper is mostly concerned with transformation, how an individual's dispositions, behaviors and thoughts transform the situation *for them*.

There are several ways that a person can subjectively transform an interaction. First, cognitions, affects and habits can transform a situation. For example, some people are predisposed to put their own self-interest above others' interests. This type of person would consider the outcomes of a situation differently than a person who equally prioritizes their own outcomes and the other person's outcomes (Murphy et al., 2011). A self-interested person may consider a cooperative situation in terms of "power" whereas a cooperative person would consider it in terms of "goodness" (Liebrand et al., 1986). This leads the self-interested person to prioritize selfish outcomes to gain power, whereas the cooperative person will prioritize mutually beneficial outcomes for the sake of goodness.

Two other ways that a person may transform situations are through communication and attribution. In Interdependence theory, communication is the process whereby one person communicates something about themself to the other person. At the same time, the other person makes attributions about that person. For example, if a boy tells a joke to a girl at a party (communication), the girl may attribute that behavior to romantic interest or may attribute that behavior to the boy's general disposition: that he is generally nice and funny, but not necessarily romantically interested. Communication and attribution transform an interaction in different ways. Communication transforms an interaction by contributing new information, thereby altering the situation. Attribution transforms a situation because the person who is making attributions *assumes* new information which may or may not be correct. Interdependence theory provides a framework to map the transformational process of attribution.

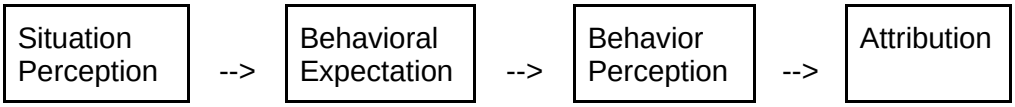
The Attributional Process

People engage in the attributional process to understand and form meaningful perspectives about the events that happen in their lives. This can allow them to accurately predict other people's behavior in the future (Kelley, 1967; Kelley, 1973; Weary et al., 2012). In daily life, we often lack information about our situation and the people we are interacting with. Because of this, we engage in the transformational process of attribution. We use contextual clues and past experience to make inferences about others' dispositions and psychological states (Weary et al., 2012).

The sequence of events that occurs during an attribution is represented below in Figure 1 (Gilbert, & Malone, 1995).

Figure 1

The Flow of the Attributional Process



Importantly, behavioral expectations occur early in the attributional process. After an attributor perceives the other's behavior, they compare the other's behavior with their original expectation. Then, the attributor decides if the person's actions were due to dispositional or environmental causes and sometimes makes other inferences about the psychological state of the person, called impressions (Kelley, 1967; Gilbert, & Malone, 1995; Weary et al., 2012). For example, if I am watching a play in a theatre, my behavioral expectation is that people will be quiet. If a person is talking on the phone (behavioral perception), I will attribute the cause of their behavior to their disposition. I may go on to form an impression of them as "rude." However, if I overhear them say "which hospital?" and then rush out of the theatre, my attribution, and impressions of them will shift because I have new information.

To date, most attribution studies have investigated how cues outside of an individual attributor (environmental cues and qualities/actions of the person onto which the attributions are being projected) affect their attributions of others (Weary et al., 2012). For example, in the extensive literature on how people assign blame, participants will differentially assign blame to both a rape victim and the perpetrator depending on their perception of the *situation* (stranger rape, date rape, or seduction rape) (Grubb, & Harrower, 2009; Shaver, 1985). Similarly, when a participant expected others to like a video, and those others did, in fact, like the video, the participant attributed their liking of the video to the video, the situation (Kulik & Taylor, 1980).

Much research has also investigated how the perceived *disposition* of another person affects an observer's attributions of them. For example, a victim's gender, sexual orientation, and response to being raped all affect an attributor's attributions of blame (Davies et al., 2009).

Dispositional causes of attributions are not just present in victim blame research. Stereotype research investigates similar phenomena. If a participant is asked to make attributions of an attractive person of the opposite sex, they often make more positive attributions of that person than they do about an unattractive person (Snyder et al., 1977). These are not just related to attractiveness, but also include such varied attributions as intelligence, friendliness, and trustworthiness (Snyder et al., 1977).

There is a relative gap in the research on how *observer* characteristics and actions affect attributions about others (Shaver, 1985; Van der Bruggen, & Grubb, 2014; Weary et al., 2012). There are some investigations into this question, scattered across a few different areas of research. For example, observer racism affects the extent to which they attribute blame to a rape victim in interracial vs. intraracial rape (George & Martinez, 2002). Also, a person's personality affects the traits they see in others (Srivastava et al., 2010). In a study on false consensus, when a participant chose to not wear a sandwich sign around campus for half an hour, their choice affected their attributions of others who chose to wear the sign (Ross et al., 1977). While these studies show that characteristics of the observer affect their attributions about others, there has not been a systematic investigation of this phenomena across research topics.

Even though there has been little systematic research into perceiver effects on attributions, researchers have posited a few explanations for perceiver influence on attributions. Judgmental heuristics such as availability, representativeness and adjustment may be at play in the attributional process (Kahneman, 2011; Shaver, 1985). Perceiver motivation may also play a role in attributions (Shaver, 1985; Weary et al., 2012). Across these different types of research, it is generally agreed that more research is needed to understand how characteristics and actions of the perceiver affect their attributions about others.

Expectations in Attributions

Sometimes, the perceiver's dispositions can affect expectations about another person. Social Value Orientation is one of the few areas of research that has consistently investigated and demonstrated that participant behavior affects their expectations for a single other person. When participants enter a social dilemma (a situation where acting selfishly will yield the greatest short term rewards for one person, but acting cooperatively will yield mutually beneficial rewards), people who are habitually cooperative expect others to cooperate. Habitual defectors, on the other hand, expect that the person they are going to interact with will defect (Van Lange, 1992; Pletzer et al., 2018). A similar finding is demonstrated in research on trust. People who act in a trustworthy manner are more likely to trust others (Glaeser et al., 2000). These studies provide some evidence that we expect others to act like us.

Another study did not investigate a behavior-expectation link directly. However, the authors made sense of their data by assuming the behavior-expectation relationship. False Consensus Bias is the tendency to assume that others would act like us in a given situation. For example, students who are willing to walk around campus wearing a sandwich board that says "Eat at Joe's" assume that most of their peers would do the same. Students who refuse, assume that most of their peers would also refuse (Ross et al., 1977). Most studies into False Consensus study the effect a person's own behavior has on their expectations for the population in general (Mullen, 1985). However, one study extended "False Consensus" to attributions about individual others (Ross et al., 1977). Participants who chose not to wear the "Eat at Joe's" sign made stronger dispositional attributions for people who did wear the sign. That is to say "the person who wore the sign did something I did not do, which is unexpected. There must be something different about that person." The authors made a conceptual leap. Attribution research has demonstrated that we often make dispositional attributions about another person when they violate our expectations (Weary et al., 2012). Because participants made dispositional attributions about people who did not act similarly to them, the authors

assumed that the participants expected that individual person to act like them. This seems like a plausible explanation of the results.

Personality traits may also affect expectations and attributions about others (Campbell et al., 1964; Srivastava et al., 2010). After 450 college students rated themselves and others (people in their social group and pictures of unknown people) on 27 different traits, researchers evaluated these projection measures for evidence of four different types of projection. They did not find evidence for “similarity projection,” the classic idea of projection where (for example) a hostile person projects hostility onto others. Rather, their data most supported “contrast projection” along an assertiveness-passivity factor. Contrast projection involves interpreting others’ behavior using one’s own behavior as the expected norm against which others’ behavior is judged. For example, a person who is dependent on others will judge another as “not dependent” if the other appears less dependent than they are, and “dependent” if the other person appears more dependent than they are. While this study did not measure expectations directly, it implies that our own dispositions function to inform our expectations of others. It is upon these expectations that we form our judgements of others.

In this research, I will not investigate expectations directly, but I will be measuring attributions that are based on expectations informed by the perceiver’s behavior.

Attributions of Causality, Responsibility, Praise and Blame

Locus of causality is an important aspect of attributions. When making attributions, people are trying to make sense of their world so that they can create valid predictions about the future. Understanding the extent to which a person caused and was responsible for their own situation and the behavior they exhibit is a crucial component of that process. It is important to note that attributions of causality and responsibility are sometimes different (Shaver, 1985). For example, if a friend is fired from their job, we can say that the boss technically caused the firing of our friend. However, if we know that our friend constantly shows up to work late and does not follow through on commitments, we might still hold our friend responsible for losing their job.

Expectations sometimes play a role in locus of causality attributions. For example, if one person observes another performing an unexpected behavior, the observer is likely to draw dispositional inferences about that person (“that person chose to do that behavior”). On the other hand, if a person observes another performing an expected behavior the observer is likely to attribute their behavior to environmental causes (Shaver, 1985). Participants who did not enjoy a beverage expected that others in the population would also not enjoy that beverage (Hansen and Donoghue, 1977). When participants were led to believe that another person enjoyed the beverage, the participant made dispositional attributions about that person. They assigned the locus of causality to the person who enjoyed the beverage, whereas, for people who did not enjoy the beverage, the locus of causality for not enjoying the beverage was assigned to the beverage. The participants' experience of the beverage not only affects their expectations of the general population, but also their attributions of an individual within the context of their expectations.

Another study found similar results. Participants’ opinions of a video affected both their expectations of the percentage of the population that would find the video funny, and their attributions about a single other person who either liked or disliked the video (Kulik & Taylor, 1980). Participants who liked the video attributed another person’s liking of the video to the video, whereas they attributed disliking of the video to the person’s disposition. The opposite was true for participants who disliked the video. In both studies, a single participant’s behavior affected their attributions of whether another person caused their behavior or not.

Attributions of responsibility, praise and blame are more socially constructed than attributions of causality (Shaver, 1985). Attributions of responsibility are complex, involving perceived causality, foreseeability, intentionality, and justifiability (Shaver, 1985). Attributions of praise and blame are similarly complex, but what is relevant to this discussion is that they “[rest] on a decision about responsibility” (Shaver, 1985, p. 160). If a person is seen to be responsible

for some positive outcome, they are subject to praise. If a person is considered to be responsible for some negative outcome, they are subject to blame.

Many studies have investigated the process of assigning blame (Shaver, 1985; Van der Bruggen, & Grubb, 2014). One study found that the degree to which a participant identifies with a rape victim affects the degree to which they blame that victim for the rape (Grubb, & Harrower, 2009). A review of rape victim blame literature found that both victim and observer characteristics affect attributions of blame (Van der Bruggen, & Grubb, 2014). Comparatively fewer studies have investigated the process of praise. While I found no studies that studied praise specifically, studies into attributions in marital relationships have found that individuals who are satisfied in their relationships are more likely to attribute positive events in the relationship to their partner's disposition (Bradbury, & Fincham, 1990). Also, wives who engage in healthy problem-solving strategies with their husbands are more likely to attribute positive outcomes to their husbands' disposition (Bradbury, & Fincham, 1992). These studies measured the attribution of causality, but it seems likely that people who are satisfied with their relationships and attribute positive events to their partner's disposition would also think that their partner's behavior is praiseworthy.

Impressions

Impressions are important to the attributional process because they are an integral part of making dispositional attributions (Weary et al., 2012). For example, an observer just had a fancy meal with a potential business partner, Lynda. Both parties are dressed in exorbitantly priced clothing. As they exit the restaurant, the observer sees Lynda bend down to pick up a piece of litter that is outside on the street to throw it away with her bare hands. Because Lynda's actions violate expectations for appropriate behavior at the time, the observer attributes Lynda's actions to a dispositional cause. Along with that dispositional attribution, the observer forms an impression of the potential business partner as "conscientious." Impressions are an important part of attribution because they can help us make predictions about the future. If Lynda picked

up the piece of paper because she is conscientious, she may be conscientious in her business dealings as well.

Most impression research focuses on impression formation as a result of some characteristic of the target or situation. Nevertheless, there is some evidence that our actions towards a person affect our impressions of them. For instance, when a target person is cooperative, both cooperative and uncooperative participants form “good” impressions of that target. However, cooperative participants see that target as more “powerful” than uncooperative participants. On the other hand, when the target is uncooperative (selfish), both cooperative and uncooperative participants view the target as “powerful,” but uncooperative participants view the target as more “good” than cooperative participants (Liebrand et al, 1986). This is an example of how our behavior might affect our impressions of others.

