

Help! An Integrative Intervention for Fostering  
Prosocial Habits among Adolescents and Young Adults

by  
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A dissertation presented to the faculty of Claremont Graduate University in partial  
fulfillment of the requirements for the degree of Doctor of Philosophy in Psychology

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## **APPROVAL OF THE DISSERTATION COMMITTEE**

This dissertation has been duly read, reviewed, and critiqued by the Committee listed below, which hereby approves the manuscript of Rachel Baumsteiger as fulfilling the scope and quality requirements for meriting the degree of psychology.

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## **ABSTRACT**

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Prosocial behavior contributes to the well-being of helpers, recipients of help, and the groups in which these individuals are embedded (e.g., Kahana et al., 2013). This paper describes a new, theoretically and empirically driven intervention designed to promote enduring patterns of prosocial behavior among late adolescents and young adults (ages 16 to 25). The intervention includes eight activities such as creating a plan for helping others each day for ten days, enacting that plan, and writing about how those actions reflect one's values and goals. A pretest-posttest experiment was implemented to evaluate the effects of the intervention. Analyses of qualitative and quantitative data indicate that participating in the intervention boosted prosocial attitudes, intentions, and behaviors, and that these effects were still evident one month later. Changes in prosociality were moderated by participants' motivations and effort, and mediated by agency, positive cognitions, and positive emotions. These findings have important implications for understanding and promoting prosocial habits.

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## **CHAPTER 1**

### **INTRODUCTION AND LITERATURE REVIEW**

What constitutes a life well-lived? There are numerous potential answers, but many revolve around two points: a flourishing individual does well and does good. In other words, a good life is characterized by an individual's internal sense of well-being, which encompasses features such as happiness, meaning, and personal growth (e.g., Diener, Emmons, Larsen, & Griffin, 1985; Ryff, 1989; Seligman, 2011); and, by their contributions to the external world, including how they treat other people (e.g., Benson, 2003; Lerner, 2005). One promising route for fostering both aspects of flourishing is to encourage people to engage in prosocial behavior. This term refers to actions aimed at helping other people such as donating money to charity, volunteering in one's community, picking up a neighbor's mail, caring for a family member, or driving a friend to the airport (Eisenberg & Fabes, 1998).

This investigation aimed to help more people lead good lives by contributing new insight into fostering prosocial behavior. In this chapter, I review the existing literature that informed this research. First, I define prosocial behavior and differentiate it from related constructs. Next, I describe the benefits that prosocial behavior has on both the giver and recipient of help. I then present developmental literature relevant to prosocial behavior and explain why adolescence and early adulthood is an optimal time to implement prosocial interventions. Finally, I evaluate existing strategies for cultivating prosocial habits. This review delineates the processes through which people become caring, responsible individuals who actively help others, and the ways in which these processes could be supported.

#### **Prosocial Behavior**

Before reviewing the literature on promoting prosocial behavior, it is important to define the construct. To be prosocial means to be for others. It emerged in the 1970s as an antonym to



the term “antisocial” (Batson, 1998). More currently, prosocial behavior is defined as voluntary actions performed to enhance the welfare of another person (Eisenberg & Fabes, 1998). This construct is multidimensional; it encompasses behaviors that are private or public (Carlo & Randall, 2002), more or less costly (Eisenberg et al., 1999), spontaneous or enduring (Amato, 1990; Eisenberg, Cameron, Tryon, & Dodez, 1981), planned or in response to a need (Amato, 1990; Eisenberg et al., 1981), and motivated by altruistic or self-serving goals (see Eisenberg & Spinrad, 2014, for a review). Common examples of prosocial behaviors include sharing personal resources, cooperating, assisting others with small tasks, providing emotional support, and volunteering in one’s community (Batson & Powell, 2003; Eisenberg & Fabes, 1998). The key features of these behaviors are that the individual chooses to perform them and, in doing so, aims to advance another person’s welfare.

Prosocial behavior is similar to several other constructs. For instance, it largely overlaps with moral behavior. Morality refers to thoughts, emotions, and behaviors about what people ought to do based on universal principles such as justice and caring (Damon & Colby, 2015). It involves personal and cultural values and is often tied to religious beliefs. Many behaviors are both prosocial and moral in nature. For instance, when individuals show kindness, compassion, generosity, and act fairly, they are likely to be acting both prosocially and morally. Although these constructs overlap, they are distinct. Unlike morality, prosocial behavior relates specifically to actions that influence the well-being of other people. Applying moral principles is not always prosocial. For example, when Rosa Parks refused to move to the back of the bus, her actions violated the social norms and laws of the time. Accordingly, her actions would not have been considered prosocial, but they were clearly moral. She was taking a stand for justice. In this way, behaviors can be moral without being prosocial. At the same time, behaviors can be prosocial

without being moral, as is the case with cooperation. Going along with others may be prosocial, but it need not be moral. Despite these distinctions, prosociality and morality overlap more than they differ. Accordingly, although it is important to note their conceptual differences, morality and prosociality are often closely tied in practice.

Prosocial behavior also overlaps with altruism. Altruism refers to behaviors that are motivated “without conscious regard for one’s own self-interest” (Hoffman, 1978, p. 2). Whereas prosocial behavior encompasses actions that are motivated by both selfless and selfish interests, such as gaining social acceptance (see Eisenberg & Spinrad, 2014, for a review), altruism only includes prosocial behaviors that are propelled by selfless concerns. For example, when individuals volunteer at a homeless shelter because they feel concerned about homeless people and want to help them, their actions are both prosocial and altruistic. However, individuals who volunteer because they believe that doing so makes make them more appealing for a job or college are acting prosocially – because they are intentionally trying to advance another person’s welfare, but they are not acting altruistically – because the motivation is not guided by a desire to help others. There is controversy over classifying any action as *purely* selfless because it is difficult to imagine a helper receiving absolutely no benefit from helping; even when individuals help because they believe it is the right thing to do, they still are likely to feel good about helping, which is a personal reward (Batson, 1987). Nonetheless, behavior is typically classified as altruistic when it is motivated primarily by an interest in promoting another’s welfare, and this need is not necessarily the case for all prosocial actions.

Prosocial behavior also intersects with volunteerism and civic engagement. Volunteering is a form of prosocial behavior that occurs in a formal setting (Cnaan, Handy, & Wadsworth, 1996). Some examples include serving food at a soup kitchen, taking care of animals at a shelter,

or building houses for hurricane victims (without compensation). A similar construct is civic engagement, which encompasses behaviors that seek to address issues related to the broader community or society (Syme, 2009). For example, civic engagement can involve voting in elections, participating in community councils, and donating money toward a political campaign. Many of these behaviors aim to benefit other people, and therefore, are prosocial. On the other hand, civic engagement also includes actions that are not aimed at helping others, such as campaigning for a tax break for one's own business. Civic engagement is only prosocial when the goal is to benefit another person or groups of people.

In sum, prosocial behavior includes actions aimed at enhancing the well-being of other people. These behaviors overlap with moral action when they are guided by ethical principles; are considered to be altruistic when they are motivated primarily by the desire to help others; are called volunteering when they occur in formal contexts; and overlap with civic engagement when they are directed towards addressing community or societal needs. Despite the clear points of overlap outlined above, prosocial action is distinct from moral action, altruism, volunteering, and civic engagement.

### **Benefits of Prosocial Behavior**

Efforts to foster prosocial behavior operate on the assumption that prosocial behavior is worth promoting. Before discussing this work in more detail, it is important to reflect on this assumption: is prosocial behavior valuable? And if yes, who benefits from it? Theoretical and empirical work shed light on these issues.

Prosocial behavior is at the crux of many theories of well-being. For instance, in one of the earliest models of optimal functioning, Maslow (1971) proposed that people who reach their full potential exhibit transcendence, which he described as a deep sense of connection and

concern for people as well as animals, nature, and the cosmos. Similarly, Erikson (1968) theorized that the most critical task for middle and late adulthood is to achieve a sense of generativity, which is the feeling that one has made a significant contribution to future generations. Social psychologists also emphasize the importance of positive social interactions for fulfilling a fundamental human need to belong (Baumeister & Leary, 1995; Ryan & Deci, 2000; Taylor, 2011). More recently, developmental scientists have argued that the hallmark of positive youth development is contribution, which reflect efforts to advance the welfare of other people and the community at large (Lerner, 2005). These perspectives all regard prosocial behavior and closely related constructs as central features of human flourishing.

Empirical work supports theoretical notions that prosocial behavior is valuable. There is a robust body of literature showing that prosocial behavior has widespread benefits for both the recipients and enactors of help. Studies find, for instance, that helping others is pleasurable in the moment (Lyubomirsky, King, & Diener, 2005), makes people's lives feel more satisfying (Caprara & Steca, 2005; Kahana et al., 2013; Pashak & Laughter, 2012), and, contributes to a sense of meaning (Auhagen & Holub, 2006; Shek, Ma, & Cheung, 1994). For example, if an older brother helps his younger sister with her homework, the sister is likely to understand the content and receive a good grade, and he is likely to experience positive emotions such as a sense of pride. If repeated over time, then this behavior might even lead the brother to feel that his life is more satisfying and meaningful. These findings support the notion that prosocial behavior as a viable route to both hedonic and eudaimonic well-being.

In addition to contributing to psychological well-being, prosocial behavior is also associated with many indices of physiological health. For instance, when compared to their peers, people who exhibit more frequent prosocial behaviors such as volunteering tend to have

lower blood pressure (Whillans et al., 2016), lower levels of cortisol after encountering stress (Poulin & Holman, 2013), and tend to live longer (Okun, Yeung, & Brown, 2013). These effects likely occur because prosocial behavior tends to evoke positive emotions and strengthen social relationships, which, in turn, buffer stress (Fredrickson, 2001; Taylor, 2011).

In addition to benefitting helpers, prosocial behavior also serves as “social glue” that enables people to create and maintain interpersonal relationships (e.g., Siegel et al., 2010; Szreter & Woolcock, 2004). For instance, in the example provided above, helping each other with homework could strengthen the sibling bond. Furthermore, systems such as families function more smoothly when each member can count on the others to provide help. For example, the children’s parents might have more time to cook dinner if they do not need to help the younger child with her homework. Prosocial behavior also contributes to the healthy functioning of organizations and societies by enhancing trust, social connectedness, and social support among group members (Buss et al., 1990; Van Vugt, 2002). To summarize, prosocial behavior characterizes a life well lived because it adds years to one’s life (e.g., Okun, Yeung, & Brown, 2013), enhances the quality of life (e.g., Kahana et al., 2013), and enables individuals to make a positive impact on the world (e.g., Van Vugt, 2002).

Given its social and personal value, researchers and youth development practitioners alike are interested in promoting prosocial behavior. Empirical work on the topic focuses on evoking specific prosocial behaviors (Batson & Powell, 2003) as well as facilitating a broader propensity to helping (e.g., Obradović & Masten, 2007). Given that the latter results in a greater number of prosocial behaviors, the current work focuses explicitly on building prosocial habits. Habits are defined as behaviors that occur regularly, often exist across contexts, and require less cognitive effort to repeat than they did to begin (Andrews, 1903; James, 1890; Wood & Neal,

2007). Accordingly, prosocial habits are actions that are performed regularly and are intended to help other people. Habitual prosociality reflects a set of qualities, such as a concern for others and sense of responsibility, and the urge people to help others across contexts (Penner, Fritzsche, Craiger, & Freifeld, 1995). The next section provides an overview of how prosocial habits develop, which was used to identify the ideal time to intervene.

### **Developmental Timing of Prosocial Interventions**

The goal of this section was to review the literature that sheds light on how prosocial habits develop. This information was used to determine what ages to target the intervention towards, and to tailor the intervention so it was developmentally appropriate to that group.

#### **Infancy and Childhood**

There is compelling evidence that prosocial behavior emerges very early in life. For instance, in one study, infants ages three to six months watched a puppet show where one puppet helped the other one move uphill, and another puppet tried to thwart its efforts. When presented with the helpful and unhelpful puppets, infants were more likely to reach for or stare at the helpful puppet. Across several stimuli and story variations, infants demonstrate a preference for prosocial characters (Hamlin, Wynn, & Bloom, 2010). Similar studies have shown that infants as young as 18 months are more likely to help a researcher when that person demonstrates distress, need, or desire than when the person does not display those emotions (Dunfield, Kuhlmeier, O'Connell, & Kelley, 2011). This work indicates that even from a very young age, individuals can distinguish between helpful and unhelpful people, can recognize when people need help, and strive to help others.

While the capacity for recognizing and enacting prosocial behavior emerges early, there are important advances throughout childhood that facilitate prosocial action. One significant

change pertains to empathic distress, which is how people feel and respond when others suffer (Hoffman, 2000). As socio-cognitive abilities become more sophisticated, children become increasingly capable of experiencing empathy and responding appropriately. For instance, while infants may feel distressed by another person's suffering and cry to soothe themselves, preschoolers are more likely to try to comfort their classmates by bringing their own favorite toy, and elementary school children may offer objects or words that are specific to each person in need. Of note here is the shift from offering the *giver's* preferred object to offering the *receiver's* preferred object. As children's empathic capacity develops, they are better able to identify what the receiver will find comforting or helpful. Finally, individuals develop an ability to empathize with others without needing to see them suffer. For example, a man might feel distressed when he imagines that women in his life feel fearful when they walk alone at night. In sum, across infancy and childhood, people become increasingly capable of experiencing empathy and providing valuable help.

Although empathy tends to develop across all children, it also varies—to some extent—based on individuals' contexts. Namely, young children are more likely to develop high levels of empathy when their caregivers scaffold perspective taking (Eisenberg & Murphy, 1995; Hoffman, 1983; Krevans & Gibbs, 1996). For instance, if a child pushes another child, then a parent could ask the first child to imagine how they think that action made the other person feel. This technique encourages young people to cultivate the habit of empathizing with other people. Both typical development and adult guidance contribute to significant progress in prosocial thinking throughout childhood.

Work on child development also indicates that prosocial behavior does not simply increase with age; rather, it “gradually becomes selective, socially appropriate, self-regulated,

and morally informed” (Hay & Cook, 2007 p. 102). For instance, after preschool, children tend to share less with classmates with whom they are not friends. This change reflects a variety of factors, such as increased awareness of social norms, developing socio-cognitive skills, friendships, and gender identity, which all stem from children’s basic affiliative desires (Hay & Cook, 2007; Svetlova et al., 2010; Vaish, Carpenter, & Tomasello, 2010). Along with this enhanced focus on affiliation, features of children’s social contexts increasingly influence their behavior. For instance, children tend to imitate actions—prosocial or other—of their peers and adults, especially those who they like, admire, and interact with regularly (Bandura, 1977; Ottoni-Wilhelm, Estell, & Perdue, 2014). They also learn behavior from people who they see in the media: children who engage with prosocial television shows and video games are more likely than those who consume neutral or antisocial media to demonstrate prosocial attitudes and behavior (Gentile, Anderson, Yukawa, Ichori, Saleem, Ming et al., 2009; Greitemeyer & Osswald, 2010; Padilla-Walker, Coyne, Collier, & Nielson, 2015). Children integrate information from across these contexts to assess when and how to behave prosocially. These capacities lay the foundation for further development in adolescence and adulthood.

## **Adolescence**

Adolescence describes the transition from childhood to adulthood. It begins as individuals enter puberty, which typically occurs around age 12. Adolescence ends as individuals assume roles that society deems appropriate for adults. Accordingly, its timing depends on individuals’ biological development as well as their surrounding cultural and social norms (Larson, Wilson, & Rickman, 2009; Susman & Dorn, 2009). Within the developmental literature, the term adolescence broadly refers to the second and third decades of life, with most attention focused on ages 12 to 22.



During adolescence, people undergo several important changes related to prosocial behavior. First, around ages 11 to 13, individuals develop the capacity to think abstractly (Piaget, 1977). This enables them to reflect deeply on issues such as who they are, what is most important to them, and how they fit into the broader world (Eisenberg, Sheffield, McDaniel, & Spinrad, 2009; Piaget, 1977). Due to this cognitive shift as well as growth in self-regulation, individuals become capable of empathizing more deeply with a broader range of people. They begin to care not only about helping specific individuals with whom they interact, but also about contributing to larger, more abstract causes such as political agendas, social movements, and environmental issues. This concern for more distant others broadens the scope of prosocial behavior.

While adolescents develop cognitively, they also experience significant changes in social standing. Throughout puberty, adolescents grow both physically and mentally; they become larger, stronger, and capable of solving complex problems (Carlo, Crockett, Randall, & Roesch, 2007; Fabes, Carlo, Kupanoff, & Lailble, 1999). Due to these advances, adolescents are granted greater autonomy and social power than their younger counterparts. In contrast to younger teenagers, older teenagers have more control over their daily activities. For instance, many teenagers obtain driving licenses around ages 16 to 17, which affords them significantly more freedom to determine how they spend their time. Older teens also tend to spend less time with their parents and more time either alone or with peers.

With these changes, adolescents receive opportunities to become involved in a wider array of prosocial activities, such as peer mentoring programs, faith-based mission trips, coaching community sports teams, and volunteering (Carlo, Hausmann, Christiansen, & Randall, 2003), and they are more likely to assume roles with greater responsibility. Participating in these

sustained prosocial activities increases their interest in helping others, contributes to a sense of agency, and instills the belief that one's acts can make a difference in the lives of others (Pratt & Lawford, 2014; Sokol, Hammond, Kuebli, & Sweetman, 2015; Walker, 2014). Being involved in contexts that encourage people to reflect on their values and build ties with their communities, such as religious organizations, is particularly likely to engender prosocial behavior (e.g., Benson, 2003; Youniss, McLellan, & Yates, 1999).

### **Identity Development across Adolescence and Early Adulthood**

A particularly prominent feature of adolescence is identity development. As Erikson (1968) describes, adolescence is a time when people try to figure out who they are by experimenting with different social roles and evaluating what matters most to them. This is also when individuals are exposed to different contexts (e.g. school, home, workplaces, sports teams, clubs, and peer groups), novel worldviews, and opportunities to try out new roles. Adolescents, in comparison to children and adults, tend to be especially focused on identifying aspects of themselves that are consistent across situations (Erikson, 1968). This process often involves constructing narratives, which are evolving life stories that integrate past and current experiences with future expectations, and typically feature high points, low points, and turning points (McAdams, 1995; Singer & Salovey, 1993). Although narratives emerge during childhood, they become much more complex during adolescence; young people become able to connect disparate events, integrate cultural and historical contexts, and derive overarching themes, such as redemption, growth, or contamination across experiences (Habermas & Bluck, 2000; Habermas & Paha, 2001).

Identity development intensifies during middle to late adolescence (around ages 16 to 20). For many people in the U.S. and other industrialized countries, this process continues to age

25 or even 30, depending on the individual and his or her contexts (Arnett, 2004; Côté, 2006). Some scholars refer to this age group as “emerging adulthood.” These individuals are distinct from children and adolescents in that they have more power and autonomy. For instance, they can vote in elections, open an independent bank account, and join the military. At the same time, many of these individuals are still exploring who they are, what they believe, and what they hope to accomplish with their lives. In these ways, they are developmentally comparable to late adolescents. Given that late adolescents and young adults tend to be actively engaged in identity development, they tend to be more receptive than older adults to new attitudes and behaviors. Furthermore, they are more likely than people of other ages to integrate prosocial qualities into their identities, which predicts long-term patterns of prosocial behavior (Blasi, 2004; Pratt & Lawford, 2014; Walker, 2014).

Coinciding with identity development, late adolescence and early adulthood is a time when people tend to be particularly self-focused (Arnett, 2004). Many people are interested in serving their own interests (e.g., “I want to be happy”) rather than the interests of other people (e.g., “I want *others* to be happy”). Therefore, this might be an especially useful time to draw people’s attention outward towards other people’s needs. This could make people more likely to integrate a concern for others and sense of responsibility to help into their identities.

In addition to these factors—and perhaps, because of them—the literature indicates that prosocial habits established during late adolescence and early adulthood tend to persist (e.g., Arnett, 2004; Erikson, 1968; Hart et al., 2007). For instance, an examination of moral exemplars traced many of those individuals’ prosocial commitments to activities that they engaged in as adolescents (e.g., Matsuba & Walker, 2004). Similarly, longitudinal work reveals significant intrapersonal stability in prosocial responding between ages 20 and 32 (Eisenberg, Hofer, Sulik,

& Liew, 2013). A larger longitudinal study of 6,925 individuals showed that high school students who performed community service—either voluntarily or compulsorily—were more likely than their peers to vote and volunteer eight years after high school (Hart, Donnelly, Youniss, & Atkins, 2007). Thus, although prosocial development never truly stops (e.g., Colby & Damon, 1999), and interventions would likely be useful for people of any age, the literature indicates that they may be most influential for late adolescents and young adults who have not yet settled into adult roles.

To reiterate, individuals tend to be capable and interested in engaging in activities that involve trying new behaviors and reflecting on their identities during late adolescence and early adulthood. Therefore, people in this age group are more likely than people of different ages to be receptive to experiences that broaden their circle of care, encourage them to view themselves as helpers, and ask them to become involved in efforts to help other people. In line with these findings, the present intervention was designed to foster habitual prosocial behavior among adolescents and young adults.

### **Strategies for Promoting Prosocial Habits**

Given that the goal of this work was to develop an effective intervention for cultivating prosocial habits, it was imperative to utilize and build upon the existing literature on prosocial interventions. In this section, I describe research on promoting prosocial development. I organize this review by describing antecedents of habitual prosocial behavior such as a concern for others, empathy, social responsibility, agency, prosocial identity, and short-term prosocial behavior. I explain how each play an essential role in facilitating prosocial behavior, describe how it develops, and review prior studies aimed at promoting it. Finally, I outline the broader implications of this research for the development of the new prosocial behavior intervention.