Prosocialilty and Attributions

While many phenomena can transform a situation, of particular interest in this paper, is prosocial emotions and behavior. Prosociality, in various forms, is widely demonstrated to transform a situation both for the actor and the other (Batson & Ahmad, 2001; Coan et al., 2006; Freeman et al., 2009; Rumble et al., 2010). A researcher could investigate our questions using any emotion and behavior. Indeed, some of the previous research I have reviewed investigates the effect of anti-social beliefs (like racism), and mundane behaviors (like wearing a sandwich sign or being gullible) on expectations of others (Campbell et al., 1964; George & Martinez, 2002; Ross et al., 1977). I am choosing to investigate prosocial behavior because it has the greatest implications for well-being (Seligman, 2012). I particularly wanted to investigate the effect of empathy and generosity on the attributional process. Empathy is shown to affect the attributional process and generosity is likely to affect the attributional process.

Empathy

One form of prosocial emotion that can transform situations is empathy. While there are many ways to define empathy, I use Batson’s operationalization of the term here. The

prerequisites for empathy are 1) perceiving another person as in need and 2) taking that person's perspective (Batson, & Shaw, 1991). Empathy itself is "a set of congruent vicarious emotions… that are more other-focused than self-focused, including feelings of sympathy, compassion, tenderness, and the like" (Batson, & Shaw, 1991). This feeling serves to motivate altruistic behavior (Batson, & Shaw, 1991; Batson et al., 2002).

One effect that empathy can have on a situation is that it can transform how people value their own and the other person's outcomes. A person who feels empathy sometimes prioritizes another person's outcomes over their own (Batson, & Shaw, 1991). For example, participants who felt empathy for another person and had the opportunity to take electric shocks in their stead, were more likely to help than those who felt personal distress at seeing another person be shocked (Batson et al., 1989). Also, when participants were induced to feel empathy for another, they were more likely to cooperate with them in a social dilemma, even in the face of non-cooperative behavior from the other (Batson, & Ahmad, 2001; Rumble et al., 2010). This may happen as a result of a shift in self-concept to include the other person (Cialdini et al., 1997). This shift in self-concept may have some effect on attributions of locus of responsibility.

People tend to attribute their own behavior to environmental causes, whereas they attribute others' behavior to dispositional causes (Weary et al., 2012). This tendency changes in cases of success and failure. When a person succeeds, they tend to attribute their success to some dispositional cause ("I did good on the test because I studied hard"). When a person fails they tend to attribute their failure to some environmental cause ("I did poorly on the test because the professor did not prepare us very well") (Shepperd et al., 2008). People are not so generous in their attributions of others. Regardless of whether another person succeeds or fails, we tend to attribute other people's behavior to dispositional causes (Gilbert & Malone, 1995). Empathy changes this tendency. Above, I suggested that empathy may cause a person to prioritize another's outcomes over their own because they adjust their self-concept to include the other

person (Cialdini et al., 1997). Another potential effect of this redefinition of self is that our attributions of the other follow the patterns as if we were making attributions of ourselves.

Participants who were induced to feel empathy for another participant in a benign "getting to know you" scenario were more likely to attribute that person's behavior to environmental causes. Participants who were not induced to feel empathy were more likely to attribute that person's behavior to personal characteristics (Regan & Totten, 1975). This mimics the pattern of self-serving attributions whereby a person is apt to attribute their own behavior to environmental causes (Weary et al., 2012). This pattern was also found in participants who observed rape victims (Yalçın, 2006). Participants who had high empathy for rape victims attributed the attack to environmental circumstances, whereas participants who experienced less empathy, attributed the attack more to disposition of the victim (Yalçın, 2006).

Another self-focused pattern of attribution is found when a participant is induced to feel empathy for another that is attempting to attract a mate. If that person succeeds at attracting a mate, they attribute their success to something about the person. But if that person fails in attracting a mate, the failure is attributed to more external causes. Participants who are not induced to feel empathy attribute both success and failure to dispositional causes (Gould & Sigall, 1977). This evidence suggests that empathy may affect participants' attributions of locus of responsibility.

Generosity

Generosity is well demonstrated to change the way a person thinks about and acts in a situation. In social exchange research that investigates dyadic interaction strategies in economic games, participants are prompted to give between 1 and 10 points to the other player or keep those points for themself. A tit-for-tat is a strategy where a person B responds exactly as person A acted previously. Generous strategies are those where person B responds by adding one to the way that person A acted previously. In a social exchange game, when participants were paired with a generous computer strategy, participants behaved more cooperatively than when

the computer used a tit-for-tat strategy (Van Lange et al., 2002). This shows that participants interacting with a generous computer strategy conceived of the situation differently than those interacting with a tit-for-tat computer strategy. Another study examined the effects of generosity within college sororities. Sorority members spent a week giving gifts to their “little” (another young woman who was attempting to join the sorority). The generosity transformed the situation by inspiring gratitude in the little and facilitating emotional bonds. A month after this week of gifts, the dyads that ranked highest in generosity and gratitude had the strongest relationships (Algoe, et al., 2008). These studies show that generous behavior can transform a situation by inspiring prosocial feelings and behavior.

Generosity may affect the attributional process as well. Couples in satisfying relationships (that involve higher levels of generosity) are more likely to attribute positive aspects of their relationship to their partner (Jacobson et al., 1982; Thompson and Kelley, 1981). Similarly, satisfied couples are more likely to attribute their partner’s positive behavior to their partner’s disposition and negative behavior to environmental causes. On the other hand, distressed couples are more likely to attribute their partner’s positive behavior to some environmental cause but attribute their partner's negative behavior to dispositional aspects of their partner (Jacobson et al., 1985). These studies suggest that generous behavior is correlated with favorable attributions in romantic relationships. This, however, does not give an insight into directionality. It is still an open question as to whether generous behavior causes positive attributions, positive attributions cause generous behavior or there may be a bi-directional relationship between attributions and behavior.

It is also likely, based on the false consensus effect and studies into social value orientation, that generous behavior would lead a person to expect another person to act generously, though there have been no studies investigating this directly.

The Act of Giving

It may be the case that simply having to make a choice of whether to be generous to another person affects the attributional process. Self-Perception Theory suggests that sometimes a person may infer their own beliefs and attitudes from their own behavior. This has only been tested in regard to beliefs about inanimate objects and ideas. For example, children were brought into a lab and asked to rate toys. The next week, the same children were brought into the lab and were allowed to choose a toy. After being able to choose a toy, the chosen toy was rated more favorably, and the unchosen toys were rated more negatively (Brehm, & Cohen, 1959). This shows that the act of making a choice can affect our attitudes. Another study had participants write a pro-attitudinal essay. Participants in the experimental condition were given the opportunity to edit that essay to make it more extreme, but they declined. Participants in the control condition were not given the chance to edit their essay. Participants who witnessed themselves declining the opportunity to edit their essay, rated their attitudes on the subject as less extreme than those who were not given the opportunity to make the choice (Zanna, 1972). These studies suggest that making a positive choice and a negative choice may affect a person's attitudes relative to not making a choice at all.

These studies only look at participants' attitudes towards objects and ideas. This may function differently than attributions and impressions of people. However, because this question has never been tested (to my knowledge), and because it makes intuitive sense, it is worth investigating. It may be the case that if a participant has the opportunity to give, and chooses not to, they may report more negative attributions of the other person as opposed to a participant who did not have the opportunity to give to another person at all. Whereas a participant who has the opportunity to give and does give may report more positive attributions of another person than a participant who did not have the opportunity to give at all.

Hypotheses

There are three theoretical perspectives which suggest that prosocial thoughts and behavior may affect attributions. First, False Consensus Bias suggests that our own behavior affects our expectations of people in the population at large, and our expectations of individual others (Ross et al., 1977). Therefore, it may be the case that being empathetic or acting generously towards a person would cause us to expect that they would act similarly in such a situation. Because expectations play an integral role in the attributional process, this False Consensus may affect attributions and impressions of that other person.

The second theoretical perspective is Daryl Bem's Self-Perception theory. It suggests that we learn about ourselves, our attitudes, and beliefs by witnessing our own behavior (Bem, 1972). This suggests that if we see ourselves being generous to a person, we might assume that we hold positive beliefs about that person. Our behavior might lead us to assume that we believe that this person deserves our generosity for some reason. Maybe they are a good person, or in need. This would also likely include self-attributions, that we would see ourselves as a generous person because of our generous behavior.

The final theoretical perspective that suggests prosocial thoughts and behavior may affect attributional processes are self-serving motivational biases (Shepperd et al., 2008). This is the tendency for people to attribute their successes to their own good qualities, and their failures to some external cause. A pair of examples might be the student who blames their poor grade on the fact their roommate kept them awake the night before a test but attributes their success to their sharp intellect. Motivational biases may specifically be at play in this study as a result of empathy which can cause self-other merging (Cialdini et al., 1997).

While empathy has been shown to impact the attributional process, I know of no studies that have directly investigated the effect of generosity on attributions. It might be possible that people have investigated this relationship but there are no published studies because the results were non-significant, and thus relegated to the "file drawer." However, because few

studies have investigated the effect of behavior on the attributional process in general, I find it more likely that this is simply a gap in the research.

In this study, my hypothesis is that empathy and generosity will transform a situation by influencing a participant's attributions of another person. Specifically, my hypotheses are:

1. The timing of giving either before or after filling out the attributions measure will impact participant attributions of the other. Specifically, if the individual gives before filling out the attributions measure, they will rate the other as more good, more praiseworthy, and less blameworthy than participants who give after filling out the attributions measure.
2. Empathy will
    a. increase the amount participants give to the other person compared to no empathy.
    b. Improve participant attributions of the other person compared to those in the no empathy condition. Specifically, participants in the empathy condition will rate the other as more good, more praiseworthy, and less blameworthy compared to participants in the no empathy condition.
3. Empathy and giving before/after attributions will have additive effects on participant attributions of the other as good and praiseworthy while having subtractive effects on their attributions of the other as blameworthy.

Study 1

Methods

Research Design

I used a 2 (Empathy: present or absent) by 2 (Giving: before/after attributions) between-participants design.

Table 1

Research Design and Variables

IV 1	IV 2	
	No Empathy (minor need, no perspective taking)	Empathy (perspective taking plus need)
Giving before attributions	DV: attributions of goodness, praiseworthiness, & blameworthiness	DV
Giving after attributions	DV	DV

Empathy condition-----> giving -----> attributions measure

Empathy condition-----> attributions measure -------> giving

Note. The vertical column is the first independent variable where the participant is presented with evidence that their "partner" is either in need or not in need and given directions to perspective take or not. The first row shows that each participant will also be in *giving before attributions* or *giving after attributions* condition. The dependent variables are the amount of money given, and attributions of goodness, praiseworthiness, and blameworthiness.

Participants

Participants were recruited through the Qualtrics online study pool. They were 232 adults in the United States. There were 117 female, 113 male, and 2 non-binary participants. 176 were white, 38 were black or African American, 9 were Asian, 4 were American Indian or Pacific Islander, 10 were Latino/Latina, and 1 was Samoan (some participants chose two races). Participants accessed the study from the Qualtrics website from a computer of their choice. In the waiver, they were informed that they were participating in a study about attributions. Participants received a $4.50 payment plus a $3 bonus for participating.

A power analysis was difficult because this is a relatively uninvestigated phenomenon. The closest effect for which I could find an effect size was False Consensus Bias. A meta-analysis of 115 studies of False Consensus Bias suggest that it's effect size was d = .65. I chose to power for a slightly smaller effect, d = .5. I used G*Power to run the power analysis.

G*Power suggested 199 participants. False Consensus Bias studies use Cohen's d to measure the size of effects, but I am using ANOVA and the effect size n^2. Therefore, I based my power estimates off the general guidelines for small, medium and large effects.

Dictator Game

I chose to use an economic game called the dictator game as the format for my study. Economic games are experimental paradigms that have been used to investigate various social psychological phenomena for decades. Scientists use economic games because they control for the confounds of more natural settings. Attributions, interdependence theory, empathy and generosity all have a long tradition of being studied through economic games (Liebrand et al., 1986; Rumble et al., 2010; Stouten et al., 2006; Kelley and Stahelski, 1970).

In these studies, I used a modified form of the dictator game. In the dictator game the participant is given a sum of money and the opportunity to give all, some, or none of that money to another participant. In this study, however, the "other participant" was not a real participant, but instead was part of the empathy manipulation. Participants received $3 and the opportunity to keep or donate some or all of that money to what they were told was another participant. If they chose to give money to the other "participant," they were informed at the end of the study that they actually got to keep the money.

Manipulations

All materials for Study 1 can be found in Appendix C.

Empathy.

The first experimental manipulation was empathy vs. no empathy. This manipulation has been shown to increase both empathy and generosity. I used it here not only to increase empathy, but also to ensure that participants who felt empathy gave more than those who did not feel empathy (Batson & Ahmad, 2001). Participants in *both conditions* saw text on the screen that read "Please write something that you have been worrying about recently. The other

participant has been directed to do the same. After you are both finished, only one of you will be randomly selected to receive the others' writing. Each of you have two minutes to complete the task, after which your answers will be automatically submitted." After two minutes, participants received the text "The other participant was randomly selected to be the one whose text is shared. Therefore, they will not receive your text. Please take a moment to read what they wrote which will appear on the next screen." Participants in the *empathy condition* additionally read the text "After reading their situation, we will ask you to take thirty seconds to take the perspective of the other participant." Participants in *both conditions* then clicked next. On the next screen was the other "participant's" situation. Those in the *no empathy condition* received text that read "Honestly, I'm not really worried about anything right now. My life's going pretty well. I guess... I ran out of eggs today, so I'll have to go pick some up." Those in the *empathy condition* received the text "The only thing that I can seem to think of is that two days ago I broke up with my boyfriend. We've been dating since our junior year in high school and have been really close. It's been great living together during COVID. I thought he felt the same way, but I guess that things have changed. Now he wants to date other people. He says that he still cares a lot about me, but he doesn't want to be tied down to just one person. I've been kind of upset and now I have to find a new place to live. It's all I think about. My friends all tell me that I'll meet other guys and all I need is for something good to happen to cheer me up. I guess they're right, but so far that hasn't happened." Those in the *empathy condition* received additional text which read "Please take thirty seconds to put yourself in the shoes of the other participant. Feel what they may be feeling. Imagine what it might be like to be them. When you are ready to begin taking their perspective, please press the start button and a timer will start." After reading this text and taking the perspective of the other person (empathy condition), participants in both conditions clicked "next," and either completed the attribution survey or the dictator game depending on whether they were in the *giving before attributions* or *giving after attributions* condition.

Giving before or after attributions.

Participants were given money and the opportunity to give some or all that money to the other person. Participants in the *giving before attributions* condition received a message that said “Before moving on to the next portion of the study, you have been randomly selected to receive a $3 bonus. You are welcome to give all, some or none of this bonus to the other participant if you so desire. If you choose not to, they will not know that you were given any money. Please select a dollar amount that you would like to give to the other participant from $ 0 – 3.” Once the participants chose a dollar amount and pressed submit, they then filled out the attribution measures. Participants in the *giving after attributions* condition received the same instructions, but in reverse order. First, they filled out the attribution measures. Then they had the opportunity to give to the other participant.

Measures

The empathy manipulation check is taken from Batson and Ahmad’s (2001) paper. It uses a 7-point unipolar Likert scale to measure six different adjectives: *sympathetic, warm, compassionate, soft hearted, tender* and *moved* (Cronbach’s alpha = .91). This empathy manipulation check has been used in multiple studies.

To create a measure for attributions of “goodness,” I used findings from Smith, Smith and Christopher’s paper (2007) where they investigated what defines a “good” person in various cultures. I did not want a cross cultural understanding of goodness because the qualities of goodness vary quite a bit from culture to culture. So, I chose the four top qualities that United States’ participants consider embody a good person: *caring*, *generous, trustworthy,* and *kind* (Study 1: Cronbach’s alpha = .85; Study 2: Cronbach’s alpha = .88). These qualities were measured for both self and other on a 7-point unipolar Likert scale.

The blameworthy measures are based on a study described by Shaver (1982, as cited in Shaver, 1985) and the praiseworthy measures are original. “Blameworthy” was measured on a 7-point Likert scale with the words *guilty*, *at fault*, *blameworthy* (Study 1: Cronbach’s alpha =

.88; Study 2: Cronbach's alpha = .86). "Praiseworthy" was measured on a 7-point Likert scale with the words *praiseworthy*, *deserving*, *commendable* (Study 1: Cronbach's alpha = .79; Study 2: Cronbach's alpha = .59).

Procedure

Participants took part in these studies through a device of their choice, online. They first filled out consent and demographic information. Then received the message "during this study you will be paired with another Qualtrics worker. When you are ready, click next and we will pair you with another participant." When the participant clicked next, they were taken to a screen that said "waiting for the other participant…" After thirteen seconds, the participants were then guided to the next screen which began the empathy manipulation.

After the empathy manipulation, participants then participated in the *giving before/after attributions* manipulation.

Finally, participants were debriefed about the purpose of the study. Participants were informed that even if they had given money, they got to keep the money anyway.

Results

All Cronbach Alphas were calculated using SPSS 27. All other statistical tests were conducted in Microsoft Excel.

There were no missing values because Qualtrics allows "forced response." Outliers defined by the 1.5 times inter-quartile range rule are wrong about 50% of the time, so I used the 2.2* IQR range rule (Hoaglin & Iglewicz, 1987). However, this rule works best when data is normal. As we will see momentarily, the data was not normal. I could not find any papers on assessing outliers with non-normal data, so I chose to use the 2.2*IQR rule.

While it is often taught that a sample size above thirty is sufficient to assume normality, I found a recent paper which suggests that the assumption of normality relies on several factors beyond sample size (Pennsylvania State University, n.d.; Piovesana & Senior, 2018). Using a formula provided by Piovesana & Senior (2018), I found that to assume normality, I would need

cell sizes above 70, which I did not have. One method I found that might have been robust to violations of the assumption of normality required trimming the means by 20% (Wilcox, 2017). I could not use this method because my data was collected on 7-point Likert scales, so trimming the ends would essentially reduce my scale to a four-point scale which would then be difficult to consider as a "scale" variable. For this reason, I suggest that future research into this area use broader scales for measurement. Even with this weakness, ANOVA is generally robust to violated assumptions of normality (Maxwell & Delaney, 1990).

I assessed homogeneity of variance using Levene's test (Field, 2005). Many of the distributions in my data did not have homogeneous variance. While ANOVA is robust to violations of homogeneity of variance, it is not robust to data which both violate homogeneity of variance and have unequal sample sizes (Maxwell & Delaney, 1990). Therefore, I used 2 by 2 ANOVA methods that were robust to violations of normality, homogeneity of variance, and orthogonality using methods for non-orthogonal ANOVAs found in Maxwell, & Delaney (1990).

Each follow up ANOVA asked an individual question, and therefore family error rate did not need to be controlled (Rubin, 2021). Simple effects analyses were calculated using Tukey's WSD modified for non-orthogonal contrasts where homogeneity of variance is not assumed (Maxwell & Delaney, 1990). Alpha level was controlled for by using methods in the same book.

Empathy manipulation check

I checked the effectiveness of the empathy manipulation by assessing participants' self-reports of their empathetic emotions toward the other "person." Participant responses to the six empathy adjectives were summed to form an index of self-reported empathy (Cronbach's alpha = .94). Consistent with expectations, a non-orthogonal 2 (empathy: present/absent) by 2 (giving: before/after attributions) ANOVA showed that scores on the empathy index were significantly higher in the empathy (M = 5.94) condition than the non-empathy (M = 5.01) condition ($F(1,224) = 7.472$, $p = .007$, $n^2 = .03$). The *giving before attributions* condition (M = 5.53) did not have significantly different empathy scores than the *giving after attributions* condition (M = 5.35)

(F(1,224) = 2.374, p = .125, n^2 = .01). The interaction between empathy and the *giving before/after attributions* (F(1,224) = 2.924, p = .089, n^2 = .01) had a nearly significant effect on participant empathy scores.

Empathy and Giving Before/After Attributions' Effect on Generosity

To see if empathy and *giving before attributions* increased participant generosity, a non-orthogonal 2 (empathy: present/absent) by 2 (giving: before/after attributions) ANOVA was performed. Contrary to expectations, empathy (M = $1.41) did not affect the amount participants gave to the other "person" compared to the no empathy condition (M = $1.40) (F (1,224) = .446, p = .505, n^2 < .01). *Giving before attributions* (M = $1.45) did not affect the amount participants gave to the other "person" compared to *giving after attributions* (M = $1.35) (F (1,224) = 2.037, p = .155, n^2 < .01). And there was not a significant interaction between empathy and *giving before/after attributions* (F (1,224) = 1.832, p = .177, n^2 < .01).

Table 2

Means and Standard Deviations for Amount of Money Given

	No empathy			empathy		
	N	Mean	SD	N	Mean	SD
GBA	73	$1.48	1.18	46	$1.41	1.17
GAA	51	$1.29	1.08	62	$1.40	1.19

Note. GBA refers to the *giving before attributions* condition. GAA refers to the *giving after attributions* condition.

While there was no significant interaction effect, the pattern is similar to a divergent interaction (Crano & Brewer, 2014). Because of the theoretical importance of any interaction that empathy and *giving before/after attributions* may have on generosity, I calculated the residuals and present them in Appendix A (Rosnow & Rosenthal, 1989). The pattern of residuals resembles the nearly significant interaction effects we find later in this study.

Attributions of Goodness, Praiseworthiness, and Blameworthiness

Three non-orthogonal 2 (giving: before/after attributions) by 2 (empathy: present/absent) ANOVAs were performed to investigate the effect of empathy and *giving before/after attributions* on aggregate measures of goodness, praiseworthiness, and blameworthiness. A table of results can be found in Appendix A.

Goodness: Attributions of goodness were significantly higher in the *giving before attributions* condition (M = 5.17) than the *giving after attributions* condition (M = 4.88) ($F(1,228) = 6.204$, $p = .013$, $n^2 = .03$). Empathy (M = 5.13) significantly increased attributions of goodness compared to the no empathy condition (M = 4.94) ($F(1,228) = 4.766$, $p = .031$, $n^2 = .02$. There was a marginally significant interaction effect between empathy and *giving before/after attributions* on attributions of goodness ($F(1,228) = 2.745$, $p = .099$, $n^2 = .01$).

Praiseworthiness: Attributions of praiseworthiness were significantly higher in the *giving before attributions* condition (M = 5.10) than the *giving after attributions condition* (M = 4.73) ($F(1,228) = 6.008$, $p = .015$, $n^2 = .03$). Empathy (M = 4.95) and no empathy (M = 4.90) did not have significantly different effects on attributions of praiseworthiness ($F(1,228) = 1.840$, $p = .176$, $n^2 = .01$. There was also no significant interaction effect between empathy and *giving before/after attributions* on attributions of praiseworthiness ($F(1,228) = 1.936$, $p = .165$, $n^2 = .01$).

Blameworthiness: Attributions of blameworthiness were not significantly different in the *giving before attributions* condition (M = 3.10) than the *giving after attributions* condition (M = 2.95) ($F(1,228) = 1.221$, $p = .270$, $n^2 = .01$). Empathy (M = 2.98) and no empathy (M = 3.07) did not have significantly different effects on attributions of blameworthiness ($F(1,228) = .732$, $p = .393$, $n^2 < .01$. There was no significant interaction effect between empathy and *giving before/after attributions* on blameworthiness ($F(1,228) = 2.725$, $p = .100$, $n^2 = .01$).

Giving before attributions (acting generously) caused the participant to see the other person as more good and more praiseworthy. Empathy also caused participants to see the other person as more good. There was a marginally significant interaction effect for attributions

of goodness (residuals can be found in Appendix A). The pattern of this interaction mirrors the pattern of giving suggesting that not only did the act of giving affect attributions, but the amount of money given affected attributions of goodness as well.

Simple Effects Analyses

Table 3 shows the means and standard deviations each cell and the results of the simple effects analyses.

Table 3

Means and Standard Deviations for Major Constructs

		No empathy			empathy		
		N	Mean	SD	N	Mean	SD
Goodness							
	GBA	73	**5.13x**	1.20	46	5.23	.93
	GAA	51	**4.67y**	1.34	62	5.06	1.26
praiseworthiness							
	GBA	73	**5.10x**	1.12	46	5.09	1.06
	GAA	51	**4.60y**	1.55	51	4.84	1.51
blameworthiness							
	GBA	73	3.23	1.78	46	2.89	1.53
	GAA	51	2.84	1.70	62	3.04	1.56

Note. “GBA” refers to the *giving before attribution* condition. “GAA” refers to the *giving after attribution* condition. When there was a statistically significant difference between groups as a result of the empathy/no empathy condition, it is labeled with an “a” and “b.” When there was a statistically significant difference between groups as a result of the *giving before/after attributions* conditions, it is labeled with an “x” and a “y.” Significant differences are in bold.