## **Concern for Others**

To engage in prosocial action, individuals must first recognize other people's needs (Eisenberg et al., 2002; Koole et al., 2001). A concern for others, or "other-orientation," means that an individual is attuned to other people's needs and cares about other people's experiences. A person who is concerned for others directs attention towards people who are close to them as well as larger social groups or all of humanity (McFarland, Webb, & Brown, 2012). Focusing on others allows people to recognize when others are suffering (Narvaez & Lapsley, 2009), and this recognition is critical to initiating helpful, prosocial behaviors.

One effective method for focusing people's attention toward others is to encourage them to practice gratitude. Gratitude refers to positive thoughts and feelings that people experience when they reflect on good things in their lives (Emmons & McCullough, 2003). In this way, gratitude represents a frame of mind. It is a focus on what makes life good, both in small ways and in a broader, overarching sense. Feeling grateful tends to trigger a desire to give back, both to a specific person who helped the individual as well as to the world at large (Bartlett & DeSteno, 2006). Gratitude elicits prosocial behavior both in specific situations (Tsang, 2006) and more generally (McCullough et al., 2002). Gratitude can be fostered by asking people to reflect on the good things in their lives and why they have those things (Seligman, Steen, Park, & Peterson, 2005), to keep a gratitude journal where they list things for which they are grateful (Emmons & McCullough, 2003), or writing letters to people expressing their gratitude towards them (Seligman et al., 2005). The core component of these interventions is the explicit reflection on the people and things for which they are grateful. These methods have illustrated efficacy in directing people's attention towards others.

## **Empathy**

The next antecedent of prosocial behavior is empathy, which is the ability to understand other people's experiences. Empathy involves cognitive processes that allow people to discern others' thoughts and perceptions and take others' perspectives. More importantly, empathy requires an emotional response: to empathize is to *feel* another person's pain – or what one perceives the other person to be feeling. In a prominent empathy-altruism model, Batson (1987) proposes that when people understand other people's suffering, they are more likely to take action to reduce suffering. In this way, promoting empathy can lead people to behave prosocially. Indeed, a robust body of research supports the causal link between empathy and prosocial behavior (Eisenberg, 2000; Hoffman, 2000, see also Davis, 2015 for a review).

There are several effective strategies for increasing empathy. One method is to scaffold perspective-taking by reading stories about different people's experiences and asking individuals to imagine being in their shoes (Mar & Oatley, 2008). For instance, high school and college-aged students exhibited higher levels of empathy towards outgroups after reading about how outgroup members suffered in *Harry Potter* books (Vezzali, Stathi, Giovannini, Capozza, & Trifiletti, 2015). There is evidence that this effect is mediated by narrative transportation, which is the extent to which someone becomes cognitively and emotionally immersed in a piece of media (Green, Brock, & Kaufman, 2004). When people are more engaged with a story, they are more likely to feel the characters' pain, which is more likely to broaden their capacity for empathy.

Another strategy for eliciting empathy is to engage young people in moral discussions. This involves raising ethical issues, inviting adolescents to present various perspectives, and evaluating different arguments. These are most effective when an adult guides the discussions but allows young people to talk amongst themselves as much as possible. Moral discussions can help young people become more aware of other people's points of view, appreciate how their

actions influence other people, and feel more connected to people different from themselves (Claypoole, Moody, & Peace, 2000; Myyry & Helkama, 2002; Walker et al., 2000).

The underlying theme across empathy interventions—including reading and discussing stories (e.g., Vezzali et al., 2015), engaging in moral discussions (Claypoole, Moody, & Peace, 2000), or one-on-one scaffolding, as mentioned above (e.g., Eisenberg & Murphy, 1995)—is that people are encouraged to imagine how another person thinks and feels.

### **Social Responsibility**

A third antecedent of prosocial behavior is social responsibility. Social responsibility refers to a sense of personal obligation to help other people (Berkowitz & Daniels, 1963, 1964). People who are socially responsible are attuned to other people's needs and feel compelled to take action intended to benefit others. Furthermore, people who feel responsible for helping others are more likely to behave accordingly. For example, in a study of social values orientation, college students were presented with a social dilemma where they could choose an outcome that would either benefit themselves or benefit others. Students who scored higher on social responsibility were more likely to select the outcome that benefited others (De Cremer & Van Lange, 2001). In another study, social responsibility was associated with more frequent blood donations and other prosocial behaviors (Steele et al., 2008).

Social responsibility is grounded in interpersonal connections (Berkowitz & Daniels, 1963, 1964). Adolescents express stronger feelings of social responsibility when they feel connected to their classes (Barr & Higgins-D'Alessandro, 2007) and school communities (Battistich, Schaps, Watson, Solomon, & Lewis, 2000; Solomon, Battistich, Watson, Schaps, & Lewis, 2000). Furthermore, a representative, longitudinal study of 3,683 adolescents 9 to 16 years old revealed that the quality of relationships with friends and family members predicted

participants' social responsibility scores across three years (Wray-Lake, Syvertsen, & Flanagan, 2016). Thus, the central route towards enhancing social responsibility is to cultivate a sense of social connectedness (Cross, Bacon, & Morris, 2000).

Social connectedness can be induced relatively quickly. For instance, in one study, college students were asked to write about a time when they felt a strong bond with someone while other students were asked to write about a time when they felt autonomous or competent. Participants who wrote about a relationship reported higher levels of connectedness, expressed more concern for others, and exhibited stronger prosocial intentions than the other group (Pavey, Greitemeyer, & Sparks, 2011). There is also evidence that exposure to nature—such as taking a walk in a park or looking at pictures of beaches—can increase people's sense of connectedness to the world at large (Zhang, Piff, Iyer, Koleva, & Keltner, 2014). These strategies make people feel closer to others, which strengthens their sense of duty towards helping them.

### **Agency**

Even if someone is concerned about others, empathizes with their suffering, and feels compelled to help, they are unlikely to behave prosocially unless they believe that their actions will be effective in changing the other person's experiences. Therefore, a fourth antecedent of prosocial behavior is agency, which refers to a person's perception of control over their surroundings. People who have a strong sense of agency feel like they can effectively initiate, carry out, and change things in their environment (Lewis, 1990). In other words, agency represents the energy and commitment necessary to pursue goals (Synder et al., 1991). Consistent with this notion, agency is critical in motivating and reinforcing prosocial behavior; to act, people must believe in their ability to make a difference (Caprara & Steca, 2005; Penner et al., 1995).



Agency develops based on the interactions that an individual has with his or her environments over time (Bandura, 1989). Therefore, a direct pathway for eliciting agency is to allow adolescents to make more decisions for themselves and to assume roles with higher responsibility. This principle can be executed across contexts, such as the family, school, and community. For instance, parents can allow adolescents more freedom to choose their clothing, food, music, etc. Larson (2000) advises youth organizations to boost their members' sense of agency by providing general structure while encouraging young people to take initiative in selecting project goals and executing plans. The key to these efforts is to empower young people to take control of their environments and to reflect on their accomplishments.

A more discrete strategy for fostering agency is through goal-setting activities. For example, in one study, participants completed an intervention designed to foster hope, which includes a sense of agency as well as goal-setting (Snyder et al., 1991). Participants engaged in eight two-hour group sessions where they discussed topics such as the value of setting meaningful, achievable goals, making plans to reach those goals, finding ways to address challenges to reaching goals, and modifying goals when needed. The researchers found that participants reported higher levels of agency after completing the intervention (Cheavens, Feldman, Gum, Scott, & Snyder, 2006). In a similar study, participants completed a 90-minute intervention in which they set a goal for the next six months, learned about the importance of goal setting and techniques for achieving goals, wrote about their goals and the steps needed to achieve them, and finally visualized pursuing these goals. In comparison to a control group who completed a relaxation activity, participants in the experimental condition reported higher levels of hope immediately after the intervention and exhibited progress towards their goal a month later (Feldman & Dreher, 2012). These findings suggest that encouraging young people to set

and pursue goals for helping others may help them realize their power to enact change, which could make them more interested in helping others in the future.

## **Identity**

In conjunction with the previous qualities, one of the essential features of a person who behaves prosocially across situations is the extent to which that behavior corresponds to values core to the individual's identity (Hardy & Carlo, 2011). There is a large body of research on moral identity, which reflects the degree to which values are central to a person's sense of self (Blasi, 1980). Most research on moral identity is based on a measure that asks people to indicate how much they would like to be a person, or be known as a person, who is caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and kind (Aquino & Reed, 2002). Although morality and prosociality have some areas of divergence, the characteristics listed in the moral identity scale reside at the intersection of morality and prosociality (e.g. caring, helpful, kind). Given that most empirical research on moral identity utilizes this scale or similar measurement strategies, many of the findings on this construct are relevant to the study of prosocial behavior.

People who consider prosocial values and behaviors to be central to their identity are more likely to behave prosocially. Doing otherwise would feel like a violation of oneself. For instance, people who rate values, such as kindness and caring, as central to their identity are more willing than others to volunteer (Aquino & Reed, 2002; Mueller, 2006; Reimer et al., 2009; Conway & Peetz, 2012; Winterich, Aquino, Mittal, & Swartz, 2013), donate money to charities (Aquino & Reed, 2002; Reynolds & Ceranic, 2007) and outgroups (Reed & Aquino, 2003), and to support environmentally conscious behavior (Hardy et al., 2014). Additionally, individuals who view prosocial values as core to their identity are less likely than others to engage in

antisocial behaviors such as delinquency and aggression (Barriga et al., 2001), sports play intended to harm other players (Sage, Kavussanu, & Duda, 2006), lying (Aquino, Freeman, Reed, Lim, & Felps, 2009), or detrimental health behaviors (Hardy et al., 2013). This work suggests that encouraging people to incorporate prosocial values into their identities could increase the likelihood that they will consistently behave prosocially.

The literature suggests several directions for encouraging prosocial identity development. One direction is to alter people's stories about themselves, which are also called "narratives" (e.g., McAdams & Pals, 2006). Forming these stories involves integrating experiences from the past with imagined futures within social contexts and time (Singer, 2004). The process of constructing narratives can help people draw meaning from their experiences (McAdams & Pals, 2006; McAdams & McLean, 2013). There is also evidence that people who behave prosocially construct narratives that involve more prosocial content, such as a concern for others and social responsibility (Pratt et al., 2009; Reimer, 2003; Walker & Frimer, 2007). Thus, encouraging people to think about themselves through a prosocial lens may engender longer-lasting changes in their behavior.

A second strategy for promoting prosocial identity development is to encourage people to search for and commit to a sense of purpose. Purpose refers to a person's overarching, meaningful goal for contributing to the world beyond-the-self (Damon, 2008; Damon, Menon, & Bronk, 2003). The main distinction between purpose and meaningful goals is self-transcendence; purposes reflect concerns about the world that extend beyond oneself. Purposes are not necessarily prosocial, but researchers mostly focus on encouraging prosocial purposes (e.g., Malin, Colby, & Damon, 2014). Therefore, strategies that encourage young people to consider their purpose in life might be useful for helping them think about long-term, prosocial goals.

There is evidence that purpose develops along with identity during adolescence; as people think about who they are, they also think about how they want to influence the world around them (Bronk, Hill, Lapsley, Talib, & Finch, 2009; Malin, Reilly, Quinn, & Moran, 2014; McKnight & Kashdan, 2009). Adults can help facilitate purpose development by providing opportunities for young people to reflect on their values, to consider how they want to contribute to the world, and to engage in discussions with their peers and role models about what their purpose might be (Bronk, Baumsteiger, Riches, Mangan, Dubon, Benavides, & Bono, under review).

A final strategy that could help young people incorporate prosociality into their identity is the Best Possible Selves (BPS) intervention (Markus & Nurius, 1986). This activity asks participants to imagine their lives in the future, assuming that life has gone as well as possible, and then write about what that future entails (e.g., Layous, Nelson, & Lyubomirsky, 2013). Variations of the activity involve visualizing qualities of this “ideal self” (e.g., Sheldon & Lyubomirsky, 2006), drawing a picture (e.g., Owens & Patterson, 2013), or asking people to think about specific short-term goals that will lead them closer to becoming their ideal self (Layous, Nelson, & Lyubomirsky, 2013). This strategy might be particularly effective for promoting prosocial identity commitments because it harnesses the power of narratives, goal-setting, value reflection, and future thinking.

BPS interventions have demonstrated efficacy in changing the way people think about themselves in the future, thereby influencing their present goals and motivation, which can lead to positive long-term outcomes. Namely, BPS interventions have been related to increased optimism (e.g., Shapira & Mongrain, 2010), positive affect (e.g., Sheldon & Lyubomirsky, 2006), self-esteem (Owens & Patterson, 2013), positive expectancies for the future (Meevissen, Peters, & Alberts, 2011), and satisfaction with life (Pietrowsky & Mikutta, 2012); improved

school attendance, conduct (Oyserman, Bybee, & Terry, 2006), and grades (Hock, Shumaker, & Deshler, 2003); and decreased negative affect (Seear & Vella-Brodrick, 2013) and depression (e.g., Oyserman, Bybee, & Terry, 2006). Researchers reason that BPS interventions are successful in promoting outcomes, such as enhanced academic achievement, because they help people form concrete goals for the future, develop specific strategies for reaching those goals, feel optimistic that they can achieve those goals, feel motivated to work toward those goals (Oyserman, Bybee, Terry, & Hart-Johnson, 2004; Oyserman & Fryberg, 2006), and selectively direct their efforts toward those goals (Rosenberg, 1979). Following this logic, it may be possible to modify this approach to encourage people to think about the prosocial qualities they hope to embody in the future, feel optimistic that they could become the type of person who embodies those qualities, and feel motivated to behave prosocially. Moreover, imagining prosocial behavior may form behavioral scripts that make engaging in those behaviors more automatic, and therefore, more likely to occur (Narvaez & Lapsley, 2009; Reimer, 2003). This view is aligned with recent calls for a paradigm shift in the field to recognize the role of future thinking in guiding conscious behavior (Seligman, Railton, Baumeister, & Spinrad, 2013).

No prior research has examined the efficacy of BPS interventions aimed specifically at encouraging people to consider prosocial qualities of their future selves as a means of promoting prosocial behavior. However, research suggests that the extent to which people habitually think about their future selves in prosocial terms—a construct that some researchers label as the “moral ideal self” or the “ought self”—relates to prosocial behavior. In one study, people who responded to questions about what they wanted to be in the future, or what they thought they ought to be like in the future, with more prosocial terms such as caring/compassionate” or “honest/fair/tolerant” were more likely to be rated by friends as warm, altruistic, and positive

(Bybee, Luthar, Zigler, & Merisca, 1997). Similar studies have found that adolescents who endorse prosocial characteristics and behaviors as more vital to their future selves are more likely to be involved in their communities (Pratt, Hunsberger, Pancer, & Alisat, 2003) and to be rated by their parents as altruistic (Hardy, Walker, Olsen, Woodbury, & Hickman, 2014). These findings suggest that how people imagine themselves in the future may influence their prosocial behavior in the present. More research is needed to test these ideas empirically.

### **Prosocial Behavior**

Given that this work is intended to supply directions for fostering prosocial habits, it is also useful to incorporate research on habit development. A habit is generally defined as a moderately fixed way of thinking, feeling, or behaving that is repeated regularly and tends to occur automatically (Andrews, 1903; James, 1890). Habits operate in a sequence; a stimulus triggers a behavior. When a person enacts the behavior, they experience a consequence. If the consequence is positive, then the behavior becomes associated with that reward, and therefore is likely to be repeated (Duhigg, 2014). Behaviors that are repeated more frequently become scripts that are more readily available. As a result, people are more likely to repeat these behaviors automatically (Narvaez & Lapsley, 2009; Reimer, 2003). Thus, while prosocial behavior can be viewed as a short-term outcome of the intervention, it can also be used as a tool to engender long-term habits of prosociality (Ouellette & Wood, 1998).

Prosocial behavior is inherently rewarding; it tends to evoke positive emotions, sometimes referred to as a “helper’s high.” These good feelings encourage subsequent helping behavior. Researchers describe this sequence as a positive feedback loop (Aknin, Dunn, & Norton, 2012; Layous, Nelson, Kurtz & Lyubomirsky, 2016). Furthermore, performing a behavior activates pathways for future behavior so it requires less energy to perform it, which

thereby makes that behavior more likely (Narvaez & Lapsley, 2009; Shiffrin & Dumais, 1981). For instance, individuals who agree to water their neighbor's plants while they are away learn which plants to water, how much water to give them, and how to get into the house, which makes the task seem easier and increases the likelihood that they will perform it again. There is also evidence for the "Ben Franklin Effect," which is the observation that helping someone often leads the helper to like that person more, which makes them more likely to help that person again (Jecker & Landy, 1969). Given that prosocial behavior serves as its own reward, the main goal for interventions should be to encourage people to start engaging in prosocial behavior as a means of creating triggers and pathways that encourage subsequent helping behavior.

One useful strategy for encouraging prosocial behavior is to elicit positive emotions. There is a well-documented connection between positive emotions and prosocial behavior. According to Fredrickson's Broaden and Build Theory (2001), positive emotions broaden people's thought-action repertoires such that they are more likely to do things that build psychological and social resources, such as engaging with others. Empirical research supports this theory; studies show that positive emotions enable perspective-taking and compassion (Nelson, 2009; Waugh & Fredrickson, 2006) and evoke prosocial behavior (e.g., Aknin, Dunn, & Norton, 2012). Thus, arousing positive emotions is a viable strategy for triggering prosocial thinking and behavior.

One discrete emotion strongly tied to prosocial behavior is moral elevation. Moral elevation is a positive emotion that arises when an individual witnesses another person engaging in an unexpected act of goodness, kindness, or compassion toward a third party. Elevation is described as feeling joyful, uplifted, moved, and inspired to help others and become a better person (Haidt, 2000). Elevation motivates people to set more prosocial goals (Haidt, Algoe,

Meijer, Tam, & Chandler, 2000) and behave more prosocially immediately after the elevating experience (Haidt et al., 2000; Freeman, Aquino, & McFerran, 2009; Cox, 2010; Schnall, Roper, & Fessler, 2010; Thomson & Siegel, 2013). Elevation may be especially likely to evoke prosocial behavior in others. Furthermore, people who experience elevation more frequently tend to exhibit more prosocial behavior (Chang, Kim, & Lee, 2015; Landis et al., 2009).

Another promising route for promoting sustained prosocial behavior is to recruit institutions, such as schools and faith-based organizations, to encourage young people to engage in helping behaviors. For example, many high schools and some college classes recommend or require that students engage in service learning. This is an educational practice in which students perform community service as a part of a course curriculum (Astin et al., 2000). Service learning gives students practical experiences that reinforce lessons that they learn in the classroom, and also provides guidance for finding ways to contribute to one's community. The key elements for making these experiences conducive to habit formation are to relate the activity to the course or curriculum, allow students to choose an activity that appeals to their strengths and values, to address a real community need, to engage in that activity for at least three months, and to ask the student to critically reflect on what they learned from their experience (Astin et al., 2000; Lyubomirsky & Layous, 2013; Skinner & Chapman, 1999). These methods enable young people to identify causes they care about, build connections in their communities, realize their potential to make a difference, and experience the rewards of helping, which increases the likelihood that prosocial behavior will endure into adulthood (Gallant, Smale, & Arai, 2010). This approach has demonstrated efficacy in promoting prosocial behavior in the short-term as well as up to a decade later (Astin et al., 2000).



Given that service learning engenders particularly long-term effects, it would be useful to pursue an intervention that includes its core components: short-term prosocial behaviors and identity reflection (Astin et al., 2000). At the same time, this intervention entails considerable time and effort; it requires participants to engage in ongoing prosocial behavior in formal contexts, such as a charity or community organization, and requires a teacher or administrator to help young people locate and gain access to organizations provide ongoing support for any practical problems that arise, such as finding transportation to the organization's location. One strategy for addressing these issues is to ask young people to engage in short-term prosocial behavior, but to broaden the range of options from which they can choose. For instance, individuals could enact informal prosocial behaviors in their classrooms, peer groups, families, workplaces, etc. Another useful change could be modifying the intervention so it could be completed without a trained facilitator. This would make the intervention accessible to a greater number of young people, such as students of teachers who do not have the resources to implement a service learning curriculum, or late adolescents and young adults who do not attend college. In creating an intervention that is feasible to disseminate across a broader population, it would be beneficial to incorporate findings from research on similar topics, such as strategies for enhancing people's motivation to engage in an intervention (e.g., Lyubomirsky & Layous, 2013) and fostering short-term prosocial behavior (e.g., Haidt et al., 2000). Integrating these strategies could help capitalize on the strengths of the previous work while expanding the number of people who could benefit from the intervention.

### **Conclusions and Future Directions**

The purpose of this review was to canvas the literature for insights that could aid in developing an effective intervention for cultivating prosocial habits. The first main conclusion

was that adolescence and early adulthood (ages 16-25) is an optimal time to cultivate prosocial habits. Second, the primary objective for fostering long-term prosocial behavior should be to encourage young people to engage in more prosocial behavior within their present environments, such as in their families, friend groups, classrooms, and communities, and to reflect on these behaviors. Prosocial behavior is most likely to endure if it is personally meaningful (Sheldon, & Elliot, 1999) and is repeated across time (e.g., Astin et al., 2000; Shiffrin, & Schneider, 1977).

Although there are evidence-based strategies for fostering various components of prosociality, few existing interventions employ multiple strategies simultaneously. One exception is character education. Character education refers to a variety of programs that are implemented in educational contexts such as classrooms and after school programs to foster prosocial behavior and moral development broadly (Berkowitz & Bier, 2005). These programs typically target students in Kindergarten through twelfth grade educational contexts. This approach utilizes a variety of activities such as direct instruction and project-based learning, and often seeks to involve parents, teachers, and community members. A review of these programs suggests that they are most likely to engender prosocial qualities such as social responsibility and prosocial identity when they encourage young people to enact short-term prosocial behavior in their communities and reflect on those behaviors in terms of their own values and goals (Berkowitz & Bier, 2005). This work illustrates how interventions can be implemented effectively in educational contexts. It also add credence to the notion that combining multiple strategies could present a useful route for enacting enduring changes in prosocial behavior.

In addition to testing an integrated intervention, it is important to test the efficacy of these strategies across young people's natural contexts and by collecting information on potential modifying factors. This could contribute to a better understanding of the specific conditions

under which interventions are most effective. For example, young people might be more likely to incorporate prosociality into their identities if their families also value helping other people. Similarly, adolescents from lower socio-economic status families might be better able to empathize with the plight of homeless people, and therefore, respond more energetically to encouragement to give back to needy people in their communities. Likewise, reading stories and discussing people's perspectives might be more effective when there are people with different viewpoints present, such as a community center, rather than contexts where people's values are more homogeneous, such as a family. Studying these factors could enrich the existing literature on prosocial development and how it can be encouraged among young people. In the next chapter, I describe an intervention that was designed to integrate and extend this research.

## CHAPTER 2

### DESCRIPTION OF CURRENT STUDIES

The overarching goal of this investigation was to build upon the existing literature to create an effective tool for fostering prosocial habits among adolescents and young adults. In this chapter, I describe the components of a new intervention, including its empirical foundations and intended effects. I then outline a series of studies aimed at testing its efficacy.

#### Intervention Content

The literature review above (Chapter 1) indicates that the most effective method for engendering prosocial habits is to encourage people to engage in short-term prosocial behavior and reflect on its implications for on one's identity and relationships with other people (e.g., Astin et al., 2000; Bronfenbrenner & Morris, 2006; Reimer, 2003). This can help foster a concern for other people, empathy, social responsibility, prosocial agency, and prosocial identity within the individual (e.g., Mueller, 2006; Penner et al., 1995; Pratt & Lawford, 2014). These behaviors can also change one's context in ways that make subsequent prosocial behaviors more likely. For example, if someone helps his or her classmate with an assignment, then that classmate should be more likely to ask for help again in the future. Furthermore, prosocial behavior tends to provoke positive emotions, which leads people to engage in additional prosocial behaviors, thereby developing habits of helping (Aknin et al., 2012; Layous et al., 2016). Altogether, the evidence suggests that the key to cultivating long-term patterns of prosociality is to urge people to begin.

Based on these findings, the current intervention focused primarily on encouraging people to enact prosocial behaviors in their current contexts—such as comforting a friend, helping a parent with a chore, and donating old books to one's school—and to reflect on the

implications of those behaviors for themselves and the recipients of help. Because people are more likely to repeat behaviors that are personally meaningful (Sheldon, & Elliot, 1999), the intervention included additional steps to encourage people to feel intrinsically motivated to help others and to connect prosocial behavior to their values, goals, and identities. Each step of the intervention is outlined in more detail below.

### **Step 1: Motivation to Engage in the Intervention**

According to the person-activity fit model, activities tend to be more influential when people value and identify with the activities' goals (Lyubomirsky & Layous, 2013). This occurs because people feel intrinsically motivated to pursue tasks that are relevant to their interests and core values and that contribute to their sense of autonomy, competence, and social relatedness (Ryan & Deci, 2000; Sheldon & Elliot, 1999). As a result, people tend to engage more deeply with the content, which means that they spend more time completing the activities and think more critically about them. On the other hand, people who complete interventions for extrinsic reasons—such as earning money—are more likely to just go through the motions (Lyubomirsky & Layous, 2013). In line with this research, participants were presented with information about how the activities are expected to benefit them (e.g., strengthening social relationships, increasing life satisfaction) at the beginning of the intervention. This was expected to enhance their intrinsic motivation to participate, and therefore, boost the effects of subsequent activities.

### **Step 2: Prosocial States**

The second step of a prosocial intervention should be to evoke states in which people feel open and concerned for others. Although most positive emotions tend to make people feel more open (Fredrickson, 2001), two specific emotions could be particularly useful. First, moral elevation is a warm, uplifted feeling that people experience after witnessing an individual

perform an unexpected act of kindness towards another person. Elevation reliably evokes prosocial behavior because it inspires individuals to want to be better people (Haidt, 2000; Haidt, Algoe, Meijer, Tam, & Chandler, 2000). A second moral emotion, gratitude, refers to a set of positive thoughts and feelings people tend to experience when they reflect on the good things in their lives and the people who have helped them (McCullough et al., 2002). Thinking about what one has tends to evoke a desire to reciprocate that help, and also to “pay it forward” to other people (Bartlett & DeSteno, 2006). Two activities were used to harness the effects of elevation and gratitude on prosociality. First, participants watched an inspirational story, which has been shown to facilitate elevation in prior work (Lai, Haidt, & Nosek, 2014). Second, participants were asked to reflect on what and who they are grateful for and to write about those things. Similar activities, such as writing about three things one is grateful for, demonstrate efficacy in fostering a grateful state (Emmons and McCullough 2003; Froh, Sefick, & Emmons, 2008). Evoking these emotional states was expected to enhance people’s desire to engage in prosocial behavior, which could increase engagement in later activities such as making plans for helping others in the near future and enacting those plans.

### **Step 3: Identity Reflection**

Another critical step for fostering long-term prosocial behavior is to encourage young people to step back and think about who they are and what is most important to them. Towards this goal, participants were asked to identify the values they consider most central to who they are as a person. These could include qualities such as courage, creativity, and loyalty. They were also asked to reflect on other aspects of their identities, such as their strengths, interests, important relationships, causes that they feel passionate about, and their long-term goals for making an impact on the world. Similar activities have been used in previous studies to make

issues such as goals and relationships more salient (e.g., Cheavens, Feldman, Gum, Scott, & Snyder, 2006; Layous, Nelson, & Lyubomirsky, 2013; Pavey, Greitemeyer, & Sparks, 2011). Priming people to think about these factors could increase the likelihood that they incorporated them into their goals for behaving prosocially, which then made those actions more personally meaningful.

#### **Step 4: Active Engagement in Prosocial Behavior**

As mentioned previously, there are several compelling reasons to believe that initiating short-term prosocial behavior will beget long-term prosocial behavior. First, asking people to find ways of helping other people can shift their focus outwards, to other people's needs. Second, repeating any action across time diminishes the amount of cognitive energy required to plan and execute the behavior (Shiffrin, & Schneider, 1977). The more someone behaves prosocially, the more automatic it becomes (Reimer, 2003). Third, there is a well-documented "positive feedback loop" between prosocial behavior and positive emotions: helping others tends to put people in a good mood, which, in turn, makes them more likely to help others (Aknin, Dunn, & Norton, 2012; Layous, Nelson, Kurtz & Lyubomirsky, 2016). Therefore, enacting a prosocial behavior not only makes someone more likely to repeat that particular behavior, but also to engage in prosocial behaviors more generally. Most importantly, these actions alter a person's interactions with their contexts, which could make them more conducive to prosocial behavior. For example, if a young person chooses to volunteer in a homeless shelter, then he or she will meet people who run the shelter, learn the shelter's schedule, and will likely be invited to return to volunteer again. Another participant might decide to invite another student to eat lunch with him or her. Once this relationship is initiated, it is more likely that two students will exchange friendly interactions in the future. Similarly, expressing appreciation towards someone in a meaningful

way could create a pathway for subsequent expressions of gratitude and kindness between those individuals. Fostering these changes to an individual's interactions with his or her contexts is critical for enacting sustainable behavioral changes (Bolier et al., 2013).

To promote short-term prosocial behavior, participants were asked to create a plan for helping other people each day. They were given the freedom to select their own behaviors so they would feel more intrinsically motivated to perform them (Ryan & Deci, 2000). The planning process was included because imagining a behavior, especially the specific steps involved in carrying it out, increases the likelihood that a person will perform it (Gollwitzer, 1996; Pham & Taylor, 2016). Additionally, research indicates that setting goals, carrying them out, and then reflecting on them can bolster people's sense of agency (Cheavens et al., 2006; Feldman & Dreher, 2012). Next, participants were asked to execute those behaviors. Research on the random acts of kindness interventions, which encourages similar behaviors, indicates that helping others enhanced well-being in as little as one day, and that these effects endured across six weeks (Lyubomirsky, Tkach, & Sheldon, 2004). To maximize the effects of this activity, participants were asked to behave prosocially for ten days. This time frame was selected to allow enough time for the behaviors to become regular, while also minimizing participant fatigue. This time span resembles those used in interventions with similar daily assignments (e.g., Lyubomirsky, Tkach, & Sheldon, 2004; Seligman, Steen, Park, & Peterson, 2005). Participants took notes at the end of each day that described what they did, how it made them feel, and how it impacted the other person. This aimed to increase participants' attention to the consequences of helping behavior for themselves and other people. Similar daily reflections have been used in previous work to enhance the effects of behavior on how people think and feel (e.g., Emmons and McCullough 2003).



## **Step 5: Behavior Reflection**

A final, critical step of the intervention was to ask people to reflect on the implications of behaving prosocially. This activity was intended to help young people recognize the benefits of prosocial behavior and boost their prosocial agency, which could motivate them to continue those behaviors (Aknin, Dunn, & Norton, 2012; Snyder et al., 1991). Furthermore, the process of reflecting on the intervention was essential for giving young people an opportunity to evaluate how the prosocial behaviors that they performed, as well as their long-term prosocial goals that they identified earlier in the intervention, relate to their overarching conceptions of who they are (Astin et al., 2000). Incorporating these prosocial behaviors and goals into one's identity could increase the likelihood that the individual will behave prosocially in the future (Aquino & Reed, 2002; Conway & Peetz, 2012; Hardy & Carlo, 2011).

## **Intervention Implementation**

The steps presented above were addressed through eight activities. These included watching an introductory video, watching an elevating story, responding to questions about one's identity, describing core values, writing about goals, creating a plan for helping others, enacting that plan, and reflecting on the implications of prosocial behavior for one's sense of self and plans for the future. These activities were expected to work in conjunction to influence prosociality in the immediate moment, during the intervention, within the days after the intervention, and in the long-term. See Table 1 for an overview of the intervention and the anticipated effects of each activity.

PROSOCIAL BEHAVIOR INTERVENTION

Table 1.

*Anticipated Intervention Effects*

<b>Activity</b>	<b>Immediate effects</b>	<b>Effects during the intervention</b>	<b>Short-term effects</b>	<b>Long-term effects</b>
1. Introduction	Increased concordance with intervention goals and desire to participate	Increased engagement with subsequent activities		
2. Elevation video	Moral elevation	Increased openness to activities and increased desire to help others		
3. Identity warmup	Gratitude, thinking about social relationships, optimism, "big picture" thinking	Heightened concern for others, stronger desire to help others, deeper responses to the BPS		
4. Values identification	Recognition of core values	Integration of core values into prosocial planning and reflection		
5. Best possible self	Thinking about the future and long-term goals	Thinking about goals, values, and the future; integration of these concerns into prosocial planning and reflection		
6. Prosocial planning	Thinking about prosocial goals	Increased motivation to help others, increased likelihood of carrying out those behavior		
7. Prosocial behavior	Short-term prosocial behavior	Increased attention to others' needs, positive emotions after helping, increased desire to help more	Recognition of the value of prosocial behavior, increased prosocial agency	
8. Reflection	Recognize the benefits of prosocial behavior and reflect on values and goals	Integrate prosocial behavior to one's identity, increased prosocial intentions/future goals	Increased concern for others, empathy, responsibility, prosocial identity, prosocial agency, intentions to help, pathways for helping, short-term prosocial behavior	Enduring patterns of prosocial behavior

## Current Studies

The current studies were designed to test the efficacy of the intervention described above in enhancing prosocial habits. Each of the individual components has demonstrated efficacy in promoting prosocial outcomes for at least some people. However, several of them have not been tested for promoting prosocial behavior among adolescents and young adults. For example, the BPS has been found to enhance people's moods and desires to pursue goals, but not to strengthen people's *intentions* to pursue those prosocial goals. Moreover, the activities have not been tested in conjunction to determine whether implementing them together is more effective than implementing them alone. Finally, and perhaps, most importantly, there is very limited information on the long-term effects of these interventions on prosocial behavior. Thus, the present investigation sought to extend the literature by testing how the integrated intervention influenced prosocial habits over time.

As a part of testing the effects of the intervention on prosociality, it was also important to evaluate factors that could moderate the effects (Lyubomirsky & Layous, 2013). Several factors were expected to influence for whom the intervention would be most effective. First, previous research indicates that people who are intrinsically motivated to complete interventions are more likely to devote more time and energy into it, and therefore, are likely to exhibit stronger responses than people who are less interested in the intervention (Lyubomirsky & Layous, 2013). Along the same lines, people who follow instructions more diligently than others, such as completing the daily reflections each day, tend to experience a higher "dosage" of the interventions and therefore are more likely to experience the intended effects (Lyubomirsky & Layous, 2013). Responses to the intervention could also be influenced by individuals' development and worldviews. For instance, older participants might be more likely than younger

people to take the intervention seriously and engage deeply with the materials. On the other hand, older individuals might be less interested than younger individuals in refining their identities. As a result, young participants might be more likely to incorporate prosocial goals and values into their sense of identities throughout the intervention, and therefore, exhibit larger changes in long-term prosocial behavior. The intervention effects may also be influenced by people's belief systems. For instance, there is some evidence that religiosity is correlated with prosocial behavior towards close others (e.g., Batara, Franco, Quiachon, & Sembrero, 2016; Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005) and that people who are politically liberal tend to exhibit more frequent prosocial behavior than conservatives (Eisenberg, 1976; van Lange, Bekkers, Chirumbolo, & Leone, 2012). Therefore, it was possible that people who differed in these orientations would respond differently to the intervention. Additionally, personality features—such as extraversion and agreeableness—can influence how comfortable people feel with completing certain types of activities, which in turn can influence the efficacy of interventions (e.g., Schueller, 2012). These factors were tested to help improve the interpretations of how the intervention influenced prosocial behavior across different people.

Another critical step in testing how the intervention influenced prosocial behavior was to examine factors that mediated these effects. First, I considered how the intervention influenced short-term outcomes—including a concern for others, empathy, social responsibility, prosocial agency, prosocial identity, and prosocial intentions—that predicted long-term prosocial behavior (Aquino & Reed, 2002; Davis, 2015; De Cremer & Van Lange, 2001; Eisenberg et al., 2002; Penner et al., 1995). Narrowing in even further, I considered the immediate effects of the intervention. This included factors such as positive emotions and future thinking, which engendered short-term increases in prosocial intentions and behavior in prior studies (e.g., Aknin

et al., 2012; Bartlett & DeSteno, 2006; Baumsteiger, 2017; Schnall, Roper, & Fessler, 2010).

This analysis also included an exploration for additional processes that could help explain how the intervention influenced prosocial tendencies. Conducting these analyses could provide insight into *how* the intervention influenced habitual prosocial behavior.

Stepping back, the overarching goal of fostering prosocial behavior was to progress human flourishing. This includes promoting behaviors that help specific beneficiaries and social groups as well as enhancing well-being among individuals. Therefore, in addition to evaluating whether the intervention was effective in increasing prosocial behavior, I also explored the effects of the intervention on indices of well-being, including life satisfaction, meaning in life, and optimism. Life satisfaction is perhaps the most commonly used measure of well-being. It refers to the extent to which one feels that the conditions of their life are good and that they have gotten what they wanted out of their life so far (Diener et al., 1985). Another commonly-used measure of well-being is meaning in life. This construct encompasses the sense that one's life is coherent, that one has a sense of purpose, and that one's existence is significant (Martela & Steger, 2016). In addition to measuring whether a person believes that his or her life is currently satisfying and meaningful, emerging evidence suggests that it is critical to consider how a person views the future (e.g., Seligman, Railton, Baumeister, & Sripada, 2013). Accordingly, I also included a measure of optimism, which is a person's belief that life will be good in the future (Scheier, Carver, & Bridges, 1994). Although these three constructs do not assess every aspect of well-being (e.g., personal growth; Ryff, 1989), they represent important aspects of well-being. Given the robust evidence that prosocial behavior facilitates individuals well-being (e.g., Caprara & Steca, 2005), if this intervention was successful in promoting prosocial behavior, then it also should have boosted well-being.

These research goals were addressed through four studies. First, Pilot Study 1 (Chapter 3) was conducted to pilot the survey used to assess prosocial tendencies. Next, Pilot Study 2 (Chapter 4) was launched to evaluate whether the activities had the intended effects. After refining the measures and activities, I conducted Pilot Study 3 (Chapter 5) to run the full study with a small sample to evaluate implementation features such as timing. Finally, a full experiment (Chapter 6) was launched to test the efficacy of the intervention in promoting habitual prosocial behavior among adolescents and young adults. I discuss the implications of these results in Chapter 7.

## **CHAPTER 3**

### **PILOT STUDY 1**

For the main study, participants responded to measures of prosociality (prosocial intentions, prosocial identity, prosocial agency, a concern for others, empathy, and social responsibility) three separate times (before the intervention, immediately after the intervention, and one month after the intervention ended). One potential drawback to this approach was that answering a large number of questions multiple times can contribute to fatigue, which could diminish the quality of responses (Porter, Whitcomb, & Weitzer, 2004). Additionally, no validated measures were found for prosocial identity or prosocial agency, which were critical for evaluating the efficacy of the intervention. Therefore, a pilot study was conducted to (a) evaluate the most representative items from longer measures of empathy and social responsibility to reduce the number of total items used to evaluate prosociality, and (b) to collect data on the basic psychometric properties of scales that were created or modified for this survey, including measures of empathy, social responsibility, prosocial identity, and prosocial agency. The goal of this study was to develop a scale for each construct that is brief, internally consistent ( $\alpha = .70 - .95$ ), and positively correlated to established measures of prosociality, including scales of the concern for others, past prosocial behavior, and intentions to behave prosocially in the future.

#### **Method**

##### **Participants**

The sample included 100 participants from Amazon's Mechanical Turk (MTurk). This group tends to provide reliable data (Azzam & Jacobson, 2013; Casler, Bickel, & Hackett, 2013; Goodman, Cryder, & Cheema, 2013). This sample size meets the recommended minimum of three participants for each item in each scale tested for the factor analyses (Cattell, 1978).

Roughly half of participants were male (48%). Most participants were Caucasian (78%) and others were African American (10%), Asian (7%), Hispanic (4%), or Middle Eastern (1%). Ages ranged from 19 to 65 ( $M = 33.33$ ,  $SD = 10.83$ ). Although this sample was older than the target sample for the main study (ages 19 to 65 versus 16 to 25, respectively) and comprised MTurk workers rather than students, the content of these measures was believed to be appropriate for both adolescents and adults. In fact, several similar measures (e.g., Youth Social Responsibility Scale, Prosocial Behavioral Intentions Scale) have been tested with both adolescent and adult samples and demonstrated similar psychometric properties.

## **Materials**

As discussed above, several dimensions of prosociality predict long-term prosocial behavior. These prosocial tendencies were operationalized through measures of the concern for others, empathy, social responsibility, prosocial identity, social responsibility, prosocial intentions, and past prosocial behavior. The first five measures mapped directly onto five of the dimensions described above. The latter two scales were used to contribute information on the convergent validity of each new or modified scale with people's current prosocial tendencies and their propensity to help in the future.

**Concern for others.** The altruistic attitudes scale (Kahana et al., 2013) was used to assess a person's desire to help other people. It asks respondents to rate their agreement with four statements such as, "I try to help others, even if they do not help me" from 1 (*Strongly disagree*) to 7 (*Strongly agree*). In previous studies, this measure demonstrated adequate internal consistency ( $\alpha = .66$ ). Furthermore, scores on this scale have been linked to volunteering ( $r = .27$ ,  $p < .01$ ) and informal prosocial behavior ( $r = .27$ ,  $p < .01$ ; Kahana et al., 2013). It was also internally consistent in the current study ( $\alpha = .86$ ).



**Empathy.** The Toronto Empathy Questionnaire (Spreng, McKinnon, Mar, & Levine, 2009) was used to assess the extent to which people understood and experienced other people's emotions. This measure was created by combining items from previous empathy scales and conducting a factor analysis to evaluate the most representative items. The resulting scale asked respondents to rate their agreement with 16 statements such as, "I enjoy making people feel better" and "I am usually 'in tune' with other people's moods." Each item was rated on a 7-point Likert scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Given that parsimony was the goal of this study, I selected the eight items that had the highest factor loadings in the original study. The full scale was internally consistent ( $\alpha = .85$ ) and correlated with other measures of perspective taking and empathic concern (Spreng et al., 2009). The eight items selected for this study also demonstrated adequate internal consistency ( $\alpha = .88$ ).

**Interpersonal social responsibility.** Items from the Youth Social Responsibility Scale (Pancer, Pratt, Hunsberger, & Alisat, 2007) were used to assess individuals' beliefs that people have a responsibility to help others and society at large. Given that some items in the original 29-item measure focus on political activism and attitudes about the responsibility of schools and parents—which were not central to this study—I omitted those items and only retained four items that ask about attitudes towards one's responsibility for helping other people. These items also had strong factor loadings in the original publication. They include statements such as, "People should help one another without expecting to get paid or rewarded for it." Participants were asked to rate their agreement with each statement from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The original measure is internally consistent ( $\alpha = .88$ ) and is positively correlated with perceived social support, optimism, and identity development (Pancer et al., 2007). The modified scale was also internally consistent ( $\alpha = .81$ ).