Attributions of the Individual Adjectives

To investigate which of the adjectives individually impacted the above results, I performed a series of 10 non-orthogonal 2 (giving: before/after attributions) by 2 (empathy:

present/absent) ANOVAs. Here I report significant and near significant ANOVA results: *caring, generous, trustworthy, and commendable*. For a full table of ANOVA results, including those not reported in the text below, see Appendix A.

Caring: Attributions of the other person as *caring* were significantly higher when *giving before attribution*s (M = 5.34) compared to *giving after attributions* (M = 5.00) ($F(1,228) = 1.545$, $p = .020$, $n^2 = .02$). Participants in the empathy condition (M = 5.46) had significantly higher attributions of the other person as *caring* than those in the no empathy condition (M = 4.92) ($F(1,228) = 7.934$, $p = .005$, $n^2 = .03$). There was no significant interaction effect between empathy and *giving before/after attributions* on attributions of the other person as *caring* ($F(1,228) = 2.663$, $p = .104$, $n^2 = .01$).

Generous: Attributions of the other person as *generous* were significantly higher when *giving before attributions* (M = 4.91) compared to *giving after attributions* (M = 4.56) ($F(1,228) = 4.397$, $p = .037$, $n^2 = .02$). Participants in the empathy condition (M = 4.76) did not have significantly different attributions of the other person as *generous* than those in the no empathy condition (M = 4.56) ($F(1,228) = 1.210$, $p = .272$, $n^2 < .01$). There was no significant interaction effect between empathy and *giving before/after attributions* on attributions of the other person as *generous* ($F(1,228) = .169$, $p = .681$, $n^2 < .01$).

Trustworthy: Attributions of the other person as *trustworthy* were significantly higher when *giving before attributions* (M = 5.13) compared to *giving after attributions* (M = 4.82) ($F(1,228) = 4.729$, $p = .031$, $n^2 = .02$). Participants in the empathy condition (M = 5.06) had significantly higher attributions of the other person as *trustworthy* than those in the no empathy condition (M = 4.91) ($F(1,228) = 2.947$, $p = .013$, $n^2 = .01$). There was a nearly significant interaction effect between empathy and *giving before/after attributions* on attributions of the other person as *trustworthy* ($F(1,228) = 3.364$, $p = .068$, $n^2 = .01$).

Commendable: Attributions of the other person as *commendable* were significantly higher when *giving before attributions* (M = 5.32) compared to *giving after attributions* (M = 4.79)

($F(1,228) = 6.684$, $p = .010$, $n^2 = .03$). Participants in the empathy condition ($M = 5.09$) did not have significantly different attributions of the other person as *commendable* than those in the no empathy condition ($M = 5.03$) ($F(1,228) = 1.803$, $p = .181$, $n^2 = .01$). There was a no significant interaction effect between empathy and *giving before/after attributions* on attributions of the other person as *commendable* ($F(1,228) = .449$, $p = .504$, $n^2 < .01$).

Discussion

The main finding of study one is that giving to the other person during the dictator game improved participant attributions of the other person. Specifically, when the participant gave to the other person before filling out the attribution measures, attributions of goodness and praiseworthiness were higher than when participants gave after filling out the attribution measures.

Not only did *the act of giving* affect participant attributions, but *the amount of money* the participant gave also affected attributions. Specifically, the pattern of how much participants gave was similar to the patterns of the interaction effects of attributions. In other words, our own prosocial actions (giving) enhance how we view others.

Feeling empathy for the other person also improved participant attributions of the other person as good suggesting that prosocial thoughts also improve how we see others.

Together these findings suggest that being prosocial, both in thought and deed improved participant attributions of the other person, even though all participants had the same information about the other person.

Some of the findings in this study were only marginally significant. To see if these effects might be significant with more power, I designed study 2 to address two potential sources of variability in this study. Namely, the heterogeneous sample, and the unit of generosity. While money is important in our society, $3 is not that much. So, another unit of generosity may be more valuable, increasing the strength of the effect.

Study 2

While study 1 demonstrated that being prosocial affected attributions, some of the effects were only marginally significant. I conducted a second study not only to see if results would replicate, but I also hoped to increase the power to detect effects that were marginally significant in the last study. I, therefore, used a more homogeneous sample of college students and a unit of generosity that I hoped would be more meaningful to participants.

Methods

All materials for Study 2 can be found in Appendix D.

Manipulations, Measures and Procedure

Manipulations, Measures and Procedure were the same as in study 1 except for the unit of generosity. In study 2, rather than giving participants $3, participants were given 1.5 SONA credits which they then had the opportunity to give to the other "participant" in increments of .5 credits. Students in several different undergraduate psychology courses can participate in studies through SONA. Students in Psychology 101 are required to get 3 or 4 SONA credits to pass the class (depending on the course). Students in other courses are offered SONA credits for extra credit. In both cases, 1.5 SONA credits is a valuable sum. When participants entered the *giving before/after attributions* condition, the wording was changed to reflect this difference. Specifics can be found in Appendix D.

Participants

Participants in study 2 were 228 students at a large southwestern university. There were 182 female, 41 male, and 5 non-binary participants. 165 identified as white, 8 identified as black, 16 identified as Asian, 12 identified as American Indian or Pacific Islander, 65 identified as Latino/Latina, and 1 identified as Alaskan Native (some participants identified as two races). Participants accessed the study through the SONA website, from a device of their choice. In the waiver, they were informed that they were participating in a study about attributions. Participants

received 2 SONA credits toward class participation grades in undergraduate psychology courses for participating (participants were originally told that they would receive the usual .5 credits for participating in the study, and the other 1.5 SONA credits were part of the *giving before/after attributions* condition).

Results

All assumptions and statistics were calculated and processed using the same methods in study 1.

Empathy Manipulation Check

A non-orthogonal 2 (empathy: present/absent) by 2 (giving: before/after attributions) ANOVA showed that scores on the empathy index (Cronbach's alpha = .95) were higher in the empathy condition (M = 6.33) than the no-empathy condition (M = 3.85) ($F(1,224) = 23.95$, $p < .001$, $n^2 = .07$). Scores on the empathy index were not significantly different when *giving before attributions* (M = 5.09) compared to *giving after attributions* (M = 5.06) ($F(1,224) = 1.745$, $p = .188$, $n^2 < .01$) and the interaction between empathy and *giving before/after attributions* ($F(1,228) = 1.014$, $p = .315$, $n^2 < .01$) had no significant effect on empathy scores.

Empathy and Giving Before/After Attributions' Effect on Generosity

To see if empathy and *giving before/after attributions* increased participant generosity, a non-orthogonal 2 (giving: before/after attributions) by 2 (empathy: present/absent) ANOVA was performed. *Giving before attributions* (M = .71 credits) compared to *giving after attributions* (M = .81 credits) did affect the amount participants gave to the other "person" ($F(1,224) = 7.810$, $p = .006$, $n^2 = -.03$). The empathy condition (M = .77 credits) compared to the no empathy condition (M = .75 credits) did not affect the amount participants gave to the other "person" ($F(1,224) = .937$, $p = .334$, $n^2 < .01$). And, there was a significant interaction between empathy and *giving before/after attributions* ($F(1,224) = 8.407$, $p = .004$, $n^2 = .04$).

Table 4

Means and Standard Deviations for Amount of SONA Credits Given

	No empathy			empathy		
	N	Mean	SD	N	Mean	SD
GBA	61	.67	.45	53	.77	.50
GAA	54	.85	.68	60	.77	.64

Note. GBA stands for *giving before attributions* and GAA stands for *giving after attributions*

The pattern of means here, like the first study, resemble a divergent interaction (Crano & Brewer, 2014). However, the pattern is slightly different. The cell with lowest mean in this study (empathy/giving before attributions) had the highest mean in the first study, and the cell with the highest mean in this study (no empathy/giving after attributions) had the lowest mean in the first study. Therefore, the residual patterns for generosity in each study are opposite. Residuals can be found in Appendix B.

Attributions of Goodness, Praiseworthiness and Blameworthiness

Three non-orthogonal 2 (giving: before/after attributions) by 2 (empathy: present/absent) ANOVAs were performed to investigate the effect of *giving before/after attributions* and empathy on measures of goodness, praiseworthiness, and blameworthiness. A table of results can be found in Appendix B.

Goodness: Attributions of goodness were not significantly different when *giving before attributions* (M = 5.24) compared to *giving after attributions* (M = 5.25) ($F(1,223) = 1.063$, $p = .304$, $n^2 < .01$). Empathy (M = 5.57) significantly increased attributions of goodness compared to the no empathy condition (M = 4.93) ($F(1,223) = 21.42$, $p < .001$, $n^2 = .08$. There was a non-significant interaction effect between empathy and *giving before/after attributions* on attributions of goodness ($F(1,223) = 2.914$, $p = .089$, $n^2 = .01$).

Praiseworthiness: Attributions of praiseworthiness were significantly higher when *giving before attributions* (M = 5.08) compared to *giving after attributions* (M = 4.87) ($F(1,223) = 6.769$, $p = .010$, $n^2 = .03$). Empathy (M = 5.16) significantly increased attributions of praiseworthiness compared to the no empathy condition (M = 4.79) ($F(1,223) = 10.764$, $p = .001$, $n^2 = .05$. There was also a significant interaction effect between empathy and *giving before/after attributions* on attributions of praiseworthiness ($F(1,223) = 3.910$, $p = .049$, $n^2 = .02$).

Blameworthiness: Attributions of blameworthiness were not significantly different when *giving before attributions* (M = 2.30) compared to *giving after attributions* (M = 2.28) ($F(1,223) = .678$, $p = .411$, $n^2 < .01$). Empathy (M = 1.98) did significantly decrease attributions of blameworthiness compared to the no empathy condition (M = 2.60) ($F(1,223) = 14.811$, $p < .001$, $n^2 = .06$. There was a non-significant interaction effect between empathy and *giving before/after attributions* on attributions of blameworthiness ($F(1,223) = 2.816$, $p = .095$, $n^2 = .01$).

These results show that *giving before attributions* caused the participant to see the other person as more praiseworthy than those who *gave after attributions*. Empathy caused participants to see the other person as more good, more praiseworthy and less blameworthy. There were significant and marginally significant interaction effects for all constructs (residuals can be found in Appendix B). The pattern of these interactions mirrors the pattern of giving suggesting that the amount of SONA credits given affected attributions.

Simple Effects Analysis

Table 2 shows the results of the simple effects analyses, means, and standard deviations for the effects between groups.

Table 5

Means and Standard Deviations for Major Constructs

		No empathy			empathy		
		N	Mean	SD	N	Mean	SD
Goodness							
	GBA	61	**4.90a**	.89	53	**5.64b**	.95
	GAA	53	**4.95a**	.95	60	**5.52b**	.91
praiseworthiness							
	GBA	61	**4.84a**	.91	53	**5.36bx**	.98
	GAA	54	4.74	1.00	60	**4.98y**	1.11
blameworthiness							
	GBA	61	**2.64a**	1.19	52	**1.90b**	.83
	GAA	54	**2.55a**	1.31	60	**2.04b**	.95

Note. "GBA" refers to the *giving before attribution* condition. "GAA" refers to the *giving after attribution* condition. When there was a statistically significant difference between groups as a result of the empathy/no empathy condition, it is labeled with an "a" and "b." When there was a statistically significant difference between groups as a result of the *giving before/after attributions* conditions, it is labeled with an "x" and a "y." Significant differences are in bold.

ANOVAs of Individual Adjectives

To investigate which of the adjectives individually impacted the above results, I performed a series of 10 non-orthogonal 2 (giving: before/after attributions) by 2 (empathy: present/absent) ANOVAs.

Caring: Attributions of the other person as *caring* were nearly significantly different when *giving before attributions* (M = 5.64) compared to *giving after attributions* (M = 5.55) ($F(1,211) = 3.30$, $p = .070$, $n^2 = .01$). Participants in the empathy condition (M = 6.26) saw the other person as significantly more *caring* compared to those in the no empathy condition (M = 4.93) ($F(1,211) = 45.152$, $p < .001$, $n^2 = .19$). There was no significant interaction between empathy and *giving*

before/after attributions on attributions of the other person as *caring* ($F(1,211) = .526$, $p = .469$, $n^2 < .01$).

Generous: Attributions of the other person as *generous* were not significantly different when *giving before attributions* (M = 4.97) compared to *giving after attributions* (M = 4.94) ($F(1,224) = .636$, $p = .426$, $n^2 = .01$). Participants in the empathy condition (M = 5.19) saw the other person as significantly more *generous* compared to those in the no empathy condition (M = 4.73) ($F(1,224) = 10.321$, $p = .002$, $n^2 = .04$). There was no significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *generous* ($F(1,224) = .287$, $p = .593$, $n^2 < .01$).