**Prosocial identity.** The self-importance of moral identity scale (Aquino & Reed, 2002) was adapted to assess the extent to which people considered prosocial characteristics to be central to their identities. Respondents were instructed to imagine a person who is caring, compassionate, friendly, generous, helpful, and kind. Next, they were asked to rate their agreement with three statements such as, “Having these characteristics is an important part of who I am.” These were rated from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The original scale demonstrated good internal consistency ( $\alpha = .73 - .82$ ; Aquino & Reed, 2002), and predicted donation behavior and volunteering in normal U.S. adult samples (Winterich, Aquino, Vikas, & Swartz, 2013). The modified version also had good internal consistency in the current study ( $\alpha = .93$ ).

**Prosocial agency.** A six-item scale, created for this study, was used to assess people’s beliefs that they have the capacity to effectively enact prosocial behavior in a variety of ways. This scale was created based on Bandura’s (2006) recommendations for creating domain-specific measures of self-efficacy, including the wording “I am confident that I can make an impact on...” The items varied based on the recipients of help, which is indicated as the most important distinction for determining helping intentions (Eisenberg & Spinrad, 2014). Thus, this scale asked respondents to rate their confidence that they can make a positive impact on friends, family members, people in their school, people in their community, strangers, and the world from 1 (*Very unconfident*) to 7 (*Very confident*). In the current study, this scale demonstrated good internal consistency ( $\alpha = .90$ ).

**Past prosocial behavior.** The past prosocial behavior scale (PPBS; Baumsteiger & Siegel, unpublished) was used to measure previous prosocial behavior. Participants were asked to report how frequently they “comforted someone,” “helped a stranger find something they

lost,” “helped care for a sick friend or relative,” and “assisted a stranger with a small task” in the past. Each item was rated from 1 (*Never/Almost never*) to 7 (*Always/Almost always*). Data from studies with MTurk workers suggest this measure was internally consistent ( $\alpha = .79-.81$ ), positively related to prosocial intentions ( $r = .70, p < .001$ ), meaning in life ( $r = .26, p < .01$ ), life satisfaction ( $r = .25, p < .01$ ), positive affect ( $r = .41, p < .01$ ), and social support ( $r = .42, p < .01$ ), and was negatively correlated with negative affect ( $r = -.27, p < .01$ ). In these studies, volunteers scored higher on the PPBS ( $M = 4.98, SD = 1.21$ ) than non-volunteers ( $M = 4.24, SD = 1.37$ ),  $t(81) = 2.24, p < .05, d = .57$ . Similarly, organ donors scored significantly higher on the PPBS ( $M = 5.17, SD = 1.03$ ) than non-organ donors ( $M = 4.48, SD = 1.33$ ),  $t(90) = 2.77, p < .01, d = .57$  (Baumsteiger & Siegel, unpublished). This measure also demonstrated good internal consistency in the current study ( $\alpha = .86$ ).

**Prosocial intentions.** The prosocial behavior intentions scale (PBIS; Baumsteiger & Siegel, 2018) was used to assess people’s intentions to behave prosocially in the future. The four items included: “comfort someone,” “help a stranger find something they lost,” “help care for a sick friend or relative,” and “assist a stranger with a small task.” Each item was rated from 1 (*Definitely would not do this*) to 7 (*Definitely would do this*). In studies with MTurk workers, this measure exhibited good internal consistency ( $\alpha = .80, .82$ ); convergent validity with moral identity ( $r = .50, .55$ ), past prosocial behavior ( $r = .43, .51$ ), and materialism ( $r = -.20, -.30$ ); and predicted who voluntarily answered additional questions at the end of the survey for no payment ( $r = .22-.32$ ; Baumsteiger & Siegel, 2018). It also demonstrated high internal consistency in the current study ( $\alpha = .91$ ).

## Results

There were no missing data or outliers. All cases were retained for analyses.

## **Item Reduction**

I performed a principle axis factor analysis on items from the empathy and social responsibility scales. The goal of this analysis was to identify items with weak factor loadings. For the social responsibility scale, the item, “Teenagers should enjoy themselves and not worry about things like poverty and environment” had a considerably lower factor loading (.29) than all the other items (.76 - .88). Additionally, excluding this item increased the scale’s internal consistency from  $\alpha = .69$  to .85. Similarly, for the empathy scale, the item, “I find it difficult to see things from other people's perspectives” had lower factor loadings (.50) than the other items (.70 - .81). Therefore, these items were removed from the scales for subsequent studies.

## **Psychometric Information for New/adapted Measures**

I examined the internal consistency and convergent validity of the scales that were created (prosocial agency) or modified (empathy, social responsibility, and prosocial identity) for this study. All scales were positively, significantly correlated to concern for others, past prosocial behavior, and prosocial intentions. See Table 2 for scale characteristics and correlations among the final scales.

Table 2.

*Scale Characteristics and Correlations for Pilot Study 1*

	<i>M</i>	<i>SD</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1. Prosocial intentions	5.75	1.26	.91						
2. Past prosocial behavior	5.15	1.41	.66***	.86					
3. Concern for others	5.69	1.18	.61***	.58***	.86				
4. Empathy	5.25	1.22	.67***	.70***	.75***	.88			
5. Social responsibility	5.53	1.12	.70***	.66***	.69***	.71***	.81		
6. Prosocial identity	5.95	1.32	.75***	.62***	.75***	.87***	.77	.93	
7. Agency	4.93	1.39	.24*	.47***	.32*	.57***	.17	.41	.90

*Notes.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Scores on each scale ranged from 1 to 7. Alpha scores for each survey are in the diagonals.

### **Pilot Study 1 Discussion**

The goal of this study was to collect psychometric information on (a) measures that were modified to reduce the number of overall items, and (b) for new measures, which were created to assess constructs for which validated measures had not been created prior to this study. Analyses revealed several items that did not detect variation in scores as strongly as other items, so these were removed from the measures. Results also indicated that the remaining items accurately assessed each prosociality construct. To test these further, each scale's internal consistency and convergence with prosocial behavior were tested in the preliminary analyses of the main study to ensure that they were reliable and were accurately assessing the appropriate constructs. Overall this study suggested that the selected 30 items reliably and accurately assessed various indices of prosociality. The next step was to pilot the activities comprising the intervention.

## CHAPTER 4

### PILOT STUDY 2

The purpose of this study was to evaluate the timing and efficacy of each activity included in the new intervention. If any of the activities did not lead to the intended outcomes, then they would be modified and retested before being implemented in the main study. The hypotheses for this study were:

- (1) Watching the elevating video will induce moral elevation.
- (2) The identity warmup activity will lead people to think about identity-related content such as strengths, values, interests, goals, and gratitude.
- (3) Listing core values will lead people to think about the qualities most important to them.
- (4) Writing about one's best possible self in the future will encourage people to think about their long-term prosocial goals.
- (5) Planning prosocial behavior will inspire people to want to help others.

### Method

#### Participants

Participants ( $N = 63$ ) were recruited from MTurk.com. This sample size was chosen because it would result in approximately 10 people completing each activity, which would allow for a reasonable variety of perspectives (Patton, 2015). The sample did not need to be large enough to detect effects because inferential statistics were not used. Participants ranged in age from 21 to 68 ( $M = 36.71$ ,  $SD = 11.92$ ) and roughly half were male (46%). The majority of the sample was Caucasian (70%) and others were Asian (13%), African American (10%), Hispanic/Latino (5%), Native Hawaiian (1%), or more than one ethnicity (1%).

## Materials

**Elevation video.** To elicit moral elevation, participants were shown a two minute and thirty second video clip demonstrating an act of sportsmanship during a high school softball game. In the clip, a player hit what would have been a home run, but she injured herself while running to first base and could not run the bases. Because her teammates were not allowed to help her, two players from the other team helped the injured girl around the bases. The clip includes words explaining what is happening and footage of the two players carrying the girl around the bases. This clip has demonstrated efficacy in evoking moral elevation in previous work (Lai, Haidt, & Nosek, 2014).

**Identity warmup.** This activity asked people to think about their strengths, interests, people they are grateful for, and flow activities (those that require deep engagement and lead people to lose track of time; Csikszentmihalyi, 1975). Writing prompts included questions such as, “Who do you admire, and why?” and “If you could change anything about the world, what would it be?” Respondents were instructed to write down whatever comes to mind, spending no more than 30 seconds per question. This activity was expected to prime people to think about meaningful content, which, in the final intervention, would guide their prosocial behavior. This activity took an average of three and a half minutes to complete.

**Values identification.** In this activity, people were asked to write down three to five personally meaningful values. They were told to generate their own values or select them from a list of 36 values presented below, which included courage, independence, and discipline. Again, the purpose of this activity was to encourage people to think about things that matter most to them, which could make their subsequent prosocial behaviors more meaningful. This activity took approximately three and a half minutes to complete.



**Best possible selves (BPS).** In this activity, participants imagined themselves in five years in the future, assuming that everything went well, and then write about what that future – what they are like, what they are doing, and activities they are involved in. This procedure replicated BPS interventions that have been used in previous work (Layous, Nelson, & Lyubomirsky, 2013; Sheldon & Lyubomirsky, 2006), but incorporated an additional prompt, which asked people to write about how they hope to make a positive impact on the world. This activity was used to help people integrate their values and goals, which could make their subsequent prosocial behavior more meaningful; and to provoke future thinking, which has been found to inspire prosocial intentions and behavior (Baumsteiger, 2017). This activity took approximately six minutes to complete.

**Helping plan.** In this activity, people were asked to describe how they could do more to help other people each day for the next ten days. These actions could be the same each day or they could be different. They were instructed to write about these actions in as much detail as possible. The goal of this activity was to encourage people to make specific plans for enacting prosocial behavior, which could increase the likelihood that they would perform those actions (Gollwitzer, 1996; Pham & Taylor, 2016). It took people approximately two and a half minutes to complete this activity.

**Control activity A.** This activity asked people to watch a video of a comedian telling jokes about breakfast foods. The video is three minutes and 45 seconds long. I expected that watching this clip would boost people’s moods, but would not increase any other outcomes related to prosociality. Given that positive emotions are linked to prosociality (see Isen, Clark, & Schwartz, 1976 for a review), this condition was included to help disentangle any effects that are simply due to positive emotions.

**Control activity B.** In this activity, people were asked to list the things they did that day in as much detail as possible. This was not expected to have any influence on people's thoughts and behaviors. This condition was used to compare the effects of other activities to a "neutral" task. This took approximately four minutes to complete.

**Activity feedback.** Participants responded to 20 statements about how each activity influenced them. This survey, created for this study, evaluated participants' perceptions of how each activity influenced their thoughts, feelings, and motivation to behave prosocially. Items reflected questions about emotions (e.g., "Completing the activity put me in a better mood"), moral elevation (e.g., "Completing the activity reminded me that there are good people in the world"), social connectedness (e.g., "Completing the activity made me feel more connected to other people"), future thinking (e.g., "Completing the activity got me thinking about the future"), big picture thinking (e.g., "Completing the activity got me thinking about the 'big picture' of my life"), gratitude ("Completing the activity reminded me of all the good things I have in my life"), thinking about strengths and talents ("Completing the activity helped me think about what I am good at"), value identification ("Completing the activity helped me think about what is most important to me"), goals ("Completing the activity helped me think about my goals"), and prosocial intentions ("Completing the activity made me feel inspired to help others"). I also included the item, "Completing the activity did NOT have an impact on me" as an attention check (scores on these items should be inversely related to scores on other items). Each item was rated on a 7-point Likert scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Finally, participants were asked to respond to two open-ended questions: "Please describe how completing this activity influenced your thinking or feelings overall (if at all)." The second

prompt read, “Do you have any recommendations for how I can make this activity more enjoyable or beneficial? If yes, please describe.”

## **Procedure**

A posttest-only experimental design was used to evaluate the effects of each activity. After providing consent, participants were randomly assigned to complete one of the seven activities. A timer was embedded into the survey to evaluate how long it took people to complete each activity. Next, all participants responded to questions about how the activity influenced their thoughts and feelings. Descriptive statistics on responses to these items were compared across groups to evaluate how each activity influenced people’s thoughts, feelings, and behavioral intentions. Mean scores were computed for similar items.

## **Results**

### **Data Screening**

The original sample included 80 people. Prior to analyses, I removed participants who did not complete the assigned activities. This included people who did not write anything for the writing prompts and those who spent less than 30 seconds on the activity pages because none of the activities (especially the videos lasting two or three minutes) could have been carefully completed in that short a time. I also removed people who rated the activities in ways that did not make sense. For example, one respondent rated “strongly agree” with both, “Completing these activities put me in a better mood” and “Completing these activities put me in a worse mood.” These steps resulted in 17 cases being removed. The final sample included 63 participants, with approximately nine people in each group.

### **Activity Effects**

**Elevation video.** People who watched the elevation video reported that they felt warmer, more uplifted, and more inspired ( $M = 6.10$ ) than people who watched the comedy video ( $M = 3.52$ ) or listed daily activities ( $M = 3.76$ ). Qualitative reactions to the activity reflected a similar reaction. For instance, individuals said things such as, “After watching the video I felt more happy and helpful and even hopeful. Just warm and full,” “The video was awesome, it really had an impact. It changed my mood and made me think deeply about the world and its people,” and “I feel so much better having watched that. I feel this lightness in my heart and like the things I was worrying about before are so insignificant in the grand scheme of things.”

**Identity warmup.** Responding to the identity warmup prompts engendered “big picture” thinking in which people reflected on their strengths, values, goals, important relationships, and the things for which they are grateful. They reported feeling inspired to help others and be a better person ( $M = 5.99$ ) more than individuals watching comedy ( $M = 3.11$ ) or listing daily activities ( $M = 4.19$ ). When asked to describe the effects of the activity, people said things such as, “[It] made me feel good about who I am and what I have to be grateful for,” “This made me sit and think about what I really value in my life and what it is I am working towards,” It reaffirmed me of my closest relationships and reminded me of their value,” and “It always helps to stop and take stock in your life and remind yourself of everything you have.”

**Values identification.** Listing their top values encouraged people to think about the things they care about and how they define themselves ( $M = 6.06$ ) more than watching the comedy clip ( $M = 2.89$ ) or listing daily activities ( $M = 3.38$ ). Participants noted that the activity “made me remember what I stand for,” “It made me reflect on what makes me, me,” and “It reminded me that I need to work on my core values and make sure I'm living my life like I want to be.”

**Best possible self.** Completing the best possible self activity led people to reflect on their values, consider their meaningful goals, and feel motivated to pursue them. It also encouraged “big picture” future thinking, and inspired individuals to want to be better people ( $M = 6.11$ ) more than watching comedy ( $M = 2.35$ ) or listing activities ( $M = 4.24$ ). When asked to describe the activity, people reported that “Writing what I wanted for the future helped me realize how lucky I truly am in this life,” and “It made me want to pursue my dreams.”

**Prosocial planning.** Creating a plan for helping others inspired people to want to help others ( $M = 6.00$ ) more than watching the comedy ( $M = 3.33$ ) or listing activities ( $M = 3.50$ ). When asked to describe the influence of the activity, participants reported, “It made me more positive because by thinking about what I could do for others it made me think of everything I have and how blessed my life is,” “It helped me focus for a bit and get out of ‘myself’ and think how I can do things differently for a more positive impact overall,” and “It made me want to set a good example for my kids by being a good person.”

### **Pilot Study 2 Discussion**

Findings from this study indicated that each component of the proposed intervention had the intended effect on people’s thoughts and feelings related to prosociality. Therefore, these activities were retained for the main study.

Although these activities generated the expected results, participants provided several suggestions to further enhance these activities. I considered and ultimately followed each of these suggestions. First, I added a follow-up question to the values identification activity. This question asked respondents to explain why they felt characteristics they identified as “core values” were so important to them. Based on the feedback on the BPS activity, I added the

prompt “who are you with [in the future]?” Finally, I added examples of prosocial behavior to the prosocial planning activity prompt to help people generate ideas.

One key limitation of this study was that—for practical reasons—it excluded several components of the final intervention. First, I did not test the introductory video. Given that this study only asked participants to complete one activity, it would not make sense to ask participants to rate their motivation to participate in the next activities, which was the intended effect of the video. Similarly, I did not include the daily helping behaviors activities because these activities require a significantly greater time commitment than the other activities, and therefore it would not be appropriate to compare effects of those to the shorter activities. Finally, the reflection essay—which asks participants to reflect on their experience completing all the activities—was excluded because participants only completed one activity. Although there are compelling theoretical reasons to believe these activities will enhance engagement and prosocial behavior (e.g., Astin et al., 2000; Lyubomirsky & Layous, 2013), they were not tested separately.

Findings from this study indicated that each activity proffered unique effects. At the same time, these effects may well amplify each other. For example, although prosocial planning was the only activity aimed at increasing prosocial intentions, people who watched the elevating video, completed the identity warmup, and wrote the BPS essay also reported increased prosocial intentions. Therefore, completing each of these activities might increase prosocial intentions more than completing any one of them alone. In the main study, participants completed all activities in a specific order. The next step in this investigation was to test the efficacy of the full intervention.

## CHAPTER 5

### PILOT STUDY 3

The purpose of this work was to pilot the full study. More specifically, this study aimed to gauge how long each component took people to complete, to ensure the surveys and activities ran smoothly (e.g., people could access the online surveys from different web browsers and participants answered survey questions as intended), and to gather qualitative feedback on the experience of completing the activities. Findings were used to determine if anything should be modified before launching the full intervention with a larger sample.

#### Method

##### Participants

The full sample included 26 college students. This size was sufficient for providing general estimates of survey length. Participants' ages ranged from 18 to 32 ( $M = 20$ ), and they were mostly female (88%). The age group (18-32) was similar to the target sample (ages 16-25). Additionally, participants were recruited from college classes, which corresponds to the recruitment strategy used in the main study. Therefore, findings from this study were expected to be useful in estimating how participants in the main study would respond. A subgroup of this sample completed the entire study. This group included 10 participants with similar demographic characteristics to the full sample ( $M_{age} = 21$ , 90% were female).

##### Materials

**Prosocial intervention activities.** The intervention consisted of eight components: (1) Learning the value of prosocial behavior; (2) Watching an elevating video; (3) Responding to questions about one's strengths, interests, important relationships, and what they are grateful for; (4) Identifying one's core values; (5) Imagining one's best possible self in the future; (6) Making

a plan for helping others the next day; (7) Enacting one's plan for helping others and writing daily reflections describing the ways one helped, how it felt, and how the recipients of help reacted each day; and (8) Writing a reflection about the implications of helping others, how those behaviors relate to one's identity and values, and how one plans to help others in the future. The full activities are included in Appendix A.

**Humor (control) activities.** The control group received a modified version of the “three funny things” activity (Wellenzohn, Proyer, & Ruch, 2016). This activity asks people to spend ten minutes each day describing three humorous experiences that occurred that day, and to explain why those experiences were funny. Three additional components were added to this activity to make it match the length and format of the prosociality activities. First, participants watched a video that described the benefits of humor. Second, they completed an activity in which they identified things they found humorous. Finally, after completing the daily reflections (described above) for ten days, participants were asked to write an essay on the ways that humor impacts their lives. In earlier studies, the “three funny things” activity was rated as pleasant and increased people's happiness for up to six months (Wellenzohn, Proyer, & Ruch, 2016). There was no theoretical reason to believe that this intervention (including the “three funny things” and the activities added to mirror the prosocial intervention) would enhance prosocial tendencies or behavior. Furthermore, other studies have found that similar humor-related activities did not engender prosocial intentions or behavior (Bartlett & DeSteno, 2006; Piff, Dietze, Feinberg, Stancato, & Keltner, 2015).

**Surveys.** This study utilized a pretest and a posttest. Although the main study also included a lagged posttest, this was not administered in this study because it was not relevant to



any of the current study aims (e.g. estimating survey completion times, collecting qualitative activity feedback, and testing the technical features of the study).

***Prosocial tendencies.*** The scales described in Pilot Study 1 were used to evaluate aspects of prosociality. These included items assessing prosocial intentions (Baumsteiger & Siegel, 2018), a concern for others (Kahana et al., 2013), social responsibility (adapted from Spreng, McKinnon, Mar, & Levine, 2009), prosocial identity (adapted from Aquino & Reed, 2002), and prosocial agency (created based on recommendations by Bandura, 2006). The prosocial agency scale prompt was modified slightly to focus more specifically on prosocial behavior. The instructions were changed from, “Please rate how confident you are that you can make a positive impact on...,” to the following: “Please rate how confident you are that you (personally) can help...” The full measures are included in Appendix B.

***Prosocial behavior.*** Given that prosocial behavior was the central outcome, it was evaluated in two ways. First, the past prosocial behavior scale (PPBS; Baumsteiger & Siegel, unpublished) described in the first pilot study was used to evaluate general rates of prosocial behavior. Second, I included a direct behavioral measure of prosociality by asking participants to voluntarily answer an additional question for no payment. This question was prefaced with the text, “The next question is completely optional. If you are willing to answer it, then it would help me out with my other research.” The word “optional” was highlighted and bolded. The prompt (describing a life well lived) was followed with a textbox that people could type their responses into. Similar methods have been used in previous work to evaluate prosocial behavior through surveys and yielded a nearly equivalent split between people who did and did not respond (e.g., Baumsteiger, 2017).

**Motivation to participate.** Four items were used to assess people's motivations to participate in the study. Respondents were asked to rate the extent to which they were participating because they wanted to (identified), because they valued and identified with the goals of the study (intrinsic), because their instructor wanted them to do it (external), or because they thought they would feel guilty, anxious, or ashamed if they did not participate (introjected). These items are based on the four dimensions of motivation linked to goal pursuit and attainment (Sheldon, & Elliot, 1999; Sheldon et al., 2004). Each item was rated from 1 (*Strongly disagree*) to 7 (*Strongly agree*). In accordance with previous studies (e.g., Sheldon et al., 2004), I computed a composite core by subtracting the external and introjected scores from the identified and intrinsic scores. The resulting scores signified the extent to which people were intrinsically motivated to participate in the study. Based on existing theory, intrinsic motivation to participate at the onset of an intervention should predict activity engagement, and therefore, should predict the efficacy of the intervention (Layous, Nelson, & Lyubomirsky, 2013). Accordingly, this scale was presented in the pretest only.

**Life satisfaction.** The 5-item Satisfaction with Life Scale (Diener et al., 1985) was used to evaluate a global sense of satisfaction with one's life. This measure asks respondents to indicate their agreement with statements such as, "In most ways my life is close to my ideal" from 1 (*Strongly disagree*) to 7 (*Strongly agree*). It has demonstrated good internal consistency ( $\alpha = .87$ ), test-retest reliability, and convergent validity with other measures of life satisfaction ( $r = .82$ ; Diener et al., 1985).

**Meaning in life.** The Identified Meaning subscale of the Meaning in Life Questionnaire (Steger, Frzier, Oishi, & Kaler, 2006) was used to assess the extent to which people felt like they had identified meaning in their lives. This subscale instructs respondents to rate their agreement

with five items such as, “I understand my life’s meaning” from 1 (*Absolutely untrue*) to 7 (*Absolutely true*). This subscale has demonstrated good internal consistency ( $\alpha = .86$ ) and test-retest reliability ( $r = .70$ ; Steger et al., 2006).

***Optimism.*** The Life Orientation Test Revised (LOT-R; Scheier et al., 1994) was used to assess optimism. This scale asks respondents to rate their agreement with ten statements such as, “Overall, I expect more good things to happen to me than bad” and “In uncertain times, I usually expect the best.” Each item was rated from 1 (*Strongly disagree*) to 7 (*Strongly agree*). This measure has demonstrated good internal consistency ( $\alpha = .78$ ), adequate test-retest reliability ( $ICC = .72$ ; Hirsch, Britton, & Conner, 2010), and predictive validity for health outcomes (Reilley, Geers, Lindsay, Deronde, & Dember, 2005).

***Single-item indices of immediate intervention effects.*** At the posttest, participants were asked to rate the extent to which completing the activities led them to think about the future, think about others, think broadly, experience positive emotions, feel inspired to help others, and recognize the impact of one’s actions on other people. These items were created based on previous research on the situational antecedents of prosocial behavior (e.g., Aknin et al., 2012; Baumsteiger, 2017; Bartlett & DeSteno, 2006; Schnall, Roper, & Fessler, 2010). Each item was rated on a 7-point Likert scale, with responses ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). Respondents were also given a text box and asked to describe, “What, if anything, did you learn about yourself from doing these activities?”

These single-item and open-ended questions enabled me to collect information on multiple constructs—both those that were theorized a priori (e.g., positive emotions) and those that were not theorized previous to data collection (e.g., thinking about other people)—within a small number of items, which likely did not significantly contribute to survey fatigue. However,

interpretations of responses to single-item questions and qualitative data tend to be more susceptible to extraneous influences—such as question wording, participants’ moods, and researcher expectations—than interpretations of quantitative differences on validated measures across groups and time points (Crano, Brewer, & Lac, 2014). Due to this methodological limitation, analyses of these data were regarded as exploratory.

***Intervention fidelity.*** As an index of fidelity, participants were asked to rate how much effort they put into completing the intervention activities (overall) from 1 (*Very little*) to 7 (*Very much*). This item was only included on the posttest survey.

***Personality.*** The 10-item Personality Measure (Gosling, Rentfrow, & Swann, 2003) was used to evaluate participants’ stable characteristics. This scale includes two items for each of the five main dimensions of personality: agreeableness, conscientiousness, openness to experience, extraversion, and neuroticism. Respondents were given a list of qualities such as, “reserved, quite” and “sympathetic, warm” and asked to indicate the extent to which each item describes themselves. Items were rated on a 7-point Likert scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). This measure has demonstrated good test-retest consistency ( $r = .80$ ), convergence with longer, widely-used measures of personality, and convergence with observer ratings of people’s personalities (Gosling, Rentfrow, & Swann, 2003).

***Demographics.*** Participants were asked to report their age, gender, ethnicity, religious affiliation, and political ideology.

***Attention checks.*** One item was included on each survey to gauge whether participants were paying attention. On the pretest, participants were asked, “Please select ‘1’ to indicate that the survey is displayed correctly.” This item was embedded in the prosocial identity measure. On the posttest, participants were asked, “Please select “2” to indicate that the survey is displayed

correctly.” This item was embedded in the measure of concern for others. This strategy aligns with recommendations for assessing data quality (Berinsky, Margolis, & Sances, 2014).

## **Procedure**

College students were invited to participate in the study to earn course credit. People who followed a link to the pretest were asked to provide consent and complete the pretest survey. Next, they were randomly presented with information on how to complete either the prosocial activities or the humor activities. Approximately 40% moved on to the activity portion of the study. Of this group, approximately half ( $n = 6$ ) were randomly assigned to the prosocial group, and the other half ( $n = 4$ ) were assigned to the humor group. In both conditions, participants completed activities online each day for 10 days. After completing the final activity, participants took the posttest survey. Those who completed the entire study received extra credit towards their course grades.

Although participants completed the measures from Pilot Study 1, the sample in this study was too small to enable meaningful interpretations of changes in measure composites from the pretest to the posttest, so these data were not analyzed; the full surveys were only presented for the sake of obtaining estimates of how long they take to complete. Timing data were analyzed to compute the average amount of time it took people to complete each section of the study. The activities were reviewed to evaluate whether people followed instructions and completed each section fully. Quantitative and qualitative reports on the effects of the activities were compared across groups to determine whether the prosociality led to more changes in the way people think about themselves and their relationships to others.

## **Results**

There were no missing data or failed attention checks in the pretest or posttest. Data from all cases were analyzed.

### **Timing**

Based on the website timing information, the median time for taking the pretest was 10 minutes and the median time for taking the posttest was 5 minutes. The median time for the first set of prosociality activities, including the introductory video, elevating video, quick write, values ranking, best possible self, and prosocial planning was 30 minutes. The median time for first set of humor activities, including the introductory video, types of humor video, and writing activity was 23 minutes.

### **Intervention Implementation**

One potential problem emerged with the procedure: many participants (60%) only completed the pretest. Upon inquiring whether teachers had insight into why this happened, it became evident that many students did not download the information that was on the last page of the pretest explaining how to proceed to the activities. However, once in the activities, implementation fidelity was high—all participants completed all sections of the activities. Self-reported engagement indicated that participants exhibited moderate to high levels of engagement with activities ( $M = 5.70$ ,  $SD = 1.42$ ). A review of activities suggested that they were completed fully and accurately. There was only one activity that was completed slightly differently than expected: for the prosocial daily log, participants were instructed to enact one or more behaviors to help others each day. Interestingly, a review of logs revealed that all six participants who completed this activity wrote about one helping behavior each day; there were no cases where someone reported more than one helping behavior within one day.

### **Participant Experiential Data**

Participants' experiences of the activities were evaluated by comparing self-report ratings and qualitative feedback between the experimental and control groups. Analyses of quantitative ratings indicate that both sets of activities tended to put people in good moods (prosocial group  $M = 5.67$ , control group  $M = 6.00$ ), but the prosocial activities were more likely than the humor activities to lead people to think about what mattered most in life ( $M = 6.67$  versus  $4.67$ , respectively), to think about other people ( $M = 6.33$  versus  $4.67$ , respectively), and to feel inspired to help others ( $M = 6.33$  versus  $4.33$ , respectively).

Qualitative descriptions aligned with the mean differences. People in the control group reported that completing the activities influenced the way they view their sense of humor (e.g., "I learned that my sense of humor is a lot more bizarre than I thought it was") or did not have a significant impact on them (e.g., "Nothing really has changed from me doing the activities" and "I don't think I learned anything new"). On the other hand, people from the prosocial group described several changes related to prosociality. For instance, some described how it led them to reflect on their values, identity, and relationships to other people. For example, one participant wrote, "I learned/that I am a very helpful person. I will always try to do something for someone else, or even go out of my way to help someone." Similarly, another person reported, "I learned that helping people is extremely important to me. It matters for my self-esteem and relationships that I give." Others mentioned that it motivated them to do more to help others. As one participant described, "I definitely enjoyed this entire survey and activities. I learned that I have been lacking on my values and prosocial behavior. It helped me realize that I could do better/I can do my part and have a positive effect." Along the same lines, another wrote, "I learned how much I love making someone smile or have a better day. It made me realize how much I would like to make bigger contributions of helping others in my life."

### **Pilot Study 3 Discussion**

Findings from this study provided preliminary quantitative and qualitative data indicating that the intervention effectively fostered prosocial habits. This work also revealed several procedural components that, once modified, could improve the intervention's effectiveness and the interpretability of findings in the main study. First, based on the intervention fidelity analyses, it would be advantageous to provide activity instructions outside of the pretest survey so people do not miss them. Similarly, asking people to complete the daily logs online could improve fidelity—or at least, improve fidelity checks—by providing time stamps for when each activity was completed. In addition, participant feedback indicated that people found it challenging to plan prosocial behavior for the next ten days. To address this issue, I changed the instructions to ask people to plan one day at a time. Finally, it was clear that the instructions for enacting prosocial behavior each day led most people to select *one* behavior rather than *one or more* behaviors. Given that people seemed to have a lot to write about for each individual behavior, I adjusted the instructions so they specified that people should focus on a single behavior each day. These changes were incorporated into the design of the main study.



## **CHAPTER 6**

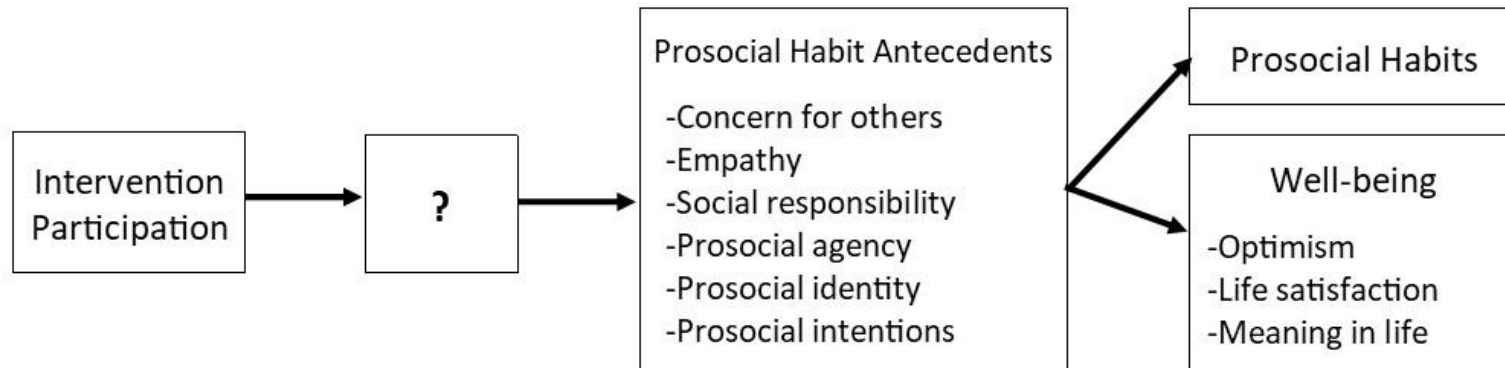
### **MAIN STUDY**

The overarching goal of this investigation was to test the efficacy of an intervention designed to promote habitual prosocial behavior. Findings from the pilot studies were used to refine the measurement tools, intervention activities, and implementation strategies for the main study. The final step was to run the full study with a larger sample of participants. The central research questions were: Does the intervention enhance prosociality? If so, for how long, for whom, and through what mechanisms? The hypotheses and exploratory questions are listed below in greater detail. See Figure 1 for a model of the expected immediate, short-term, and long-term intervention effects.

# PROSOCIAL BEHAVIOR INTERVENTION

Figure 1.

*Hypothesized Model of Intervention Effects*



*Notes.* The box that contains a question mark represents factors that could potentially mediate the effects of intervention participation on prosocial tendencies. One aim of this study was to identify these factors.

## PROSOCIAL BEHAVIOR INTERVENTION

### (1) Main Effects on Prosociality:

- a. In comparison to participants in the control condition, participants in the experimental condition were expected to exhibit significantly larger increases in prosocial tendencies (operationalized as prosocial intentions, prosocial identity, prosocial agency, concern for others, empathy, and social responsibility) from the pretest to the posttest, and to demonstrate higher rates of prosocial behavior (operationalized as completing an additional question for no payment) at the posttest than the control group.
- b. Given that this intervention aimed to change how people habitually interact with their contexts, the effects were expected to persist beyond the conclusion of the intervention. I hypothesized that the experimental group would not exhibit significant decreases in prosocial tendencies between the posttest and the lagged posttest.
- c. Participants who completed the intervention were expected to demonstrate increased prosocial behavior (operationalized through a measure of prosocial behavior across the past month) from the pretest to the lagged posttest. Similarly, participants who completed the intervention would be more likely than people in the control group to behave prosocially (operationalized by completing an additional item for no payment) at the lagged posttest.

### (2) Mediators

- a. Based on the theoretical argument that increased prosocial tendencies facilitate long-term prosocial behavior (Aquino & Reed, 2002; Davis, 2015; De Cremer & Van Lange, 2001; Eisenberg et al., 2002; Penner et al., 1995), I hypothesized that

increases in prosocial tendencies from pretest to posttest would predict increases in prosocial behavior from the pretest to the lagged posttest.

- b. Previous studies suggest several potential antecedents of prosocial behavior, such as positive emotions and future thinking (e.g., Aknin et al., 2012; Baumsteiger, 2017; Bartlett & DeSteno, 2006; Schnall, Roper, & Fessler, 2010). Exploratory analyses were conducted to identify these and other variables that mediated the effects of the intervention on prosocial behavior.

### (3) Moderators

- a. Based on work on self-concordant motivation (Layous & Lyubomirsky, 2013), I hypothesized that motivation to participate in the study would moderate the effects of the intervention on prosociality such that people who were more intrinsically motivated (compared to people who were more extrinsically motivated) would experience larger increases in prosocial tendencies and behavior than people who are less intrinsically motivated to participate.
- b. Similar to the previous point, I hypothesized that intervention fidelity (operationalized by the number of activities completed and the level of engagement with those activities) would moderate the effects of the intervention on prosociality such that people who completed more activities and reported being more engaged in the activities would experience larger increases in prosocial tendencies and would be more likely to behave prosocially than others.
- c. Exploratory analyses were conducted to evaluate whether the intervention was more effective for certain types of people than others. More specifically, I assessed whether individuals' characteristics—such as age, gender, ethnicity,

religious affiliation, political ideology, or personality—moderated the effects of the intervention on prosocial tendencies and behavior.

#### (4) Effects on Well-being

- a. Because previous work indicates that prosocial behavior enhances well-being (e.g., Aknin et al., 2012), I hypothesized that participants who completed the prosocial behavior intervention would exhibit increased life satisfaction, meaning, and optimism between the pretest and lagged posttest.
- b. As an exploratory analysis, I compared the effects of the prosocial intervention on well-being to the effects of the humor intervention, which enhanced participants' self-rated happiness in a prior study (Wellenzohn, Proyer, & Ruch, 2016).

An experiment was conducted to investigate these hypotheses and research questions. The intended procedure was to randomly assign participants into one of two groups (prosocial or control) and compare changes in prosociality and well-being between groups across time. However, there was a data collection error that influenced the way that people were assigned to conditions. This error led to the creation of a third group of people who completed the aspects of the intervention that were expected to be most important for fostering habitual prosociality (daily logs and reflection), but not the introductory activities that were designed to motivate people to be more deeply and meaningfully engaged with the daily activities. Because this third group was theoretically interesting, it was also included in the analyses. This group is referred to from hereon as the “daily behaviors” group. To distinguish the experimental conditions, the group of people who completed all of the prosocial activities are referred to as the “full prosocial” group. The resulting data allow for comparisons based on people who completed the full intervention, the daily logs and reflection alone, or control (humor) activities. Prior to data analyses, it was

hypothesized that the full prosocial group would demonstrate larger intervention effects than the daily behaviors group.

## Method

### Participants

The total sample included 116 high school and college students who, at the time of the study, were living in Southern California. Participants' ages ranged from 16 to 25 ( $M = 21.55$ ,  $SD = 1.93$ ,  $Mode = 21$ ). According to a power analysis conducted through G\*Power (Faul, Erdfelder, Lang, & Buchner, 2007), this sample size was large enough to provide sufficient power for detecting moderate effects between three groups. The majority of the sample was female (77%), while 22% were male and 2% identified as non-binary. In terms of ethnicity, the sample was largely Hispanic/Latino (52%), while others were Asian (17%), Caucasian (11%), mixed ethnicity (11%), African American (3%), Middle Eastern (3%), Pacific Islander (2%), and Native American (<1%). A large percentage of participants identified as Christian (69%), and others described themselves as Agnostic (16%), Buddhist (5%), Atheist (4%), Jewish (2%), Muslim (2%), or other (1%). As a whole, the sample was slightly politically liberal (response options ranged from 1-conservative to 7-liberal;  $M = 5.03$ ,  $SD = 1.64$ ). These breakdowns of religious and political affiliations mirror the general U.S. population, which is approximately 71% Christian, 20% Agnostic, 1% Buddhist, 3% Atheist, 2% Jewish, 1% Muslim, and 2% other (PEW Research Center, 2014); and young U.S. adults (ages 19-29), who, as a group, are slightly politically liberal (approximately 33% rate themselves as conservative, 17% as moderate, and 46% as liberal; Gallup, 2014).

Participants were randomly assigned to three groups (full prosocial,  $n = 43$ ; daily behaviors,  $n = 41$ ; or control,  $n = 32$ ) based on the order in which they signed up for the study.

The groups differed significantly on four measures: in comparison to the full prosocial and daily behaviors groups, the control group was significantly higher on past prosocial behavior,  $F(2, 113) = 7.32, p < .01, \eta^2 = .12$ ; concern for others,  $F(2, 113) = 3.14, p < .05, \eta^2 = .07$ ; empathy,  $F(2, 113) = 3.90, p < .05, \eta^2 = .07$ ; and meaning in life,  $F(2, 113) = 4.19, p < .05, \eta^2 = .07$ . The groups were not significantly different on the remaining characteristics and measures, including age,  $F(2, 113) = .13, p = .88$ ; gender,  $\chi^2(4) = 2.26, p = .69$ ; ethnicity  $\chi^2(14) = 12.12, p = .60$ ; religious affiliation  $\chi^2(12) = 15.06, p = .24$ ; political affiliation,  $F(2, 112) = .50, p = .61$ ; the importance of politics,  $F(2, 112) = .07, p = .93$ ; prosocial intentions,  $F(2, 113) = 1.59, p = .21$ ; prosocial identity,  $F(2, 113) = 1.53, p = .22$ ; prosocial agency,  $F(2, 113) = 1.13, p = .33$ ; social responsibility,  $F(2, 113) = 1.14, p = .32$ ; optimism,  $F(2, 113) = .80, p = .45$ ; life satisfaction,  $F(2, 113) = 2.69, p = .07$ ; self-concordant motivation,  $F(2, 113) = .27, p = .76$ ; agreeableness,  $F(2, 113) = 2.17, p = .12$ ; conscientiousness,  $F(2, 113) = .08, p = .93$ ; extraversion,  $F(2, 113) = 1.44, p = .24$ ; openness,  $F(2, 113) = 1.45, p = .24$ ; and neuroticism,  $F(2, 113) = .17, p = .84$ .

## **Materials**

**Interventions.** The prosocial intervention and humor intervention described in Pilot Study 3 were presented again. All components were identical to the previous study, with the exception that people in the prosocial condition were asked to plan their behaviors each day rather than all at once at the beginning (to make this task easier).

### **Survey.**

**Pretest.** The pretest used in this study was nearly identical to the pretest from Pilot Study 3. It included the same measures of prosocial tendencies, prosocial behavior, well-being, personality, self-concordant motivation, an attention check, and demographics. There was only one modification made: instructions for the past prosocial behavior scale (PPBS; Baumsteiger &

Siegel, unpublished) were modified so respondents were instructed to rate how often they exhibited each behavior in the past month instead of in the past (generally). This allowed for comparisons of prosocial behavior between the month immediately before and immediately after the intervention.

**Posttest.** The posttest for this study was identical to the posttest described in Pilot Study 3. It included measures of prosocial tendencies, single-item indices of immediate intervention effects, open-ended question about the intervention effects, a direct measure of prosocial behavior, and an attention check.

**Lagged posttest.** The lagged posttest survey included many of the same scales that appeared on the pretest and posttest, including measures of prosocial tendencies, prosocial behavior, well-being, and an attention check. It also included two new items. First, similar to the posttest, participants were asked to voluntarily complete an additional question for no payment. The writing prompt was, “who are you closest to and why?” This question was presented in the same way as the posttest question: the instructions highlighted that this item was optional, and participants were presented with a textbox where they could write their responses. Again, this served as a direct measure of prosocial behavior. Second, participants were asked to respond to the prompt, “In your opinion, do you believe that these activities had a lasting impact on you? (It’s okay if not!) Please explain.” Similar to the open-ended question on the posttest survey, this question was included to provide insight into participants’ perceptions of the intervention and the underlying processes that explain intervention effects.