Trustworthy: Attributions of the other person as *trustworthy* were not significantly different when *giving before attributions* (M = 5.09) compared to *giving after attributions* (M = 4.99) ($F(1,224) = 2.071$, $p = .151$, $n^2 = .01$). Participants in the empathy condition (M = 5.28) saw the other person as significantly more *trustworthy* compared to those in the no empathy condition (M = 4.81) ($F(1,224) = 9.543$, $p = .002$, $n^2 = .04$). There was a significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *trustworthy* ($F(1,224) = 4.467$, $p = .036$, $n^2 = .02$).

Kind: Attributions of the other person as *kind* were not significantly different when *giving before attributions* (M = 5.56) compared to *giving after attributions* (M = 5.13) ($F(1,224) = 2.381$, $p = .124$, $n^2 = .01$). Participants in the empathy condition (M = 5.88) saw the other person as significantly more *kind* compared to those in the no empathy condition (M = 5.13) ($F(1,224) = 17.961$, $p < .001$, $n^2 = .07$). There was no significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *kind* ($F(1,224) = 2.344$, $p = .127$, $n^2 = .01$).

Praiseworthy: Attributions of the other person as *praiseworthy* were not significantly different when *giving before attributions* (M = 4.94) compared to the *giving after attributions* (M = 4.90) ($F(1,224) = .856$, $p = .356$, $n^2 < .01$). Participants in the empathy condition (M = 5.11) saw

the other person as significantly more *praiseworthy* compared to those in the no empathy condition (M = 4.72) ($F(1,224) = 7.780$, $p = .005$, $n^2 = .03$). There was a nearly significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *praiseworthy* ($F(1,224) = 2.979$, $p = .086$, $n^2 = .01$).

Commendable: Attributions of the other person as *commendable* were nearly significantly different when *giving before attributions* (M = 5.07) compared to *giving after attributions* (M = 4.94) ($F(1,224) = 2.944$, $p = .088$, $n^2 = .01$). Participants in the empathy condition (M = 5.18) saw the other person as significantly more *commendable* compared to those in the no empathy condition (M = 4.83) ($F(1,224) = 7.566$, $p = .006$, $n^2 = .03$). There was a nearly significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *commendable* ($F(1,224) = 2.132$, $p = .146$, $n^2 = .01$).

Deserving: Attributions of the other person as *deserving* were significantly different when *giving before attributions* (M = 5.29) compared to *giving after attributions* (M = 4.75) ($F(1,224) = 5.306$, $p = .022$, $n^2 = .02$). Participants in the empathy condition (M = 5.23) saw the other person as significantly more *deserving* compared to those in the no empathy condition (M = 4.81) ($F(1,224) = 4.006$, $p = .047$, $n^2 = .02$). There was no significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *deserving* ($F(1,224) = 1.695$, $p = .194$, $n^2 = .01$).

Blameworthy: Attributions of the other person as *blameworthy* were not significantly different when *giving before attributions* (M = 2.12) compared to *giving after attributions* (M = 2.12) ($F(1,224) = .014$, $p = .905$, $n^2 < .01$). Participants in the empathy condition (M = 1.69) saw the other person as significantly more *blameworthy* compared to those in the no empathy condition (M = 2.54) ($F(1,224) = 18.197$, $p < .001$, $n^2 = .07$). There was no significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *blameworthy* ($F(1,224) = .071$, $p = .791$, $n^2 < .01$).

Guilty: Attributions of the other person as *guilty* were not significantly different when *giving before attributions* (M = 2.52) compared to *giving after attributions* (M = 2.62) ($F(1,224) = 1.491$, $p = .223$, $n^2 < .01$). Participants in the empathy condition (M = 2.48) and those in the no empathy condition (M = 2.65) did not have any significant differences in their attributions of the other as *guilty* ($F(1,224) = 2.536$, $p = .113$, $n^2 = .01$). There was a significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *guilty* ($F(1,224) = 4.424$, $p = .037$, $n^2 = .02$).

At fault: Attributions of the other person as *at fault* were not significantly different when *giving before attributions* (M = 2.20) compared to *giving after attributions* (M = 2.10) ($F(1,224) = 2.029$, $p = .156$, $n^2 = .01$). Participants in the empathy condition (M = 1.71) saw the other person as significantly more *at fault* compared to those in the no empathy condition (M = 2.59) ($F(1,224) = 18.596$, $p < .001$, $n^2 = .07$). There was no significant interaction between empathy and *giving before/after attributions* on attributions of the other person as *at fault* ($F(1,224) = .609$, $p = .436$, $n^2 < .01$).

Summary: Giving before attributions significantly improved attributions of *deserving* and had a marginally significant effect on attributions of *caring* and *commendable*. Empathy had a significantly positive effect on all adjectives except for *guilty*. There was a significant interaction effect on attributions of *trustworthy* and *guilty*, and a marginally significant interaction effect on *praiseworthy*. Full tables of ANOVA results and residuals for the interaction effects can be found in Appendix B.

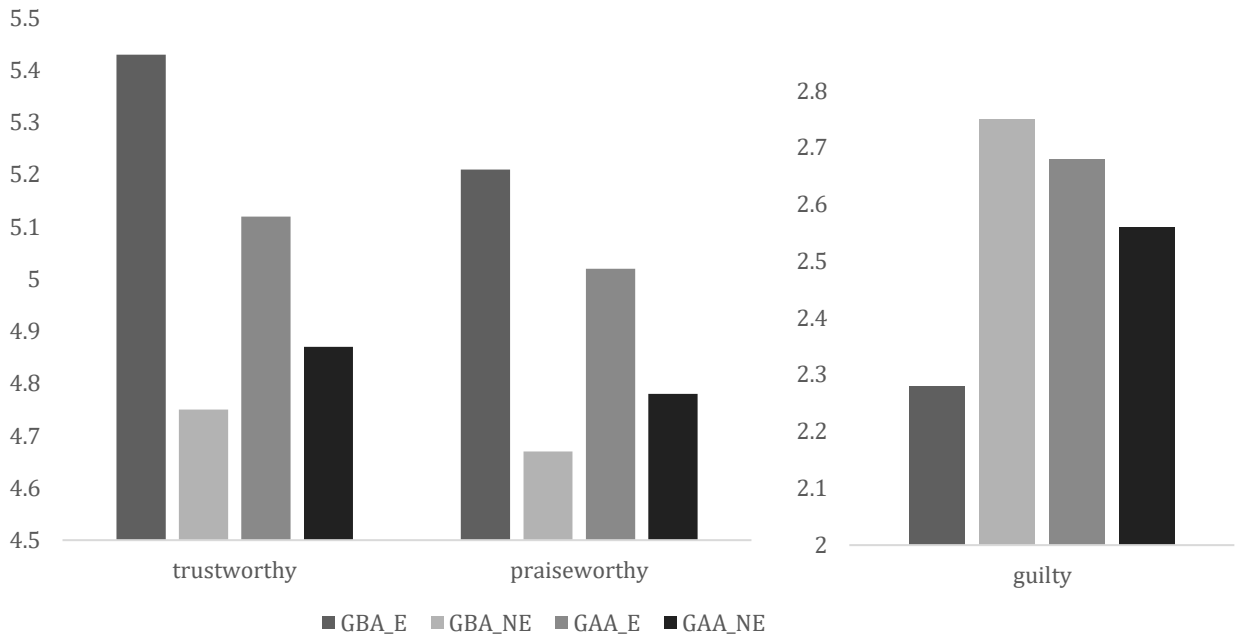
Simple Effects for Individual Adjectives

Simple effects analyses were computed as before. A full table of Means, Standard Deviations, and Simple Effects can be found in Appendix B. Here I present only those adjectives that displayed significant or nearly significant interaction effects: *trustworthy, praiseworthy,* and *guilty*. The important pattern here is that when participants *gave before attributions* (the two left columns for each trait), there was a greater difference in means than when participants *gave*

after attributions (the two right columns for each trait). The residuals for these interactions resemble those of the patterns for amount of SONA credits given. This suggests that giving and the number of SONA credits participants gave affected their attributions of the other person for these adjectives.

Figure 2

Means Charts Displaying the Interactions for Trustworthy, Praiseworthy and Guilty



Note. GBA stands for *giving before attributions*. GAA stands for *giving after attributions*. E stands for empathy. NE stands for no empathy. The scales were altered to make the significant and nearly significant differences easily visible.

These same three adjectives showed marginally significant interaction effects in study 1. The residual patterns for which also followed the amount of money given in that study, suggesting that the amount given affected attributions of these adjectives in both studies.

Discussion

Study 2 demonstrated that giving to another person improves attributions of that person. Specifically, when participants gave, that caused them to see the other person as more praiseworthy. Additionally, *giving before/after attributions* interacted with empathy to affect

attributions of goodness, praiseworthiness, and blameworthiness. These interactions mirrored the patterns of giving in this study suggesting that the amount of SONA credits participants gave affected their attributions of the other person. Empathy also had a strong effect on attributions causing participants to see the other as more positive and less negative across constructs.

Follow up analyses of the individual adjectives that had either a main effect or interaction effect with *giving before/after attributions* showed that when participants *gave before attributions*, those who were in the empathy condition (and thus gave more) had significantly more positive attributions of the other person compared to those in the no empathy condition. This significant difference in attributions was not present when participants *gave after attributions*. Demonstrating, again, that giving improved attributions of the other person. Empathy also improved attributions of the other person in all but one of the individual adjectives.

These follow up tests support the overall hypothesis of this paper, that being prosocial (either by being generous or empathetic) increases prosocial attributions and decreases antisocial attributions of the person toward whom we are prosocial.

General Discussion

The two studies described in this thesis found that the way we see others depends upon the way we treat them. Both giving and empathy caused participants to have more positive attributions of the other person. In study 1 giving improved attributions of goodness and praiseworthiness, while empathy improved attributions of goodness. In study 2 giving improved attributions of praiseworthiness, while empathy improved attributions of goodness and praiseworthiness and decreased attributions of blameworthiness. Also, *giving before/after attributions* and empathy interacted to affect the amount that participants gave, which in turn affected attributions. The only effects that were statistically significant across both studies were that giving improved attributions of praiseworthiness, and empathy improved attributions of goodness, suggesting that these effects were the most robust across samples and

manipulations. Regardless, the main hypotheses, that being prosocial improves attributions of others, were confirmed.

Follow-up investigations of the effects of giving and empathy on the individual adjectives that participants attributed to the other person showed effects that carried across both studies. Giving improved attributions of *caring*, *deserving*, and *commendable*. Empathy improved attributions of *caring* and *trustworthy.* The interaction between *giving before/after attributions* and empathy affected the amount that participants gave, which in turn affected attributions of *trustworthy, praiseworthy,* and *guilty.* These patterns show that while giving and empathy had positive effects on attributions, not all adjectives were subject to the same effects. This is important because it suggests that different prosocial behaviors and thoughts do not create a simple halo effect, but rather uniquely affect attributions.

There were some differences in the findings between study 1 and 2. These differences may have been the result of different samples, or different units of generosity (money vs. SONA credits). These differences provide further evidence that prosocial thoughts and behavior have specific effects as opposed to improving global evaluative judgements.

Theoretical Explanations

Three different theoretical perspectives may have played a role in the various patterns displayed in these studies. Firstly, false consensus effect and similarity bias predict that the participant would project personal characteristics onto the other person (Mullen et al., 1985; Srivastava et al., 2010). In this case, these theoretical perspectives correctly predicted that giving would cause participants to see the other person as more *commendable* and *deserving* while empathy would cause participants to see the other person as more *caring*. And participants who gave more saw the other as more *trustworthy* and less *guilty*. One might expect that false consensus effect and similarity bias would predict that those who gave more would see the other person as *generous*, but it may be the case that “generous” wasn’t as relevant a construct as “trustworthy” in this case. The *giving before/after attributions* condition

was designed in a way that likely caused participants to see their giving more as an act of fairness required by the social situation rather than as a free choice.

Second, self-perception theory suggests that we learn about our attitudes by observing our behavior (Bem, 1972). It is reasonable to assume that we are generous towards people who deserve our generosity, so *commendable* and *deserving* are suitable adjectives to describe someone towards whom we were generous. Similarly, it is reasonable to assume that we would be more generous towards people that we consider *trustworthy, praiseworthy,* and not *guilty*, and more empathetic towards people who are *caring* and *trustworthy.*

One way to test if these effects are the result of self-perception theory or similarity bias would be to do a similar experiment but add a second fake person for the participant to form attributions about. If the attributions formed during the experimental manipulations (while interacting with the first person) carry over to the interaction with the second person, then it is more likely that these effects are caused by similarity bias than by self-perception theory.

The third theoretical framework, self-serving motivational bias, is only meant to explain the effect of empathy, but only applies to study 2 (SONA credits). Here, the positive effect empathy had on attributions may have occurred because empathy increases self-other identification. This would theoretically lead to more positive and fewer negative dispositional attributions (Grubb, & Harrower, 2009; Gilbert & Malone, 1995). However, these findings are not present in study 1 (money), and so this framework is not a reliable explanation for the data. Similarity bias and Self-perception theory do the best jobs of describing the data. Future research should focus on those two perspectives.

Implications

The results of these studies have implications for our daily activities and interactions. These studies directly address some common occurrences in our modern society. We often see ads on social media where we can give money to people we barely know. We see ads to donate to red cross, and our friends post GoFundMe's to raise money for their 70-year-old co-worker

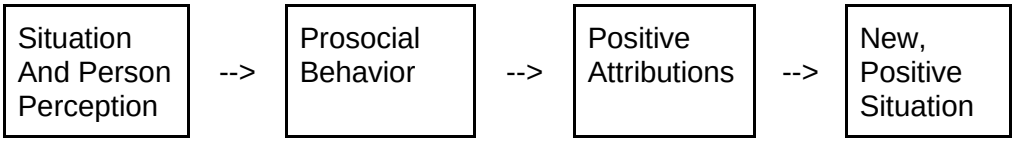
with no kids who needs a new car. These studies show that giving money in these cases would improve donator's attributions of the people they donated to.

In person, we often have the opportunity to give money to homeless people, to open the door for strangers, to make the morning coffee or tea for our partner. These studies suggest that each one of these moments gives us the opportunity to improve our attitudes towards others. How many opportunities a day are we passing up that could make the world a brighter place for us to live in? If being the change we want to see in the world actually causes us to change our own perspective, then we should take every chance we get.

These studies also have important implications for long-term social interactions. As you can see below in figure 3, if the participant were to continue interacting with that same person, the process of acting prosocially would cause the participant to enter the next moment of their interaction with fresh eyes.

Figure 3

The Flow of the Attributional Process



This new perspective is likely to have several important effects. If the participant acted prosocially, they would interpret the next situation positively, perceive the other person's facial features more positively, and their attributions would cause the other person to actually act more prosocially (Inzlicht et al., 2008; Jacobson et al., 1985; Rosenthal, 1994). On the other hand, if the participant acted anti-socially, they would be more likely to interpret the next situation negatively, perceive the other person's facial features more negatively, and their attributions would be likely to cause the other person to act more antisocially (Amin et al., 1998; Inzlicht et al., 2008; Miers et al., 2008; Rosenthal, 1994). Acting prosocially, then, has the potential to lead

to an upward spiral of prosocial behavior on multiple levels of analysis, whereas antisocial behavior has the potential to have the opposite effect.

Limitations and Directions for Future Research

In these studies, I used the same empathy manipulation as Batson & Ahmad (2001). While this empathy manipulation is effective, future studies should use multiple different empathy manipulations. Future research should also attempt to examine these effects using within-participant designs. It will be important to know just how much a person's attributions improve with a single prosocial act. While there were many different statistical tests, they were all addressing different questions. So, family-wise error was not a concern (Rubin, 2021). Even so, these findings should be replicated by future research.

These studies may inform research on perceiver effects (Srivastava et al., 2010; Wood et al., 2010). Perceiver effects are aspects of the perceiver that affect the way they see others. Much of this research has focused on the way stable personality traits of perceivers affect the way they see others. An inherent question in that field, which has until now remained unasked and unanswered, is "if people project personality traits onto others, how many times does a person have to exhibit a personality trait before they begin projecting it onto others?" These studies suggest that the answer to that question is, astoundingly, "once." This is an important point because it suggests that a person who currently sees others negatively (and let's be honest, don't we all see at least some people negatively?) may be able to improve those attributions by behaving prosocially.

Conclusion

These studies demonstrate that the way we see others depends on how we treat them. A single prosocial act and thought causes us to attribute more prosocial and fewer anti-social qualities to others. We really should be the change we want to see in the world.

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Appendix A

ANOVA results for Major Constructs

Goodness		df	f	p	n^2
	empathy	**228**	**4.766**	**.031**	**.02**
	Opportunity to give		**6.204**	**.013**	**.03**
	interaction		2.745	.099	.01
praiseworthiness					
	empathy	228	1.840	.176	.01
	Opportunity to give		**6.008**	**.015**	**.03**
	interaction		1.936	.165	.01
blameworthiness					
	empathy	228	.732	.393	.00
	Opportunity to give		1.221	.270	.01
	interaction		2.725	.100	.01

ANOVA results for Individual Adjectives

Effect	Construct	Adjective	df	f	p	n^2
Empathy						
	goodness					
		caring	**228**	**7.934**	**.005**	**.03**
		generous	228	1.210	.272	.01
		trustworthy	228	2.947	.087	.01
		kind	228	.872	.351	.00
	praiseworthy					
		praiseworthy	228	2.056	.153	.01
		commendable	228	1.803	.181	.01
		deserving	228	.075	.784	.00
	blameworthy					
		blameworthy	228	.631	.428	.00
		guilty	228	.615	.434	.00
		At fault	228	1.757	.186	.01
Opp. Give						
	goodness					
		caring	**228**	**5.447**	**.020**	**.02**
		generous	**228**	**4.397**	**.037**	**.02**
		trustworthy	**228**	**4.729**	**.031**	**.02**
		kind	228	2.321	.129	.01
	praiseworthy					
		praiseworthy	228	2.618	.107	.01
		commendable	**228**	**6.684**	**.01**	**.03**
		deserving	228	3.568	.060	.02
	blameworthy					
		blameworthy	228	1.994	.159	.01

		guilty	228	1.419	.235	.00
		At fault	228	2.446	.119	.01
Interaction						
	goodness					
		caring	228	2.663	.104	.01
		generous	228	.169	.681	.00
		trustworthy	228	3.364	.068	.01
		kind	228	2.049	.154	.01
	praiseworthy					
		praiseworthy	228	3.228	.074	.01
		commendable	228	.449	.504	.00
		deserving	228	1.139	.287	.00
	blameworthy					
		blameworthy	228	2.377	.125	.01
		guilty	228	3.580	.060	.02
		At fault	228	.606	.437	.00

Note. The table is organized first by the effect being tested and second by the construct to which the adjective is associated. Significant differences are in bold.

Means, Standard Deviations, and Simple Effects for Individual Adjectives

		No empathy			empathy		
		N	Mean	SD	N	Mean	SD
caring							
	GBA	73	**5.178ax**	1.368	46	**5.587b**	1.045
	GAA	51	**4.549ay**	1.770	62	**5.371b**	1.602
generous							
	GBA	73	4.863	1.566	46	4.978	1.358
	GAA	51	4.510	1.391	62	4.597	1.713
trustworthy							
	GBA	73	**5.137x**	1.388	46	5.109	1.159
	GAA	51	**4.588y**	1.512	62	5.016	1.408
kind							
	GBA	73	5.342	1.356	46	5.261	1.237
	GAA	51	5.039	1.428	62	5.242	1.522
praiseworthy							
	GBA	73	**4.890x**	1.439	46	4.783	1.332
	GAA	51	**4.353y**	1.885	62	4.839	1.729
commendable							
	GBA	73	**5.247x**	1.402	46	**5.435x**	1.148
	GAA	51	**4.725y**	1.710	62	**4.839y**	1.757
deserving							
	GBA	73	5.164	1.444	46	5.065	1.526
	GAA	51	4.725	1.650	62	4.839	1.839
blameworthy							
	GBA	73	3.178	1.843	46	2.826	1.829
	GAA	51	2.667	1.818	62	2.871	1.760

guilty							
	GBA	73	3.151	1.905	46	**2.783x**	1.685
	GAA	51	2.882	1.915	62	**3.403y**	1.912
At fault							
	GBA	73	3.356	2.009	46	3.065	1.583
	GAA	51	2.980	1.783	62	2.839	1.926

Note. *GBA* refers to the *giving before attributions* condition. *GAA* refers to the *giving after attributions* condition. When there was a statistically significant difference between groups because of the empathy/no empathy condition, it is labeled with an “a” and “b.” When there was a statistically significant difference between groups as a result of the *giving before/after attributions* conditions, it is labeled with an “x” and a “y.” Statistically significant differences are in bold.

Residuals for Amount of Money Given

	No Empathy	Empathy
I OG	.03	-.04
D OG	-.06	.05

Residuals for Attributions of Goodness

	No Empathy	Empathy
I OG	.05	-.04
D OG	-.12	.07

Residuals for Attributions of Trustworthy

	No Empathy	Empathy
I OG	.08	-.09
D OG	-.17	.12

Residuals for Attributions of Praiseworthy

	No Empathy	Empathy
I OG	.11	-.14
D OG	-.20	.14

Residuals for Attributions of Guilty

	No Empathy	Empathy
I OG	.19	-.28
D OG	-.24	.18

Appendix B

ANOVA Results for Main Constructs

Goodness		df	f	p	n^2
	empathy	**223**	**21.422**	**<.001**	**.08**
	Opportunity to give		1.063	.304	.00
	interaction		2.914	.089	.01
praiseworthiness					
	empathy		**10.764**	**.001**	**.05**
	Opportunity to give		**6.769**	**.01**	**.03**
	interaction		**3.910**	**.049**	**.02**
blameworthiness					
	empathy		**14.811**	**<.001**	**.06**
	Opportunity to give		.678	.411	.00
	interaction		2.816	.095	.01

ANOVA Results for Individual Adjectives

Effect	Construct	Adjective	df	f	p	n^2
Empathy						
	goodness					
		caring	**211**	**45.15**	**<.001**	**.19**
		generous	**224**	**10.32**	**.002**	**.04**
		trustworthy	**224**	**9.543**	**.002**	**.04**
		kind	**224**	**17.96**	**<.001**	**.07**
	praiseworthy					
		praiseworthy	**224**	**7.780**	**.006**	**.03**
		commendable	**224**	**7.566**	**.006**	**.03**
		deserving	**224**	**4.006**	**.047**	**.02**
	blameworthy					
		blameworthy	**224**	**18.197**	**<.001**	**.07**
		guilty	224	2.536	.11	.01
		At fault	**222**	**18.596**	**<.001**	**.07**
Opp. Give						
	goodness					
		caring	211	3.301	.071	.01
		generous	224	.636	.426	.00
		trustworthy	224	2.071	.151	.01
		kind	224	2.38	.124	.01
	praiseworthy					
		praiseworthy	224	.856	.356	.00
		commendable	224	2.944	.088	.01
		deserving	**224**	**5.306**	**.022**	**.02**
	blameworthy					

		blameworthy	224	.014	.905	.00
		guilty	224	1.491	.223	.01
		At fault	222	2.029	.156	.01
Interaction						
	goodness					
		caring	211	.525	.469	.00
		generous	224	.287	.593	.00
		trustworthy	**224**	**4.47**	**.036**	**.02**
		kind	224	2.344	.127	.01
	praiseworthy					
		praiseworthy	224	2.979	.086	.01
		commendable	224	2.132	.145	.01
		deserving	224	1.695	.194	.01
	blameworthy					
		blameworthy	222	.071	.791	.00
		guilty	**224**	**4.424**	**.037**	**.02**
		At fault	222	.609	.436	.00

Note. The table is organized first by the effect being tested and second by the construct to which the adjective is associated. Significant results are in bold.