## **Procedure**

A between-subjects, pretest-posttest experimental design was employed. Instructors posted an advertisement for the study on their course websites. Students signed up for the study



by emailing me. I responded by sending an email with study instructions, their condition, and links to the corresponding surveys and activities, which were all hosted on Qualtrics.com. The first person was assigned to the experimental condition, the second person to the control condition, the third person to the experimental condition, and so on. Participants who followed the first link were directed to a pretest survey where they provided consent and then completed measures of prosocial tendencies, prosocial behavior, well-being, motivation, personality, and demographics. All measures were presented on a 7-point Likert scale. Next, participants completed the first set of activities, which included watching an introductory video about prosociality or humor and writing about their values or sense of humor. Participants in the experimental group were then instructed to behave prosocially each day for ten days and write a daily log describing these behaviors. Meanwhile, participants in the control group were asked to complete a daily log about humorous activities each day for ten days. On the final day, participants wrote a reflection on prosocial behavior or humor. As mentioned above, there was an error with the survey links that led to a third group of people (the “daily behaviors group”) to receive links to the first set of humor activities (the two introductory videos and description of one’s own humor style) and then links to the second part of the prosocial activities (writing daily logs about helping behavior and reflecting on those behaviors at the end of the ten days).

All activities were submitted electronically. After the last activity, participants completed the posttest survey, which included measures of prosocial tendencies and behavior, questions about the experience of completing the activities, and a fidelity check. Finally, participants were asked to complete a third survey one month later. This survey included the measures of prosocial tendencies, prosocial behavior, and well-being. Students who completed all activities and all three surveys were given a unique code to submit to their instructor to receive course credit. An

alternative assignment was offered for each class to ensure students did not feel compelled to participate. Time estimates from Pilot Study 2 were shared with instructors to help them determine comparable alternative assignments and the amount of course credit to award to people who completed the study.

Prosocial activity responses were reviewed to determine activity fidelity, which encompassed how many activities each participant completed and the extent to which they followed instructions. More specifically, video “completion” was determined by evaluating how much time participants spent on the webpage containing the videos. The introductory video was 2 minutes and 20 seconds long; participants who spent at least 140 seconds on the page were marked as completing the activity. Similarly, the elevation video was 2 minutes and 27 seconds; participants who spent at least 147 seconds on the page were marked as completing the activity. The remaining activities included various writing prompts. Responses were scored as incomplete if there was no response, a nonsense response (e.g., “jjjjj”), or if the response did not match the instructions—for example, when asked to describe what they did to help someone that day, one person wrote, “I didn’t do anything to help anyone today.” Scores did *not* vary based on the type of answer provided, such as listing “kindness” versus “happiness” as one’s top value, or writing that helping others had a positive, neutral, or negative influence on others. Thus, the activities that were scored according to how well participants followed instructions rather than completing the activities in any specific way. I evaluated points based on each activity (e.g., watching a video) or, for multi-part activities, the extent to which they did multiple aspects (e.g., list values and explain why those are important). More extensive activities (e.g., the best possible self essay) were weighted more heavily than briefer, less effortful activities (e.g., watching the introductory video). Points were assigned as follows: introductory video (1 point), elevation

video (1 point), quick write (2 points), values description (2 points), best possible self essay (2 points), prosocial plan (1 point), daily logs (2 points each for 10 logs), and reflection (1 point). These were combined to compute total fidelity scores ranging from 0 to 30, with more points indicating greater fidelity.

### **Data Analyses**

After cleaning the data and computing composites, I conducted mixed model ANOVA to determine whether there were statistically significant differences in prosocial tendencies (prosocial intentions, concern for others, empathy, agency, identity, and social responsibility) across time (pretest, posttest, and lagged posttest) and condition (full prosocial, daily behaviors, and control). I also used mixed model ANOVA to assess whether there were statistically significant changes in prosocial behavior and well-being (optimism, life satisfaction, and meaning in life) across time (pretest and lagged posttest) and condition (full prosocial, daily behaviors, and control). Mauchly's test was used to evaluate the sphericity assumption. When this assumption was violated, the Greenhouse-Geisser correction was reported. Estimated marginal means were used to determine the nature of interactions. I also used chi-square analyses to test whether there were significant differences in the posttest-only measures of prosocial behavior across conditions.

The second set of analyses focused on assessing how various factors moderated the intervention effects. I used mixed model ANOVA to test interactions between each moderating variable and (a) pretest-posttest changes in prosocial tendencies, and (b) pretest-lagged posttest changes in prosocial behavior. Factors that were evaluated as potential moderations included self-concordant motivation to participate, self-reported effort, activity fidelity, age, gender,

religious affiliation, political ideology, strength of political interest, strength of religiosity, agreeableness, conscientiousness, extraversion, openness to experience, and neuroticism.

Next, I conducted mediation analyses. As a preliminary step, I used independent *t*-tests to compare how participants from each condition experienced immediate effects, such as thinking about other people. A Bonferroni correction of  $\alpha = .008$  ( $\alpha = .05$  divided by 6 tests) was applied to the exploratory analyses to safeguard against potential familywise alpha inflation. I then conducted regression analyses using PROCESS (Hayes, 2012) to determine whether any of the immediate effects mediated pretest-posttest changes in prosocial tendencies or pretest-lagged posttest changes in prosocial behavior. Indirect effects were tested using a bootstrap estimation approach with 1000 samples. I followed the same procedure to evaluate the extent to which pretest-posttest changes in prosocial tendencies mediated pretest-lagged posttest changes in prosocial behavior.

The final set of analyses focused on interpreting qualitative responses to gain a deeper understanding of how the intervention influenced prosocial tendencies and behavior. I used conventional content coding, which refers to a systematic process of drawing meaning from written text (Hsieh & Shannon, 2005). This approach allows for themes to emerge from the data. Therefore, it was ideal for the current analyses, which were exploratory. This process included three main steps. First, I reviewed the raw data and identified themes that emerged across responses. Next, I created codes for each theme and classified data according to the codes, refining the codes as needed. Finally, I reported the codes and descriptive information (e.g., direct quotations) to convey the essence of people's responses.

## **Results**

### **Preliminary Analyses**

The first step of data analyses required matching cases and cleaning the data. I matched surveys across the pretest, posttest, and lagged posttest based on participants' identification numbers. For 13 participants, identification numbers did not correspond across all time points, so instead they were matched based on their emails and IP addresses, with their conditions, instructor's names, and the survey entry dates used to verify that these entries came from the same people. There were originally 352 cases with data from the pretest, posttest, and/or lagged posttest. Of these cases, 118 did not have at least a pretest and a posttest, and therefore, were not included in the analyses. More specifically, 86 cases only had pretest entries, 23 only had posttest entries, 1 only had a lagged posttest, 4 participants had a pretest and lagged posttest, and 4 people who had a posttest and lagged posttest. There were no missing data within the surveys themselves. Another 98 cases were removed because they were blank entries (89), had at least one failed attention check (8), or completed all three surveys on the same day (1). An additional 20 cases were filtered out because participants were over age 25. The remaining sample included 116 people with a pretest and posttest (full prosocial,  $n = 43$ ; daily behaviors,  $n = 41$ ; or control,  $n = 32$ ) and 100 who completed all surveys. All participants with the relevant time points were included in each analysis to ensure optimal statistical power.

After cases were matched across time points, I created composite scores for each measure. Self-reported effort was not significantly related to fidelity as rated by the researcher ( $r = .05, p = .68$ ) so scores on these measures were not combined for analyses. I then evaluated whether the data satisfied assumptions required for the main analyses. Scores on each measure were relatively normally distributed and there were no apparent outliers (see Table 3 for more information on the distributions of scores). Model assumptions of homogeneity of covariance and linearity were satisfactory. Correlations among baseline scores on prosociality measures,

well-being measures, and demographics are displayed in Table 4. There was variability in the dichotomous outcome variables, including answering additional questions for no payment on the posttest (46% helped, 54% did not) and on the lagged posttest (66% helped, 34% did not).

PROSOCIAL BEHAVIOR INTERVENTION

Table 3.

*Distributions of Main Study Baseline Scores*

	<i>M</i>	<i>SD</i>	<b>Skewness</b>	<b>Kurtosis</b>
Past prosocial behavior	4.16	1.46	-.32	-.76
Prosocial intentions	5.92	.92	-1.06	.96
Prosocial identity	6.35	.86	-1.36	1.04
Concern for others	5.62	.94	-.64	.14
Empathy	5.51	.92	-.54	-.11
Social responsibility	6.20	.94	-1.72	.38
Agency	4.77	1.35	-.49	-.01
Life satisfaction	4.32	1.19	-.19	-.21
Meaning	5.29	1.21	-.48	-.16
Optimism	4.40	1.10	-.36	.47
Self-concordant motivation	1.57	1.95	-.01	-.18
Agreeableness	4.62	1.21	-.25	.74
Conscientiousness	5.60	1.17	-.77	.17
Extraversion	3.94	1.58	.16	-.94
Openness	5.32	1.13	-.50	-.09
Neuroticism	3.47	1.43	.17	-.65
Importance of politics	4.01	1.77	-.06	-.83

*Notes.* Self-concordant motivation composites scores ranged from -2 to 2. Composites for all other measures ranged from 1 to 7.

Table 4.

*Main Study Correlation Matrix*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Prosocial intentions	.75																
2. Prosocial identity	.51***	.82															
3. Prosocial agency	.46***	.35***	.88														
4. Concern for others	.55***	.52***	.37***	.69													
5. Social responsibility	.39***	.56***	.28**	.37***	.76												
6. Empathy	.57***	.46***	.22*	.63***	.46***	.72											
7. Past prosocial behavior	.51***	.45***	.48***	.44***	.41***	.46***	.74										
8. Life satisfaction	.25**	.22*	.40***	.16	.08	.02	.26**	.86									
9. Meaning	.38***	.37***	.55***	.36***	.33***	.36***	.42***	.26**	.65								
10. Optimism	.18	.23*	.48***	.19*	.14	.09	.17	.53***	.28**	.79							
11. Self-concordant motivation	.22*	.17	.27**	.19*	.28**	.11	.27**	.09	.21*	.23*	--						
12. Conscientiousness	.23*	.19*	.25**	.14	.04	.02	.15	.29**	.19*	.37***	.23*	--					
13. Agreeableness	.25**	.21*	.21*	.28**	.12	.26**	.27**	.12	.18*	.18	.10	.06	--				
14. Extraversion	.20*	.34***	.50***	.35***	.22*	.23*	.27**	.41***	.30**	.26**	.18	.02	-.01	--			
15. Openness	.20*	.28**	.27**	.19*	.23*	.12	.16	.21*	.32**	.24**	.21*	.15	.26**	.28**	--		
16. Neuroticism	-.29**	-.26**	-.38***	-.17	-.18	.07	-.24*	-.39***	-.23*	-.42***	-.23*	-.41***	-.22*	-.29**	-.30**	--	
17. Age	-.13	-.11	-.08	-.19*	-.08	-.25**	-.09	.07	-.13	.20*	.08	.10	-.03	-.08	-.07	-.18	--
18. Political strength	.26**	.27**	.18*	.25**	.39***	.29**	.18*	-.06	.29**	.06	.16	-.02	.11	.02	.29**	-.06	.18

*Notes.* \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Correlations are based on baseline scores. Alpha coefficients for each measure are listed in the diagonals for measure composites.



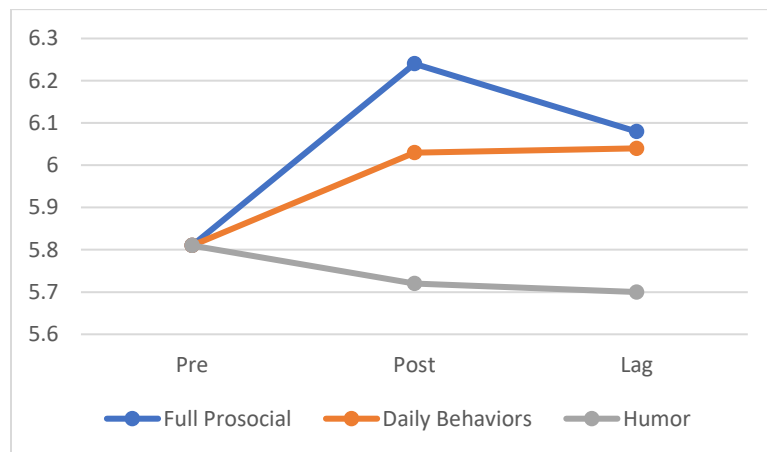
**Pretest-Posttest Changes in Prosocial Tendencies**

In this section, I present the results of Mixed Model ANOVA, which were conducted to evaluate how pretest-posttest changes in prosocial tendencies differed across conditions. Visual depictions of these changes in mean scores are displayed in Figures 2-7. In these figures, scores were adjusted to account for baseline differences, and the Y-axis scales were magnified to display differences more clearly.

**Prosocial intentions.** Within the full prosocial group, prosocial intentions increased significantly between the pretest and posttest ( $M_{change} = .41, p < .01, d = .41$ ). This change was not significantly larger than pretest-posttest changes in prosocial intentions in the other conditions,  $F(4, 170) = 1.83, p = .13$ . There were no other significant changes in prosocial intentions across any time points and conditions (see Figure 2).

Figure 2.

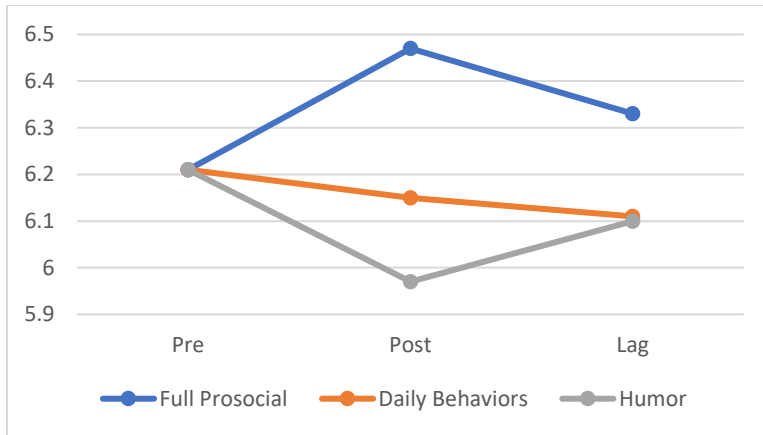
*Changes in Prosocial Intentions across Conditions and Time Points*



**Prosocial identity.** There was a significant interaction across time and conditions,  $F(4, 168) = 2.51, p < .05$ . Within the full prosocial group, prosocial identity increased significantly between the pretest and posttest ( $M_{change} = .32, p < .01, d = .35$ ). There were no other significant changes in prosocial identity across any time points and conditions (see Figure 3).

Figure 3.

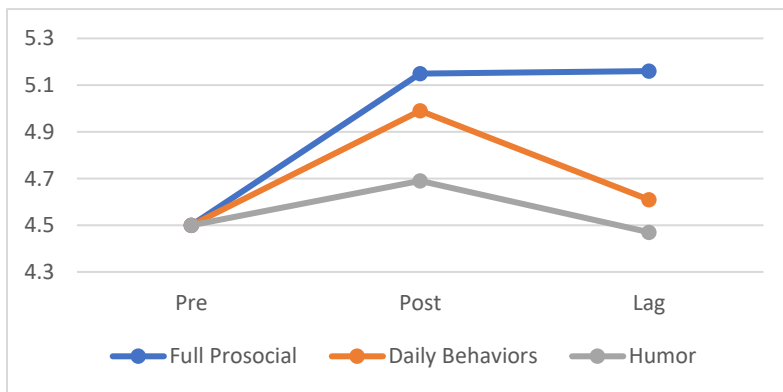
*Changes in Prosocial Identity across Conditions and Time Points*



**Prosocial agency.** There was not a significant interaction across time and conditions,  $F(3.45, 136.38) = 2.21, p = .08$ . Within the full prosocial group, prosocial agency increased significantly between the pretest and posttest ( $M_{change} = .72, p < .001, d = .56$ ). Within the behavior only group, increases in prosocial agency between the pretest and posttest were trending towards statistical significance ( $M_{change} = .37, p = .06, d = .15$ ). There were no other significant changes in prosocial agency between any time points and conditions (see Figure 4).

Figure 4.

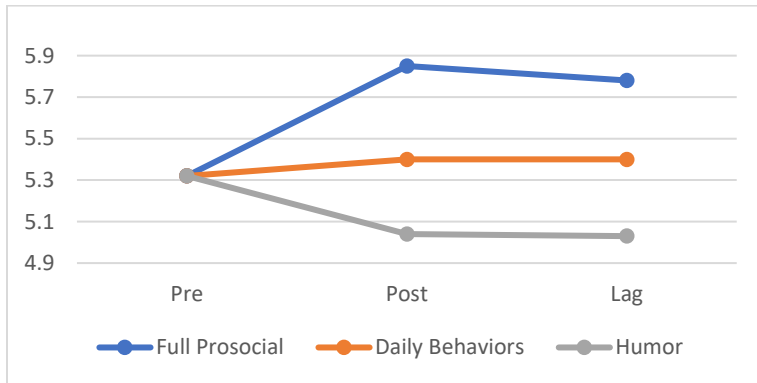
*Changes in Prosocial Agency across Conditions and Time Points*



**Concern for others.** There was a significant interaction across time and conditions,  $F(4, 170) = 3.90, p < .01$ . Within the full prosocial group, concern for others increased significantly between the pretest and posttest ( $M_{change} = .56, p < .01, d = .57$ ). There were no other significant changes in concern for others between any time points and conditions (see Figure 5).

Figure 5.

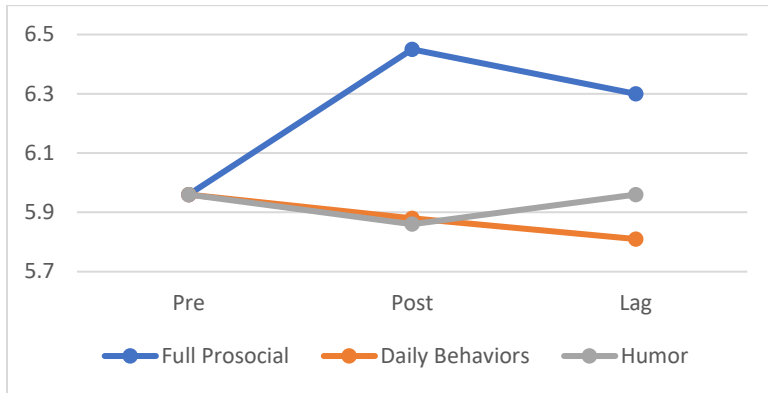
*Changes in Concern for Others across Conditions and Time Points*



**Social responsibility.** The interaction across time and conditions was trending towards significance,  $F(3.69, 158.55) = 2.38, p = .06$ . Within the full prosocial group, social responsibility increased significantly between the pretest and posttest ( $M_{change} = .43, p < .01, d = .49$ ). There were no other significant changes in social responsibility between any time points and conditions (see Figure 6).

Figure 6.

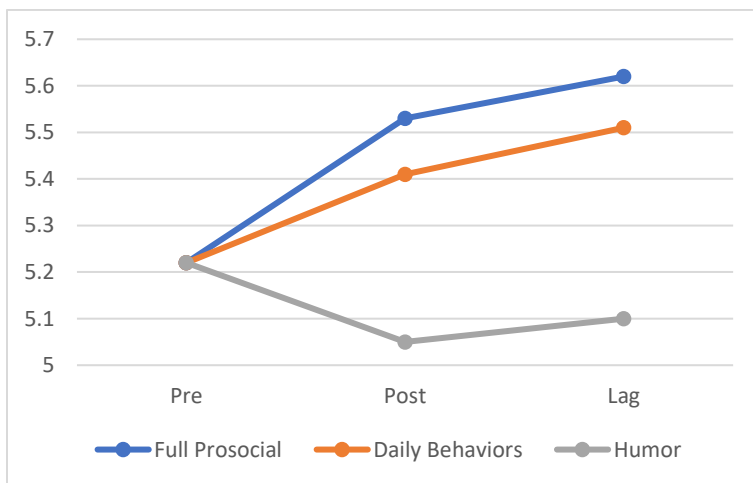
*Changes in Social Responsibility across Conditions and Time Points*



**Empathy.** There was a significant interaction across time and conditions,  $F(4, 160) = 2.61, p < .05$ . Within the full prosocial group, empathy increased significantly between the pretest and posttest ( $M_{change} = .31, p < .01, d = .31$ ). Within the daily behaviors group, increases in empathy were trending towards significance ( $M_{change} = .25, p = .06, d = .22$ ). There were no other significant changes in empathy between any time points and conditions (see Figure 7).

Figure 7.

*Changes in Empathy across Conditions and Time Points*

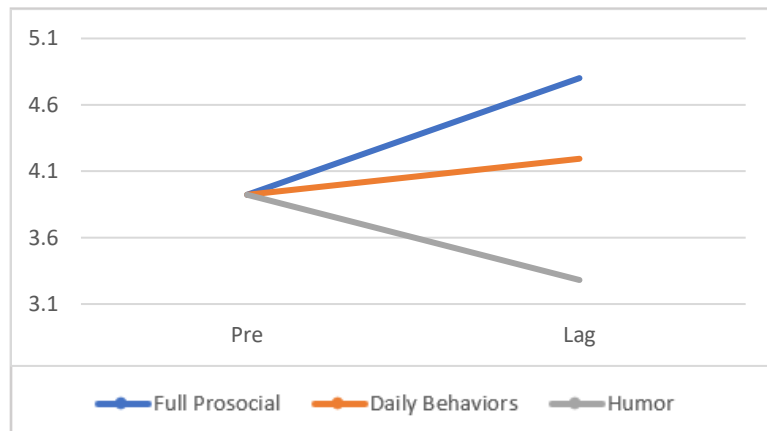


## Pretest-Lagged Posttest Changes in Prosocial Behavior

The main analyses focused on testing changes in prosocial behavior the month before the pretest and the month between the posttest and lagged posttest across conditions. Results of mixed model ANOVA indicated that there was a significant interaction across time and conditions,  $F(2, 96) = 8.36, p < .01$ . Within the full prosocial group, past prosocial behavior increased significantly between the pretest and lagged posttest ( $M_{change} = .88, p < .001, d = .53$ ). In the control group, past prosocial behavior decreased significantly between the pretest and lagged posttest ( $M_{change} = -.64, p < .05, d = .15$ ). There were no significant changes in past prosocial behavior within the daily behaviors condition. These changes are depicted visually (adjusted to account for baseline differences) in Figure 8.

Figure 8.

*Changes in Prosocial Behavior across Conditions and Time Points*



## Behavioral Measures of Prosocial Behavior

Next, I compared rates of prosocial behavior across groups. There was a slightly higher percentage of people in the full prosocial group (53.49%) who completed the additional question for no payment at the posttest than those in the daily behaviors group (39.02%) or the control group (43.75%), but these differences were not statistically significant,  $\chi^2(2) = 1.84, p < .40$ ,

Cramer's  $V = .13$ . On the other hand, a significantly higher percentage of people in the full prosocial group (79.49%) answered an additional question for no payment at the lagged posttest than people in the daily behaviors (51.35%) or control group (65.22%),  $\chi^2(2) = 6.67, p < .05$ , Cramer's  $V = .26$ . Post-hoc comparisons indicated that there was a significant difference between the full prosocial group and the control group.

### **Mediation of Intervention Effects**

**Mediation of immediate effects on short-term effects.** The first question related to mediation was: which factors explain the short-term effects of the intervention on prosocial tendencies? To answer this question, I examined the immediate effects of the intervention across groups, and then tested how these effects related to short-term changes in prosocial tendencies.

There were some similarities in immediate effects of the different activities. For instance, participants in all groups agreed that completing the activities put them in a good mood (full prosocial group  $M = 6.21, SD = .98$ ; daily behaviors group  $M = 6.11, SD = .94$ ; control group  $M = 5.61, SD = .98$ ). This statement was endorsed slightly more by those in the full prosocial group, although this difference was only trending towards significance,  $F(2, 101) = 2.97, p = .06$ . Similarly, participants across groups agreed that the activities made them think about what matters most in life (full prosocial group  $M = 6.08, SD = 1.18$ ; daily behaviors group  $M = 5.81, SD = 1.18$ ; control group  $M = 5.32, SD = 1.91$ ), and group differences were not significant,  $F(2, 101) = 2.36, p = .10$ .

On the other hand, there were several significant differences in how participants responded to the activities. Specifically, people in the full prosocial group were more likely than those in the daily behaviors or control groups to indicate that participating in the intervention led them to think about other people (full prosocial  $M = 6.61, SD = .64$ ; daily behaviors  $M = 6.16,$

$SD = 1.04$ ; control  $M = 5.54$ ,  $SD = 1.60$ ),  $F(2, 101) = 6.38$ ,  $p < .002$ ; led them to think about the future (full prosocial  $M = 6.00$ ,  $SD = 1.32$ ; daily behaviors  $M = 5.54$ ,  $SD = 1.43$ ; control  $M = 4.68$ ,  $SD = 1.95$ ),  $F(2, 101) = 6.00$ ,  $p < .002$ ; made them think about how their actions influence others (full prosocial  $M = 6.41$ ,  $SD = .85$ ; daily behaviors  $M = 6.14$ ,  $SD = .86$ ; control  $M = 5.07$ ,  $SD = 1.84$ ),  $F(2, 101) = 10.80$ ,  $p < .001$ ; and, made them feel inspired to help other people (full prosocial  $M = 6.23$ ,  $SD = .87$ ; daily behaviors  $M = 6.22$ ,  $SD = .85$ ; control  $M = 4.25$ ,  $SD = 2.10$ ),  $F(2, 101) = 23.08$ ,  $p < .001$ .

Based on regression analyses, none of the immediate effects of the intervention were significantly related to changes in prosocial tendencies or behavior (indirect effects range from .01 to .03). Additional potential mediators of changes from the pretest to the posttest were identified in the qualitative analyses.

**How short-term effects mediated long-term effects.** The second question concerning mediation was whether pretest-posttest changes in prosocial tendencies (prosocial intentions, identity, agency, empathy, concern for others, and social responsibility) mediated long-term changes in prosocial behavior. The indirect effect of condition on pretest-lagged posttest changes in prosocial behavior was not significant in all models (standardized indirect effects ranged from .01 to .03). This indicates that none of the short-term changes in prosocial tendencies mediated long-term changes in prosocial behavior.

### **Moderators of Intervention Effects**

Factors related to participants' demographic characteristics, personalities, and intervention fidelity were tested as potentially moderating the effects of the intervention on pretest-posttest changes in prosocial tendencies and pretest-lagged posttest changes in prosocial

behavior. Ethnicity was not considered because there were not sufficient numbers of people of each ethnicity to allow for meaningful comparisons.

There was a significant interaction between condition and self-concordant motivation in predicting pretest-posttest changes in identity,  $F(22, 58) = 1.88, p < .05$ . To interpret this interaction, self-concordant motivation scores were dichotomized based on whether they were above or below the mean (1.57). The resulting estimated marginal means did not reveal the nature of the interaction, so scores were further divided into low (lowest through 1), moderate (1 through 3), or high motivation (3 through 6). Based on the resulting estimated marginal means, self-concordant motivation did not significantly predict identity changes for the control group (low  $M = -.29$ , moderate  $M = -.30$ , high  $M = -.29$ ). In the full prosocial group, the group that had moderate self-concordant motivation exhibited the largest increases in prosocial identity (low  $M = .27$ , moderate  $M = .40$ , high  $M = .17$ ). In the daily behaviors group, higher motivation was associated with larger increases in prosocial identity (low  $M = -.09$ , moderate  $M = .04$ , high  $M = .57$ ).

There was an interaction between condition and effort in predicting pretest-posttest changes in social responsibility that was trending towards significance,  $F(10,83) = 1.89, p = .06$ . To interpret this interaction, effort scores were dichotomized as “low” or “high” based on whether they were above or below the mean (5.06). The resulting estimated means indicate that, in the full prosocial group, higher effort predicted larger increases in social responsibility (high group  $M_{change} = .51$ , low group  $M_{change} = .32$ ). Similarly, people in the control condition who exhibited low effort tended to exhibit decreased social responsibility ( $M_{change} = -.29$ ), whereas those who put forth more effort tended to show no changes ( $M_{change} = .06$ ). In contrast, people in the daily behaviors group who put forth low effort tended to exhibit increased social



responsibility ( $M_{change} = .27$ ) whereas those who devoted greater effort tended to show decreased social responsibility ( $M_{change} = -.56$ ).

To summarize, the intervention was more efficacious in fostering certain indices of prosocial habits for participants who were more intrinsically motivated to participate in the intervention and for people who put more effort into completing the activities. There were no other significant moderation effects based on intervention fidelity, self-concordant motivation, effort, age, gender; religious affiliation, political affiliation, agreeableness, conscientiousness, openness to experience, extraversion, or neuroticism.

### **Pretest-Lagged Posttest Changes in Well-being**

**Optimism.** The interaction across time and conditions was trending towards significance,  $F(2, 96) = 3.65, p = .06$ . Within the full prosocial group, optimism increased significantly between the pretest and lagged posttest ( $M_{change} = .29, p < .05, d = .17$ ). There were no other significant changes in optimism between any time points and conditions.

**Life satisfaction.** There was not a significant interaction between time and condition,  $F(2, 96) = .51, p = .61$ . Within the full prosocial group, there was an increase in life satisfaction between the pretest and posttest that was trending towards significance ( $M_{change} = .36, p = .06, d = .27$ ). The daily behaviors group also exhibited an increase in life satisfaction between the pretest and posttest that was trending towards significance ( $M_{change} = .37, p = .06, d = .27$ ). There were no significant changes in life satisfaction in the control group.

**Meaning in life.** There was not a significant interaction between time and condition,  $F(2, 96) = 1.50, p = .23$ . There also were no significant changes in meaning in life across any conditions or time points.

### **Qualitative Responses**

This section contains findings from participants' responses to open-ended questions about how completing the prosocial activities influenced their thoughts, feelings, and behaviors. First, I describe findings on a question from the posttest survey, which asked about short-term effects of the intervention. Next, I present findings on a question from the lagged posttest survey, which inquired about the long-term effects of the intervention. Overall these responses were highly variable. Each of the themes below appeared in entries from five to twenty participants (approximately 12-47% of the sample).

**Posttest responses: Short-term effects.** Some of the experiences people described as resulting from the activities were expected, and were, in fact, measured directly as main outcomes of the intervention. These included attitudes toward prosocial behavior ("I learned that it is important to help people around us"), agency ("I am actually capable of helping more"); prosocial identity ("I have become aware of the type of person I am"; "helping others is a part of my personality"; "I enjoyed helping because it gives me a sense of who I am"; "I learned that I am much more generous and compassionate than I thought I was"), and increased prosocial behavior and behavioral intentions ("I found myself looking for things to help someone else in and I'll keep that going" "I learned that I really enjoy helping people and I really want to make an impact on others in a positive way").

Participants also wrote about some of the outcomes that were measured in the exploratory single-item questions, often providing additional detail on these effects. For instance, people reported that behaving prosocially evoked positive thoughts and feelings ("I learned that helping others can uplift my mood as well as theirs"; "I am in a much more positive mood when I put others first"; "I learned how easily my mood changes when helping others"; "I learned that helping others does not mean you are not helping yourself in the process. I learned that I liked

helping others”); helped them feel more connected to other people ( “I realized that I still have friends and family who still love me through thick and thin, and that there are still some people who are worth keeping close to” “I realized how much other people help me”); and allowed them to realize how much their behavior influences others (“I became more aware of how my actions affect others”; “doing a small act of kindness has a big impact”; “I learned that the smallest things I do can make a HUGE impact for someone else”; “doing good goes a long way”; “I learned that others are affected by what you do and say a lot more than what I usually notice”).

There were also several themes that were not expected, and thus, were not measured explicitly in quantitative questions. First, several people noted that they realized that behaving prosocially is easier than they expected (“It doesn’t take that long to do something nice for someone”; “I actually HAVE the time to do nice things for others; actions like these do not require an unreasonable amount of time or money”; “It’s not as intimidating as I thought it was going to be”). People also reported that they learned new things about the effects of prosocial behavior. For some, it leads them to avoid or assuage negative feelings (“I would feel bad if I did not help another person”). For others, these behaviors contributed to a sense of purpose: (“I learned that I care about the world and what I do matters to someone else; then I have a purpose”; “It really made me think about what I am meant to do with my life and how I can shape my future to incorporate helping others”).

**Lagged posttest responses: Long-term effects.** Descriptions of the long-term effects of the intervention echoed many of the themes that appeared in the descriptions of short-term effects, but framed these themes in more stable, global terms. For example, people again wrote about how the activities helped them recognize the value of prosocial behavior, both for themselves and for others (“It taught me a lesson that it is important to always be helpful to

others and/putting them before yourself”; “the activities changed my perspective on my attitude towards doing things for others. I now see that these things align with my values and I strive to do more good things for others”; “I realized that life is too short to be selfish”; “It has opened my eyes in a sense to realize/if we make the best of a day by living it with kindness we can turn any day around”; “I realized that by helping people in need, I also help myself because I feel great when I helped someone”). Similarly, completing the activities also helped people realize that they are capable of helping others more than they initially thought (“Keeping a record of the activities I completed really helped me to see the impact I made on the lives of others”; “Now I am more aware of how the smallest thing can help and impact others”).

People also relayed that completing the activities made them more aware of other people’s needs (“I was more aware of what others were experiencing”; “The activities/made me be more aware of the people around me and consider that they might need help”; “The activities listed allow you to see from someone else’s perspective”; “I learned to listen carefully to what people had to say. I did not realize that there are always little issues that come up you can assist people with”; “It served as another reminder to be aware of other people’s lives and to understand that they are going through the same thing we are”). More generally, people reported that completing the activities motivated them to want to behave prosocially (“I am more encouraged to help others”; “It gave me the urge to help people more”; “I am more appreciative of one’s help and I want to help out more”; “It made me want to be more helpful to those in need and have more compassion towards others”).

Another theme emerged that was unique to the lagged posttest: several participants reported that they continued to enact prosocial behavior after the intervention concluded. Some people even said that, through participating in this intervention, prosocial behavior became a

daily habit: (“I started helping people without realizing it”; “I found myself still offering to help others after I had already completed the daily logs/it’s almost a natural reaction”; “[after completing the study] I always had helping others in the back of my head”; “I found myself helping people without even realizing it because it’s become a habit”).

Overall, many participants reported a lasting change in how they see themselves and their relationship to others; paid more attention to other people’s needs; were more likely to help others in the past month; and, expressed a desire to continue to behave prosocially in the future. None of these themes appeared in the open-ended responses from the control condition.

### **Discussion**

The results of this study support hypotheses that participating in the intervention led to increased prosocial tendencies (e.g., empathy, prosocial identity) and prosocial behavior, and that these differences persisted across the next month (H1). There was evidence that these changes were brought about, at least in part, through the process of reflecting on one’s daily behavior, how it influenced other people, and how that compared to people’s values and goals for influencing others. These reflections helped individuals realize their capacities for helping others, which then predicted subsequent helping behaviors. Additionally, enacting daily prosocial behaviors led many people to experience positive thoughts and feelings, which then strengthened their intentions to help others in the future (H2). Findings also indicated that this intervention was more efficacious for some people than others (H3). For example, within the experimental groups, people who reported moderate to high levels of self-concordant motivation to participate tended to exhibit larger increases in prosocial identity. Finally, participating in the intervention led to increases in some indices of well-being one month later (H4). The

implications of these findings, study limitations, and future directions of this research are discussed in greater detail in the general discussion (Chapter 7).

## CHAPTER 7

### GENERAL DISCUSSION

The purpose of this work was to develop and test the efficacy of a new intervention in fostering prosocial habits among late adolescents and young adults. After conducting three pilot studies to refine the measures and intervention, an experiment was launched to evaluate the efficacy of the intervention, to determine for whom the intervention was most effective, and to explore potential mechanisms of intervention effects. In this section, I highlight the key findings from this study, explain how they build on prior work, and discuss their theoretical and practical implications. Next, I discuss study limitations and offer suggestions for extending this research. I conclude by highlighting the a few of the principle takeaways of this investigation.

#### Key Findings

##### **The Intervention Increased Prosociality**

The headline finding from this work is that the 11-day intervention successfully cultivated prosocial attitudes, goals, and behaviors. This finding was verified through the triangulation of quantitative and qualitative data as well as self-report and behavioral measures. More specifically, the experimental group exhibited increased self-reported prosocial tendencies and rates of prosocial behavior after completing the intervention; they were more likely to behave prosocially (helping the researcher by answering additional questions) one month after completing the intervention; and, people in the experimental group spontaneously reported that participating in the intervention led them to make prosocial behavior a habit. All changes within the intervention groups were compared against a control group that completed activities similar in format and dosages, and that were also presented as well-being activities. This procedure helped confirm that these findings were not due to placebo, testing, historical, or maturation

effects. Taken together, this study provides compelling evidence that the intervention successfully fostered prosocial behavior.

Another important finding was the group differences one month later. Indeed, all increases in prosocial tendencies endured from the posttest to the lagged posttest. Furthermore, the full prosocial group was more likely than the other groups to exhibit prosocial behavior at the lagged posttest. Supporting these findings, most participants reported that completing the intervention had a lasting impact on the way they think about themselves and others, and on their daily behaviors aimed at helping others. These data indicate that the short-term changes were not due to fleeting, immediate reactions. Rather, the intervention appears to have led to enduring changes in people's prosocial habits.

This work extends the existing literature in several important ways. First, although elements of the intervention had previously demonstrated efficacy in fostering aspects of prosocial tendencies (e.g., Astin et al., 2000), this study is the first to test their combined effects. This study also contributes information about how the intervention influences a variety of qualities related to prosocial behavior—such as prosocial identity—that have not been tested previously. Additionally, evaluating multiple activities and outcomes within the same study allows for comparisons across these factors. For example, although prosocial identity increased significantly as a result of the intervention, participants tended to exhibit larger increases in other outcomes, such as agency and prosocial intentions. This could indicate that the intervention more effectively targeted other outcomes. On the other hand, it is also likely that the way people define themselves tends to be more stable than the other qualities tested.

Another contribution of this work is that it provides insight into the unique effects of different intervention components. Namely, people who only completed the second part of the



prosocial intervention—engaging in prosocial behavior each day for ten days and reflecting on those behaviors—exhibited increases in prosocial outcomes, but these changes were not statistically significant. Participants who completed the full intervention were also more likely than those who only completed the prosocial behaviors and reflection to report that the activities helped them think about how their actions influence others and made them feel inspired to help others. It is likely that the introductory activities were critical because they helped participants understand why the intervention would be valuable to them, motivated them to want to help others, and primed them to consider their values, goals, and relationships, which led them to engage in the daily prosocial behaviors that were more personally meaningful. This notion is supported through by the Pilot Study 2 findings, which indicated that the introductory activity led people to feel open, to reflect on their values and goals, and to feel inspired to help other people. They are also supported through people’s reflections on the daily prosocial behavior. For instance, many participants in the full prosocial group wrote about how enacting prosocial behavior helped them live out the values that they wrote about at the beginning of the study. To summarize, the current data indicate that the introductory components of the intervention were integral to instigating changes in people’s prosocial attitudes and behaviors.

While the effects of the intervention appeared to be mostly positive, it is also important to note its potential negative effects. An examination of the daily prosocial behavior logs revealed that some people reportedly felt nervous or awkward helping others, especially strangers. Some people also said they felt annoyed if the person who they helped did not express gratitude. Similar findings emerged in a study that asked people to express gratitude or recall a kind act. Results showed that these tasks often arouse feelings of awkwardness or embarrassment (Layous, Sweeny, Armenta, Na, Choi, & Lyubomirsky, 2017). Given that helping others

involves conveying one's concern for others, which requires some level of emotional vulnerability, it makes sense that these behaviors could evoke discomfort in some situations. In addition, at least one individual did not appear to benefit from the intervention. When asked whether completing the prosocial activities influenced him, this person wrote, "No they didn't. I don't get a warm fuzzy feeling helping others." Although he increased in prosocial behavior scores from the pretest (1.25) to the lagged posttest (1.75; scores ranged from 1 to 7), he exhibited decreases in other indices of prosociality (e.g., concern for others, social responsibility) from the pretest to the posttest. A follow-up examination of this individual revealed that he was at least one standard deviation lower than average on all baseline prosociality measures, self-concordant motivation to participate in the study, and agreeableness. This could indicate that this person was resistant to participating in the intervention, and therefore did not fully engage in the activities. It could also suggest that this intervention is not effective for people who exhibit particularly low baseline levels of prosociality. Although this participant was an outlier in terms of how he responded to the intervention, his response was valuable in that it represents how others could react. Further research could clarify the reasons for potential non-responders.

Another interesting finding that emerged from this study was that the control group decreased significantly in rates of prosocial behavior before and after completing the humor intervention. Given that reflecting on humorous events has been used as a neutral task in previous prosociality research (Bartlett & DeSteno, 2006; Piff, Dietze, Feinberg, Stancato, & Keltner, 2015), it was surprising that these activities appeared to have a *negative* influence on prosocial behavior. On the other hand, the literature indicates that some humor focuses on mocking oneself or others which, in turn, is negatively related to prosocial behavior (Falanga, De Caroli, & Sagone, 2014). Therefore, asking people to reflect on humor could have led people

with “mean-spirited” humor to be *less* prosocial. This is a useful finding to consider in comparing effects of each intervention, and for understanding the relationship between humor and prosocial behavior.

In evaluating the implications of this intervention, it is important to note that the daily prosocial behavior component bears a strong resemblance to the random acts of kindness intervention (RAK), which has demonstrated efficacy in enhancing self-reported well-being (Lyubomirsky, Tkach, & Sheldon, 2004). Prosocial behavior is slightly broader than kindness (e.g., acting friendly, generously, warmly) because it includes behaviors that are not directed towards a specific recipient (e.g., donating clothes to charity). Nonetheless, many kind acts are also prosocial; both terms describe behaviors that are intended to benefit others. Indeed, the terms “kindness” and “prosocial behavior” are often used interchangeably (e.g., Layous, Nelson, Kurtz, & Lyubomirsky, 2016). Furthermore, the instructions for the daily logs were very similar to the RAK intervention, which instructs participants to perform behaviors that benefit others such as donating blood or helping a friend with a paper. Thus, the behavioral components of these activities are nearly identical. On the other hand, the current intervention contains several additional components—such as identifying one’s values behavior engaging in the behaviors and reflecting on the effects of the behaviors—that are crucial for fostering long-term changes in prosocial behavior. In sum, the current intervention encompasses the RAK intervention, but also includes additional elements that specifically target qualities such as agency and identity that facilitate prosocial habits.