Means, Standard Deviations and Simple Effects for Individual Adjectives

		No Empathy			Empathy		
		N	Mean	SD	N	Mean	SD
caring							
	GBA	61	**4.98a**	.96	46	**6.30b**	.66
	GAA	54	**4.87a**	1.15	54	**6.22b**	.63
generous							
	GBA	61	**4.74a**	.96	53	**5.21b**	1.12
	GAA	54	**4.72a**	1.19	60	**5.17b**	1.21
trustworthy							
	GBA	61	**4.75a**	1.15	53	**5.43b**	1.12
	GAA	54	4.87	1.26	60	5.12	1.16
kind							
	GBA	61	**5.13a**	.99	53	**5.98b**	1.07
	GAA	54	**5.13a**	1.19	60	**5.78b**	1.11
praiseworthy							
	GBA	61	**4.67a**	1.15	53	**5.21b**	1.12
	GAA	54	4.78	1.24	60	5.02	1.24
commendable							
	GBA	61	**4.85a**	1.01	53	**5.30b**	1.19
	GAA	54	4.81	1.23	60	5.07	1.16
deserving							
	GBA	61	**5.00a**	1.26	53	**5.58bx**	1.84
	GAA	54	4.63	1.36	60	**4.87y**	2.18
blameworthy							
	GBA	61	**2.54a**	1.25	52	**1.69b**	1.00
	GAA	54	**2.54a**	1.33	59	**1.69b**	.95

guilty							
	GBA	61	**2.75a**	1.34	53	**2.28b**	1.18
	GAA	54	2.56	1.38	60	2.68	1.59
At fault							
	GBA	61	**2.62a**	.92	52	**1.77b**	1.29
	GAA	54	**2.56a**	.85	59	**1.64b**	1.45

Note. *GBA* refers to the *giving before attributions* condition. *GAA* refers to the *giving after attributions* condition. When there was a statistically significant difference between groups because of the empathy/no empathy condition, it is labeled with an “a” and “b.” When there was a statistically significant difference between groups as a result of the *giving before/after attributions* conditions, it is labeled with an “x” and a “y.” Statistically significant differences are in bold.

Residuals for SONA Credits Given

	No Empathy	Empathy
I OG	-.06	.04
D OG	.04	-.06

Residuals for Attributions of Goodness

	No Empathy	Empathy
I OG	-.02	.07
D OG	.02	-.06

Residuals for Impressions of Praiseworthiness

	No Empathy	Empathy
I OG	-.06	.09
D OG	.05	-.07

Residuals for Impressions of Blameworthiness

	No Empathy	Empathy
I OG	.04	-.09
D OG	-.04	.08

Residuals for Impressions of Trustworthy

	No Empathy	Empathy
I OG	-.11	.11
D OG	.07	-.14

Residuals for Impressions of Praiseworthy

	No Empathy	Empathy
I OG	-.07	.07
D OG	.05	-.09

Residuals for Impressions of Guilty

	No Empathy	Empathy
I OG	.15	-.15
D OG	-.13	.16

Appendix C

Study 1

Start of Block: Consent

You are invited to participate in a research study titled Impressions, conducted by Kevin Willcox and Ann Rumble from Northern Arizona University.

The purpose of this research study is to understand how individuals form impressions of each other when interacting. If you agree to take part in this study, you will be randomly assigned to participate with another Qualtrics worker. You and your partner will share a bit about yourselves and then fill out questionnaires about your impressions of each other. The study takes approximately 15-25 minutes to complete.

Your participation in the study may help scientists learn valuable information about forming impressions.

We believe there are no known risks associated with this research study; though, as with any online-related activity, the risk of a breach of confidentiality is always possible. However, we have taken measures to minimize this risk to keep your answers confidential. Qualtrics surveys keep all of your responses anonymous. Your responses are not at all connected to your contact information.

Your participation in this study is completely voluntary and you can withdraw at any time. With full survey completion, you will be compensated from your respective panels provider.

If you have questions about this project or if you experience a research-related problem, you may contact the researcher(s), Kevin Willcox; kw992@nau.edu. If you have any questions concerning your rights as a research subject, you may contact the Northern Arizona University IRB Office at irb@nau.edu or (928) 523-9551.

By submitting this survey, I affirm that I am at least 18 years of age and agree that the information may be used in the research project described above.

- ○ YES, I wish to consent and participate in this study
- ○ NO, I do not wish to consent and participate in this study

End of Block: Consent

Start of Block: Demographics

Choose one or more races that you consider yourself to be:

- [ ] White
- [ ] Black or African American
- [ ] Asian
- [ ] American Indian or Pacific Islander
- [ ] Latino/Latina
- [ ] Other _____

What is your sex?

- ○ Male
- ○ Female
- ○ Non-Binary
- ○ Other _____

What is your year of birth?

_____

Page Break

What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree
- ○ High school graduate (high school diploma or equivalent including GED)
- ○ Some college but no degree
- ○ Associate degree in college (2-year)
- ○ Bachelor's degree in college (4-year)
- ○ Master's degree
- ○ Doctoral degree
- ○ Professional degree (JD, MD)

Information about income is very important to understand. Would you please give your best guess? Please indicate the answer that includes your entire household income in 2020 before taxes.

- ○ Less than $10,000
- ○ $10,000 to $19,999
- ○ $20,000 to $29,999
- ○ $30,000 to $39,999
- ○ $40,000 to $49,999
- ○ $50,000 to $59,999
- ○ $60,000 to $69,999
- ○ $70,000 to $79,999
- ○ $80,000 to $89,999
- ○ $90,000 to $99,999
- ○ $100,000 to $149,999
- ○ $150,000 or more

End of Block: Demographics

Start of Block: Intro

During this study you will be paired with another Qualtrics participant. When you are ready, click next and we will pair you with another participant.

Page Break

Please wait while we pair you with another participant...

Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Intro

Start of Block: Worry Entry

Please write something that you have been worrying about recently.

The other participant has been directed to do the same. After you are both finished, only one of you will be randomly selected to receive the other's writing.

Each of you have two minutes to complete the task, after which your answers will be automatically submitted.

Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Worry Entry

Start of Block: Empathy Condition

The other participant was randomly selected to be the one whose text is shared. Therefore, they will not receive your text.

Page Break

Please take a moment to read the other participant's text. When you are finished reading, press submit. On the next page, a 30 second timer will begin. Please take those 30 seconds to put yourself in the shoes of the other participant. Feel what they may be feeling. Imagine what it might be like to be them. When you are finished reading and are ready to begin taking their perspective, please press submit.

The only thing that I can seem to think of is that two days ago I broke up with my boyfriend. We've been dating since our junior year in high school and have been really close. It's been great living together during COVID. I thought he felt the same way, but I guess that things have changed. Now he wants to date other people. He says that he still cares a lot about me, but he doesn't want to be tied down to just one person. I've been kind of upset and now I have to find a new place to live. It's all I think about. My friends all tell me that I'll meet other guys and all I need is for something good to happen to cheer me up. I guess they're right, but so far that hasn't happened.

Page Break

Please take 30 seconds to put yourself in the shoes of the other participant. Feel what they may be feeling. Imagine what it might be like to be them.

The only thing that I can seem to think of is that two days ago I broke up with my boyfriend. We've been dating since our junior year in high school and have been really close. It's been great living together during COVID. I thought he felt the same way, but I guess that things have changed. Now he wants to date other people. He says that he still cares a lot about me, but he doesn't want to be tied down to just one person. I've been kind of upset and now I have to find a new place to live. It's all I think about. My friends all tell me that I'll meet other guys and all I need is for something good to happen to cheer me up. I guess they're right, but so far that hasn't happened.

Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Empathy Condition

Start of Block: No Empathy Condition

The other participant was randomly selected to be the one whose text is shared. Therefore, they will not receive your text.

Text from the other participant:

Honestly, I'm not really worried about anything right now. My life's going pretty well. I guess... I ran out of eggs today, so I'll have to go pick some up.

End of Block: No Empathy Condition

Start of Block: Immediate Opportunity to Give

Before moving on to the next portion of the study, you have been randomly selected to receive a $3 bonus. You are welcome to give all, some or none of this bonus to the other participant if you

so desire. If you choose not to, they will not know that you were given any money. Please enter a dollar amount that you would like to give to the other participant from $ 0 - 3.

- ○ $ 0
- ○ $ 1
- ○ $ 2
- ○ $ 3

Page Break

Please rate the extent to which you agree/disagree that the other participant embodies each of these qualities:

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Commendable	○	○	○	○	○	○	○
Caring	○	○	○	○	○	○	○
Praiseworthy	○	○	○	○	○	○	○
At Fault	○	○	○	○	○	○	○
Generous	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○
Guilty	○	○	○	○	○	○	○
Deserving	○	○	○	○	○	○	○
Blameworthy	○	○	○	○	○	○	○
Kind	○	○	○	○	○	○	○

End of Block: Immediate Opportunity to Give

Start of Block: Delayed Opportunity to Give

Please rate the extent to which you agree/disagree that the other participant embodies each of these qualities:

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Commendable	○	○	○	○	○	○	○
Caring	○	○	○	○	○	○	○
Praiseworthy	○	○	○	○	○	○	○
At Fault	○	○	○	○	○	○	○
Generous	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○
Guilty	○	○	○	○	○	○	○
Deserving	○	○	○	○	○	○	○
Blameworthy	○	○	○	○	○	○	○
Kind	○	○	○	○	○	○	○

Page Break

Before moving on to the next portion of the study, you have been randomly selected to receive a $3 bonus. You are welcome to give all, some or none of this bonus to the other participant if you so desire. If you choose not to, they will not know that you were given any money. Please enter a dollar amount that you would like to give to the other participant from $ 0 - 3.

- ○ $ 0
- ○ $ 1
- ○ $ 2
- ○ $ 3

End of Block: Delayed Opportunity to Give

Start of Block: Finished with other Participant

You are no longer interacting with another participant.

End of Block: Finished with other Participant

Start of Block: Empathy Manipulation Check

Please rate the extent to which you feel each of these feelings towards the other participant.

	Not at All						Very Much
Sympathetic	○	○	○	○	○	○	○
Warm	○	○	○	○	○	○	○
Compassionate	○	○	○	○	○	○	○
Soft Hearted	○	○	○	○	○	○	○
Tender	○	○	○	○	○	○	○
Moved	○	○	○	○	○	○	○

End of Block: Empathy Manipulation Check

Start of Block: Impressions of Self

Please rate the extent to which you agree/disagree that you embody each of these qualities:

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Commendable	○	○	○	○	○	○	○
Caring	○	○	○	○	○	○	○
Praiseworthy	○	○	○	○	○	○	○
At Fault	○	○	○	○	○	○	○
Generous	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○
Guilty	○	○	○	○	○	○	○
Deserving	○	○	○	○	○	○	○
Blameworthy	○	○	○	○	○	○	○
Kind	○	○	○	○	○	○	○

End of Block: Impressions of Self

Start of Block: Social Value Orientation

In this task we ask you to imagine that you have been randomly paired with another person, whom we will refer to simply as the "Other." This other person is someone you do not know and that you will not knowingly meet in the future. Both you and the "Other" person will be making choices by choosing either the first second or third choice. Choices will produce points for both yourself and the "Other" person. Likewise, the other's choice will produce points for him/her and

for you. Every point has value: The more points you receive, the better for you, and the more points the "Other" receives, the better for him/her. Here's an example of how this task works:

- ○ You Get 500; Other Gets 100
- ○ You Get 500; Other Gets 500
- ○ You Get 550; Other Gets 300

In this example, if you chose the first response, you would receive 500 points and the other would receive 100 points; if you chose the second response, you would receive 500 points and the other 500; and if you chose the third response, you would receive 550 points and the other 300. So, you see that your choice influences both the number of points you receive and the number of points the other receives. Before you begin making choices, please keep in mind that there are no right or wrong answers—choose the option that you, for whatever reason, prefer most. Also, remember that the points have value; The more of them you accumulate, the better for you. Likewise, from the "other's" point of view, the more points s/he accumulates, the better for him/her. For each of the nine choice situations, circle A, B, or C, depending on which column you prefer most:

Page Break

For each of the nine choice situations, circle A, B, or C, depending on which column you prefer most:

1

- You Get 480; Other Gets 80
- You Get 540; Other Gets 280
- You Get 480; Other Gets 480

2

- You Get 560; Other Gets 300
- You Get 500; Other Gets 500
- You Get 500; Other Gets 100

3

- You Get 520; Other Gets 520
- You Get 520; Other Gets 120
- You Get 580; Other Gets 320

Page Break

4

- ○ You Get 500; Other Gets 100
- ○ You Get 560; Other Gets 300
- ○ You Get 490; Other Gets 490

5

- ○ You Get 560; Other Gets 300
- ○ You Get 500; Other Gets 500
- ○ You Get 490; Other Gets 90

6

- ○ You Get 500; Other Gets 500
- ○ You Get 500; Other Gets 100
- ○ You Get 570; Other Gets 300

Page Break

7

- ○ You Get 510; Other Gets 510
- ○ You Get 560; Other Gets 300
- ○ You Get 510; Other Gets 110

8

- ○ You Get 550; Other Gets 300
- ○ You Get 500; Other Gets 100
- ○ You Get 500; Other Gets 500

9

- ○ You Get 480; Other Gets 100
- ○ You Get 490; Other Gets 490
- ○ You Get 540; Other Gets 300

End of Block: Social Value Orientation

Start of Block: Debrief

The study you just participated in was investigating how empathy and generous behavior affect impressions of others. There is evidence to suggest that person A's feelings for and actions towards person B affects person A's impressions of the other person. However, this is the first study to test that hypothesis directly.