### **Intervention Implementation**

A second useful set of findings from this study emerged from the moderation analyses, which provided information about the conditions under which the intervention was most

effective. In line with the hypotheses, there was evidence that buy-in was important. More specifically, within the experimental groups, moderate to high intrinsic motivation to participate in the study was associated with larger increases in prosocial identity from the pretest to the posttest. Along similar lines, there was an interaction between condition and effort that was trending towards significance. More specifically, within the full prosocial group, people who put more effort into completing the intervention exhibited larger changes in social responsibility from the pretest to the posttest. It makes sense that people who were more interested in the study would devote more effort to completing the activities, and that putting more effort into activities would lead to larger effects. On the other hand, motivation, effort, and fidelity did not moderate other changes in prosocial tendencies and behaviors. It is possible that this reflects measurement errors. For instance, participants might have completed some activities (such as daily logs) offline, or they might have been dishonest about the effort that they put into completing the activities. Alternatively, it is possible that these factors only influenced certain intervention effects.

In addition to reflecting on factors that significantly moderated the intervention effects, it is also useful to consider factors that were not related to the effects. For instance, age did not moderate changes in prosocial tendencies or behavior; participating in the intervention led to increases in characteristics such as prosocial identity regardless of whether participants were 16- or 25-years-old. In interpreting findings related to developmental processes, it is essential to note the context—this sample was drawn from a population that is relatively urban and industrialized, and many of these people have access to higher education. It is possible that people embedded in different cultural, regional, historical, or socio-economic contexts may respond differently to the intervention if they are further along in identity development and the assumption of adult roles

(e.g., Côté, 2006). Nonetheless, the current data indicate that, at least in this type of context, prosocial attitudes and behaviors continue to evolve during late adolescence and early adulthood.

To summarize, the findings that motivation and effort moderated intervention effects supports the person-activity fit model (Lyubomirsky & Layous, 2013) and offers insight into which specific factors are relevant for prosocial behavior interventions. At the same time, there were very few factors that moderated the intervention effects, and the differences that were detected were relatively small. It is possible that some of these factors do influence intervention effects, but that these patterns were not detected in these analyses. Indeed, statisticians have noted that it is difficult to detect moderation outside of strong inverse linear relationships between conditions (e.g., McClelland & Judd, 1993). Nonetheless, if these factors truly do not moderate the effects, then this would signify that the intervention could be effective for many types of people, including individuals of different genders, religious beliefs, and political ideologies; and, for people who are more or less extraverted, agreeable, open to experience, conscientious, and neurotic. Additional research could further explore how individual and contextual factors influence intervention effects.

### **Insight into Prosocial Habit Formation**

Information on the meditators and outcomes of this intervention help shed light on the more general process of prosocial habits formation. First, findings from this intervention indicate that prosocial tendencies and behavior are, in fact, malleable: there were substantive changes in prosocial measure scores before and after completing the measure, and these changes were significantly larger than those exhibited in a control group. Additionally, there were significant differences in prosocial behavior across conditions. Although there likely is stability in prosocial tendencies in behavior, the current findings demonstrate that these qualities can be changed.

This study also generated experiential and qualitative data that offer insight into the specific processes involved in prosocial habit formation. One of the clearest findings was the variance in responses: as mentioned above, even the most prominent themes were only reported by approximately 12-47% of participants in the experimental condition. This shows that there was diversity in people's experiences, or at least in what they chose to describe. Next, many of the findings supported that participating in the intervention increased the hypothesized antecedents of prosocial habits. For instance, one of the most consistent themes in the qualitative data was that helping others led people to realize they are capable of making a difference in other people's lives, that their actions have a much larger impact than they expected, and that executing these behaviors was less difficult than they believed. Combined with previous studies that had similar findings (Caprara & Steca, 2005; Penner et al., 1995), this indicates that one of the most critical mechanisms of fostering prosocial habits is to help people understand the relative inputs and outputs involved in behaving prosocially. This sentiment also points towards a potential barrier to prosocial behavior: people may not behave prosocially—at least, at times—because they believe doing so is too difficult or unlikely to have much impact. This attitude change could represent another reason why short-term prosocial behavior facilitates prosocial habits.

A second prominent theme from the qualitative data was that prosocial behavior evoked positive feelings. For example, on the daily logs, the most frequently cited outcomes of prosocial behavior for the helper were positive feelings or shifting into a better mood. In terms of specific positive emotions, many people also described experiencing a sense of pride after helping others. This is consistent with findings from an experiential study in which parents reported feeling proud after helping their children (Nakamura, 2013). These data support the notion that prosocial

behavior engenders positive emotions, which in turn, elicits subsequent prosocial behaviors (Aknin, Dunn, & Norton, 2012; Layous, Nelson, Kurtz & Lyubomirsky, 2016).

Along with positive feelings, completing the intervention also elicited positive cognitions. For instance, several people reported that helping others and reflecting on those behaviors helped them cultivate a more positive view of themselves as caring, helpful people. This finding aligns with evidence from a recent study that found that prosocial behavior led to greater feelings of self-worth, which then facilitated subsequent prosocial behavior (Klein, 2017). Similarly, the prosocial intervention led many participants to consider what really matters in life and to think more about their relationships with other people, which predicted a heightened a sense of meaning. This reflects another finding from the study of parents mentioned above, which indicated that helping one's children contributed to one's sense of meaning (Nakamura, 2013). These findings suggest that positive thoughts (e.g., a sense of meaning and self-worth) are also important for reinforcing prosocial behaviors.

Despite the insight gained from qualitative data, analyses on the quantitative data did not support the notion that short-term changes in prosocial tendencies predicted long-term changes in prosocial behavior. This is surprising in light of the existing literature, which indicates that prosocial intentions, identity, agency, a concern for others, empathy, and social responsibility facilitate prosocial behavior (e.g., Aquino & Reed, 2002; Davis, 2015; Steele et al., 2008). The most likely explanation is that the analyses were under-powered; given that the number of parameters included in these models, there would need to be a larger sample size to detect small to moderate effects. Another potential explanation is that the measurements were limited such that they assessed prosocial behaviors that were relatively small in scope (e.g., comforting a friend, answer an extra survey question for no payment) and did not gauge behaviors that require

greater effort and/or sacrifice (e.g., mentoring, volunteering for a charitable organization, signing up to be an organ donor). It is possible that changes in qualities such as prosocial identity would predict changes in these more extensive behaviors, whereas smaller, more everyday behaviors depend more heavily on one's habits. Future work could help verify whether these factors play a role in prosocial habit formation, or whether they are only influential for specific acts.

Taken together, this work indicates that one of the most effective strategies for fostering prosocial habits is to encourage people to engage in short-term prosocial behavior. However, several additional steps are essential for habit formation. First, conveying the value of prosocial behavior and inducing moral elevation can help people feel inspired to help others. Next, asking people to consider what matters most to them in terms of their values, goals, and relationships is likely to lead people to engage in prosocial behaviors that are more meaningful to them. Third, as found in previous research (e.g., Astin et al., 2000), it is also important to reflect on these behaviors. This step likely supports the processes of realizing one's ability to help others and more fully appreciate the relationship between prosocial behavior and positive thoughts and feelings.

### **Prosocial Behavior and Well-being**

A secondary outcome of this intervention was individual well-being. The present data lend partial support to the hypothesis that completing a prosocial intervention increases well-being. The strongest finding was that the full prosocial group exhibited significant increases in optimism from the pretest to the lagged posttest. Given that the control group—which did not exhibit significant increases in optimism—wrote about positive content each day, the difference between groups indicates that the changes in optimism extend beyond the effects of simply focusing on good things. Rather, these increases might have resulted, at least in part, from the



process of thinking about one's best qualities and future goals, which have been shown to enhance optimism (Shapira & Mongrain, 2010). This boost in optimism could also reflect people's realizations that they are more capable of helping others than they previously believed, which was reported in the open-ended descriptions of experiences.

An additional finding related to well-being was that participants who completed the prosocial intervention—either the full intervention or daily behavior only—exhibited increased life satisfaction from the pretest to the lagged posttest. However, although these changes were in the hypothesized directions and were larger than changes exhibited by the control group, increases were relatively small ( $M_{change} = .36$  and  $.37$ , respectively) and were only trending towards statistical significance ( $p$  values =  $.06$ ). Additionally, there were no significant changes in meaning. Given ample previous evidence that prosocial behavior contributes to life satisfaction (e.g., Caprara & Steca, 2005; Kahana et al., 2013; Pashak & Laughter, 2012) and meaning (e.g., Auhagen & Holub, 2006; Shek, Ma, & Cheung, 1994), it is surprising these relationships were not stronger. One possible explanation is that there were stronger effects on well-being immediately following the intervention, but these faded across the following month. This would follow a common trend in the positive psychology literature: the effects of discrete interventions—such as expressing gratitude and writing about one's signature strengths—often diminish or disappear by one month later (e.g., Bolier et al., 2013; Seligman et al., 2005). This issue could be clarified by replicating the study with a larger sample and measuring life satisfaction and meaning at the posttest as well as the other intervening time points.

### **Applications**

In addition to contributing to the literature, this work yields valuable information for practitioners. Namely, this research reveals a concrete set of strategies for fostering enduring

changes in prosocial behavior. Given that prosocial behavior has widespread benefits for individuals and groups (e.g., Kahana et al., 2013; Siegel et al., 2010; Whillans et al., 2016), there are likely to be many parties interested in utilizing this intervention. Furthermore, because the intervention is relatively brief and does not require excessive resources, there are numerous contexts where it could be implemented. For instance, educators could offer intervention in high school and college classrooms. The intervention could be presented as a special topic or could be integrated into existing lessons such as those on writing, health, civics, and positive psychology. Similarly, the intervention could be offered as tasks that individuals take home and complete on their own. It could also be distributed by school psychologists, after-school programs, youth groups, and other community organizations, as well as through online platforms that young people access regularly.

Along with disseminating these specific materials, an optimal final goal is to integrate the key elements of the intervention—such as learning about the benefits of prosocial behavior, reflecting on one’s values, and being encouraged to enact behavior in one’s daily life—into existing institutions such as schools and community programs. Continuing to pay attention to how different individuals respond to these activities could provide additional insight into how practitioners could tailor these experiences to be most effective for different people across a variety of backgrounds. Together, these efforts could help foster prosocial habits among as many people as possible.

### **Limitations**

Findings generated by this study should be interpreted in light of several limitations. One such limitation is that the prosocial intervention includes several components, and some of these (e.g., the elevation video and best possible self essay) were tested in combination rather than

individually. This limits our ability to identify the precise element that evoked each change in prosociality. The present hypothesis is that effects were due to the combined influence of the activities: the introductory activities explained the value of prosocial behavior to get participant buy-in, inspired people to want to help others, and led them to consider their core values, goals, and concerns. This motivated people to engage in daily prosocial behaviors that were meaningful to them, which, in turn, led them to reflect deeply on their identity and behavior. This hypothesis was supported by the Pilot Study 2 data, which indicated that each of the introductory activities (except the introductory video, which was not tested) engendered unique effects. More specifically, watching the elevating video led people to feel more open and inspired to help others; completing the identify warmup led people to think about their strengths, values, goals, and relationships; describing their values led people to think deeply about what kind of people they want to be and feel motivated to behave in ways that exemplify those values; writing about one's best possible future self led people to reflect on what they hope to accomplish and feel motivated to pursue their goals; and, writing about how they could help others in their daily lives led people to shift their focus towards other people's needs and feel inspired to execute those actions. Furthermore, in the main study, the full prosocial group exhibited stronger increases in prosocial tendencies and behavior than the daily behaviors group. This suggests that the introductory activities enhanced engagement in the subsequent activities. Nonetheless, testing additional iterations of the intervention could contribute further insight into the effects of each component.

A second limitation is that, while the aim was to change long-term patterns of prosocial behavior, this outcome was only measured up to one month after the intervention. This time frame was selected as a starting point because it was more feasible to maintain a high response

rate for one month than it would be for a longer time, and because it resembled time frames used in studies of positive interventions that have similar dosages (e.g., Bolier, Haverman, Westerhof, Riper, Smit, & Bohlmeijer, 2013; Wellenzohn, Proyer, & Ruch, 2016). Given that the current data are promising, additional work could be done to test whether the intervention effects persist across multiple months or years. Toward this goal, participants who completed the lagged posttest were asked if they would be willing to complete additional follow-up surveys. Approximately 52% of participants indicated that they would and provided their contact information. Therefore, this information may be acquired in the future.

A third limitation is that selection effects could have influenced findings. Many students who were invited to participate in the study did not do so; participation was voluntary. Additionally, all students were given an alternative assignment that they could complete instead of the study to obtain extra credit in their course. This procedure may have led to the recruitment of participants who were eager to try out new activities or motivated to help the researcher. On the one hand, given that intrinsic motivation to participate moderated the efficacy of the intervention, having people who were relatively high on intrinsic motivation could have inflated the effects. On the other hand, if participants who entered this study had higher levels of baseline prosociality than the average person, then they might have led to ceiling effects, which could have dampened effect sizes. Theoretically, it might have been advantageous to force an entire group to participate. Unfortunately, this would be ethically questionable, and therefore this limitation was unavoidable. Nonetheless, it should be taken into account when interpreting the results.

A final noteworthy limitation is that a portion of the analyses—including analyses of qualitative data and assessments of participant fidelity—involved some level of subjectivity.

Therefore, it is possible that my beliefs and expectations about the findings influenced my interpretations. Similarly, while I assessed whether participants wrote about prosocial behaviors each day for ten days, I did not take steps to verify those behaviors. This was because doing so would require a great deal of effort and resources, and because I believed that people would be likely to do these behaviors. Given the substantial differences across people who did or did not report that they engaged in the daily behaviors, it seems likely that people actually performed them. Yet, it is possible that participants fabricated their reports of helping.

### **Future Directions**

Findings from this investigation illuminate several directions for future research. These include refining the intervention, testing its generalizability, and more systematically evaluating factors that explain how experiences such as reflecting on one's values and taking steps to help others support the development of prosocial habits.

One important task for extending this research is to determine the most essential features of the intervention. Although the qualitative feedback and activity responses did not point to any specific activities as not working well, it is possible that not every piece of the intervention was necessary, or the most effective way to reach that goal. Future studies could test each intervention component individually to identify which components most effectively cultivate prosociality. For example, there could be a video that would more effectively evoke elevation. A similar issue is the dosage; as prior studies indicate, determining the correct dosage for an intervention is critical to maximizing its efficacy (e.g., Lyubomirsky & Layous, 2013). Accordingly, it would be useful to examine whether the time frame for the daily logs (ten days) is optimal, or whether completing these acts more or less frequently and for more or fewer days would lead to stronger effects. Along similar lines, it is possible that variations in the

implementation could enhance the efficacy of the intervention. For instance, completing the daily logs via pen-and-pencil rather than through an online platform might be advantageous because it could allow people to review what they wrote on previous days and help them process the implications more deeply. Pursuing each of these questions could help refine the intervention, thereby maximizing its efficacy.

A second promising direction for extending this research is to investigate the extent to which findings generalize beyond the current sample. For instance, it would be valuable to examine whether this intervention could foster prosocial habits among younger or older individuals. While this intervention was designed to target 16- to 25-year-olds, it is likely that it would have similar effects for mature 14- and 15-year-olds or people in their mid-to-late twenties who are still in the midst of identity exploration. At the same time, given that contextual influences such as history, culture, and communities can deeply influence the way people view themselves and their relationships to others (e.g., Jensen, 2011; Wenner & Randall, 2017), it is possible that this intervention may work differently based on people's contexts. It would also be useful to evaluate the efficacy of the intervention for people of different cultures, socio-economic statuses, and social classes to determine whether the effects extend across diverse individuals.

Finally, the factors identified in the current exploratory analyses—such as pride and awareness of others' needs—could be tested more explicitly through experimental studies. This could shed further insight into the processes through which prosocial habits develop, which in turn could inform broader efforts to engender prosocial habits. It could also help to elucidate the mechanisms underlying other aspects of moral development, such as empathy and moral identity.

## **Conclusion**

This investigation generated several new insights into prosocial habits and how they can be promoted. First, it is possible to change prosocial attitudes, intentions, and behaviors, and this can be done within a relatively brief time span (11 days). Second, the process of forming and maintaining prosocial habits are complex. Although this work identifies potential mechanisms of the effects and some of the conditions under which those effects occur, there is much to be learned. Finally, the most important step for fostering prosocial habits is to encourage people to start performing these behaviors. However, it is also critical to tether these behaviors to existing values and to ask people to reflect on their implications—both for themselves and for others. These steps can be used to encourage people to become more active in helping others.

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## APPENDIX A

### Prosocial Behavior Intervention Activities

#### **Introductory Video**

This video defines prosocial behavior, describes some of its benefits, and explains the purpose of the subsequent activities. The link can be viewed at <https://youtu.be/8x79-yXmYDY>.

#### **Elevation Video**

This video portrays softball players helping an injured player on the opposing team during a game. This video can be viewed at <https://www.youtube.com/watch?v=ODqjUqW3c0U>.

#### **Identity Warmup**

Answer the following set of questions quickly. Do not think too much about spelling or grammar, just jot down your first thoughts. Try not to spend more than 30 seconds on each question.

1. What people, things, or activities make you smile or feel content?
2. What are you good at? (strengths, talents)
3. What kind of activities do you find so absorbing that you lose track of time?
4. What things are you most grateful for and why?
5. Who in your life helps you and how?
6. Who do you admire and why?
7. Who do you feel closest to and why?
8. If you could change something about the world, what would it be?

#### **Values Identification Activity**

Core values are qualities or principles that are most important to a person. Write down 3-6 of your core values. You can either generate your own or select values from the list below.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Why are these things so important to you?

#### **Best possible self activity**

Imagine yourself in the future, 5 years from now. Everything has gone as well as you could have hoped. Describe:

- What you are like
  - What you are like
  - What you are doing
  - Who you are with
  - What you are known for
  - How you are practicing your core values in your daily life
- \*\*\*What kind of impact you have on the people around you and the world in general

## **Prosocial Planning**

The final activity involves finding ways to help other people each day for ten days. To help you prepare, please think about one way that you could make a positive impact on other people **tomorrow**. Note:

- You can choose to perform a large action, like volunteering for a charity, or do something smaller, like helping someone with a chore (see below for examples).
- You can do the same action and help the same person/people each day, or you can mix it up – it's up to you.
- You might find it useful to create a reminder. For example: When I unplug my phone in the morning, I will send a kind text message to my friend.

What will you do to help someone **tomorrow**?

*Examples of prosocial behavior (feel free to use):*

- Do a chore for someone without being asked
- Stand up for someone who is being picked on
- Donate your old books or clothes to charity
- Cook a meal for someone
- Offer to help someone carry heavy equipment, groceries, etc.
- Volunteer in the community
- Help out with tasks at school or home
- Share resources (food, money, books, etc.)
- Comfort a friend
- Create a gift for someone
- Spend extra time with someone who is lonely
- Let someone go in front of you in a line
- Donate blood
- Write a thank you card to your teacher
- Give someone a complement
- Provide help spontaneously whenever someone needs it

## **Daily Log**

What did you do today to help other people?

How did you feel during/after you did that?

How do you think that actions impacted others?

What do you plan on doing tomorrow to help other people?

## **Reflection Activity**

Think back on the things you did to help other people across the past ten days. In your own words, write a reflection on your experience answering the following questions:

- a) Based on your daily notes, how did you and others tend to react when you did helpful things?
- b) How does what you did across the past 10 days relate to your identity and values?
- c) How do you plan to make a positive impact on other people going forward?

## Appendix B

### Modified Prosociality Measures

#### Concern for Others

Please rate how much you disagree or agree with each statement from 1 (Strongly disagree) to 7 (Strongly agree).

1. I come first and should not have to care for others.
2. In this day and age, it doesn't make sense to help out someone in trouble.
3. I enjoy doing things for others.
4. I try to help others, even if they do not help me.

#### Empathy

Please rate how much you disagree or agree with each statement from 1 (Strongly disagree) to 7 (Strongly agree).

1. I find that I am "in tune" with other people's moods.
2. It upsets me to see someone suffering.
3. I enjoy making other people feel better.
4. I feel a strong urge to help when I see someone who is upset.
5. Other people's misfortunes do not disturb me a great deal.

#### Social Responsibility

Please rate how much you disagree or agree with each statement from 1 (Strongly disagree) to 7 (Strongly agree).

1. Young people have an important role to play in making the world a better place.
2. It's important for people to know what's going on in the world.
3. People should help one another without expecting to get paid or rewarded for it.

#### Prosocial Identity

Consider these characteristics: *Caring, Compassionate, Friendly, Generous, Helpful, Kind*

Please rate how much you disagree or agree with each statement from 1 (Strongly disagree) to 7 (Strongly agree).

1. It would make me feel good to have these characteristics
2. Having these characteristics is an important part of who I am.

#### Prosocial Agency

From 1 (Very unconfident) to 7 (Very confident), please rate how confident you are that you (personally) can help...

1. Your family members
2. Your friends
3. People at your school/workplace
4. People in your community
5. The world

### **Past Prosocial Behavior**

Please indicate how often you have performed each behavior (when you had an opportunity) in the past month from 1 (Never) to 7 (Always).

1. Comforted someone I knew after they experienced a hardship
2. Helped a stranger find something they lost, like their key or a pet
3. Helped care for a sick friend or relative
4. Assisted a stranger with a small task (e.g., helped carry groceries or watched their things while they used the restroom)

### **Prosocial Behavior Intentions**

Imagine that you encounter the following opportunities to help others. Please indicate how willing you would be to perform each behavior from 1 (Definitely would NOT do this) to 7 (Definitely WOULD do this).

1. Comfort someone I know after they experience a hardship
2. Assist a stranger with a small task (e.g. watch their things while they use the restroom)
3. Do a task/chore for my friend, family member, colleague, etc.
4. Help a stranger find something they lost, like a piece of jewelry or a pet