Note that you did not interact with another participant nor did your decisions really impact other participants, as you were led to believe. This deception was necessary so that we might understand how you react under specific circumstances. If we simply allowed you to

interact with your fellow participants, we could not guarantee that the desired circumstances would occur, and we want to ensure the quality of the study.

Thank you for participating in this study. Because it is ongoing, we would appreciate it if you did not disclose you interacted with the computer, but you can discuss what occurred in a general manner with others. It would be damaging to our results if future participants knew what would happen.

If you have any questions, or would like to know more about the results, please feel free to contact Dr. Ann Rumble at ann.rumble@nau.edu or Kevin Willcox at kw992@nau.edu.

End of Block: Debrief

Appendix D

Study 2

Start of Block: Consent

You are invited to participate in a research study titled Impressions, conducted by Kevin Willcox and Ann Rumble from Northern Arizona University.

The purpose of this research study is to understand how individuals form impressions of each other when interacting. If you agree to take part in this study, you will be randomly assigned to participate with another student. You and your partner will share a bit about yourselves and then fill out questionnaires about your impressions of each other. The study takes approximately 15-25 minutes to complete.

Your participation in the study may help scientists learn valuable information about forming impressions.

We believe there are no known risks associated with this research study; though, as with any online-related activity, the risk of a breach of confidentiality is always possible. However, we have taken measures to minimize this risk to keep your answers confidential. Qualtrics surveys keep all of your responses anonymous. Your responses are not at all connected to your contact information.

Your participation in this study is completely voluntary and you can withdraw at any time. With full survey completion, you will receive half a SONA credit.

If you have questions about this project or if you experience a research-related problem, you may contact the researcher(s), Kevin Willcox; kw992@nau.edu. If you have any questions concerning your rights as a research subject, you may contact the Northern Arizona University IRB Office at irb@nau.edu or (928) 523-9551.

By submitting this survey, I affirm that I am at least 18 years of age and agree that the information may be used in the research project described above.

- ○ YES, I wish to consent and participate in this study
- ○ NO, I do not wish to consent and participate in this study

End of Block: Consent

Start of Block: Demographics

Choose one or more races that you consider yourself to be:

- [ ] White
- [ ] Black or African American
- [ ] Asian
- [ ] American Indian or Pacific Islander
- [ ] Latino/Latina
- [ ] Other _____

What is your sex?

- ○ Male
- ○ Female
- ○ Non-Binary
- ○ Other _____

What is your year of birth?

_____

Page Break

What is the highest level of school you have completed or the highest degree you have received?

- ○ Less than high school degree
- ○ High school graduate (high school diploma or equivalent including GED)
- ○ Some college but no degree
- ○ Associate degree in college (2-year)
- ○ Bachelor's degree in college (4-year)
- ○ Master's degree
- ○ Doctoral degree
- ○ Professional degree (JD, MD)

Information about income is very important to understand. Would you please give your best guess? Please indicate the answer that includes your entire household income in 2020 before taxes.

- ○ Less than $10,000
- ○ $10,000 to $19,999
- ○ $20,000 to $29,999
- ○ $30,000 to $39,999
- ○ $40,000 to $49,999
- ○ $50,000 to $59,999
- ○ $60,000 to $69,999
- ○ $70,000 to $79,999
- ○ $80,000 to $89,999
- ○ $90,000 to $99,999
- ○ $100,000 to $149,999
- ○ $150,000 or more

End of Block: Demographics

Start of Block: Intro

During this study you will be paired with another Qualtrics participant. When you are ready, click next and we will pair you with another participant.

Page Break

Please wait while we pair you with another participant...

Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Intro

Start of Block: Worry Entry

Please write something that you have been worrying about recently.

The other participant has been directed to do the same. After you are both finished, only one of you will be randomly selected to receive the other's writing.

Each of you have two minutes to complete the task, after which your answers will be automatically submitted.

Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Worry Entry

Start of Block: Empathy Condition

The other participant was randomly selected to be the one whose text is shared. Therefore, they will not receive your text.

Page Break

Please take a moment to read the other participant's text. When you are finished reading, press submit. On the next page, a 30 second timer will begin. Please take those 30 seconds to put yourself in the shoes of the other participant. Feel what they may be feeling. Imagine what it might be like to be them. When you are finished reading and are ready to begin taking their perspective, please press submit.

The only thing that I can seem to think of is that two days ago I broke up with my boyfriend. We've been dating since our junior year in high school and have been really close. It's been great living together during COVID. I thought he felt the same way, but I guess that things have changed. Now he wants to date other people. He says that he still cares a lot about me, but he doesn't want to be tied down to just one person. I've been kind of upset and now I have to find a new place to live. It's all I think about. My friends all tell me that I'll meet other guys and all I need is for something good to happen to cheer me up. I guess they're right, but so far that hasn't happened.

Page Break

Please take 30 seconds to put yourself in the shoes of the other participant. Feel what they may be feeling. Imagine what it might be like to be them.

The only thing that I can seem to think of is that two days ago I broke up with my boyfriend. We've been dating since our junior year in high school and have been really close. It's been great living together during COVID. I thought he felt the same way, but I guess that things have changed. Now he wants to date other people. He says that he still cares a lot about me, but he doesn't want to be tied down to just one person. I've been kind of upset and now I have to find a new place to live. It's all I think about. My friends all tell me that I'll meet other guys and all I need is for something good to happen to cheer me up. I guess they're right, but so far that hasn't happened.

Timing
First Click
Last Click
Page Submit
Click Count

End of Block: Empathy Condition

Start of Block: No Empathy Condition

The other participant was randomly selected to be the one whose text is shared. Therefore, they will not receive your text.

Text from the other participant:

Honestly, I'm not really worried about anything right now. My life's going pretty well. I guess... I ran out of eggs today, so I'll have to go pick some up.

End of Block: No Empathy Condition

Start of Block: Immediate Opportunity to Give

Before moving on to the next portion of the study, you have been randomly selected to receive an extra 1.5 SONA credits. You are welcome to give all, some or none of these credits to the other participant if you so desire. If you choose not to, they will not know that you were given

any extra credits. Please select the amount of credits that you would like to give to the other participant:

- ○ 0 Credits
- ○ .5 Credits
- ○ 1 Credit
- ○ 1.5 Credit

Page Break

Please rate the extent to which you agree/disagree that the other participant embodies each of these qualities:

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Commendable	○	○	○	○	○	○	○
Caring	○	○	○	○	○	○	○
Praiseworthy	○	○	○	○	○	○	○
At Fault	○	○	○	○	○	○	○
Generous	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○
Guilty	○	○	○	○	○	○	○
Deserving	○	○	○	○	○	○	○
Blameworthy	○	○	○	○	○	○	○
Kind	○	○	○	○	○	○	○

End of Block: Immediate Opportunity to Give

Start of Block: Delayed Opportunity to Give

Please rate the extent to which you agree/disagree that the other participant embodies each of these qualities:

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Commendable	○	○	○	○	○	○	○
Caring	○	○	○	○	○	○	○
Praiseworthy	○	○	○	○	○	○	○
At Fault	○	○	○	○	○	○	○
Generous	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○
Guilty	○	○	○	○	○	○	○
Deserving	○	○	○	○	○	○	○
Blameworthy	○	○	○	○	○	○	○
Kind	○	○	○	○	○	○	○

Page Break

Before moving on to the next portion of the study, you have been randomly selected to receive an extra 1.5 SONA credits. You are welcome to give all, some or none of these credits to the other participant if you so desire. If you choose not to, they will not know that you were given any extra credits. Please select the amount of credits that you would like to give to the other participant:

- ○ 0 Credits
- ○ .5 Credits
- ○ 1 Credit
- ○ 1.5 Credits

End of Block: Delayed Opportunity to Give

Start of Block: Finished with other Participant

You are no longer interacting with another participant.

End of Block: Finished with other Participant

Start of Block: Empathy Manipulation Check

Please rate the extent to which you feel each of these feelings towards the other participant.

	Not at All						Very Much
Sympathetic	○	○	○	○	○	○	○
Warm	○	○	○	○	○	○	○
Compassionate	○	○	○	○	○	○	○
Soft Hearted	○	○	○	○	○	○	○
Tender	○	○	○	○	○	○	○
Moved	○	○	○	○	○	○	○

End of Block: Empathy Manipulation Check

Start of Block: Impressions of Self

Please rate the extent to which you agree/disagree that you embody each of these qualities:

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Commendable	○	○	○	○	○	○	○
Caring	○	○	○	○	○	○	○
Praiseworthy	○	○	○	○	○	○	○
At Fault	○	○	○	○	○	○	○
Generous	○	○	○	○	○	○	○
Trustworthy	○	○	○	○	○	○	○
Guilty	○	○	○	○	○	○	○
Deserving	○	○	○	○	○	○	○
Blameworthy	○	○	○	○	○	○	○
Kind	○	○	○	○	○	○	○

End of Block: Impressions of Self

Start of Block: Social Value Orientation

In this task we ask you to imagine that you have been randomly paired with another person, whom we will refer to simply as the "Other." This other person is someone you do not know and that you will not knowingly meet in the future. Both you and the "Other" person will be making choices by choosing either the first second or third choice. Choices will produce points for both yourself and the "Other" person. Likewise, the other's choice will produce points for him/her and

for you. Every point has value: The more points you receive, the better for you, and the more points the "Other" receives, the better for him/her. Here's an example of how this task works:

- ○ You Get 500; Other Gets 100
- ○ You Get 500; Other Gets 500
- ○ You Get 550; Other Gets 300

In this example, if you chose the first response, you would receive 500 points and the other would receive 100 points; if you chose the second response, you would receive 500 points and the other 500; and if you chose the third response, you would receive 550 points and the other 300. So, you see that your choice influences both the number of points you receive and the number of points the other receives. Before you begin making choices, please keep in mind that there are no right or wrong answers—choose the option that you, for whatever reason, prefer most. Also, remember that the points have value; The more of them you accumulate, the better for you. Likewise, from the "other's" point of view, the more points s/he accumulates, the better for him/her. For each of the nine choice situations, circle A, B, or C, depending on which column you prefer most:

Page Break

For each of the nine choice situations, circle A, B, or C, depending on which column you prefer most:

1

- You Get 480; Other Gets 80
- You Get 540; Other Gets 280
- You Get 480; Other Gets 480

2

- You Get 560; Other Gets 300
- You Get 500; Other Gets 500
- You Get 500; Other Gets 100

3

- You Get 520; Other Gets 520
- You Get 520; Other Gets 120
- You Get 580; Other Gets 320

Page Break

4

- ○ You Get 500; Other Gets 100
- ○ You Get 560; Other Gets 300
- ○ You Get 490; Other Gets 490

5

- ○ You Get 560; Other Gets 300
- ○ You Get 500; Other Gets 500
- ○ You Get 490; Other Gets 90

6

- ○ You Get 500; Other Gets 500
- ○ You Get 500; Other Gets 100
- ○ You Get 570; Other Gets 300

Page Break

7

- ○ You Get 510; Other Gets 510
- ○ You Get 560; Other Gets 300
- ○ You Get 510; Other Gets 110

8

- ○ You Get 550; Other Gets 300
- ○ You Get 500; Other Gets 100
- ○ You Get 500; Other Gets 500

9

- ○ You Get 480; Other Gets 100
- ○ You Get 490; Other Gets 490
- ○ You Get 540; Other Gets 300

End of Block: Social Value Orientation

Start of Block: Debrief

The study you just participated in was investigating how empathy and generous behavior affect impressions of others. There is evidence to suggest that person A's feelings for and actions towards person B affects person A's impressions of the other person. However, this is the first study to test that hypothesis directly.

Note that you did not interact with another participant nor did your decisions really impact other participants, as you were led to believe. This deception was necessary so that we might understand how you react under specific circumstances. If we simply allowed you to

interact with your fellow participants, we could not guarantee that the desired circumstances would occur, and we want to ensure the quality of the study.

Thank you for participating in this study. Because it is ongoing, we would appreciate it if you did not disclose you interacted with the computer, but you can discuss what occurred in a general manner with others. It would be damaging to our results if future participants knew what would happen.
Your SONA credits will be granted over the weekend.

If you have any questions, or would like to know more about the results, please feel free to contact Kevin Willcox at kw992@nau.edu.

End of Block: Debrief