Looking forward to helping: The effects of prospection on prosocial intentions and behavior

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Abstract
Three experiments were conducted to further examine how prospection (i.e., thinking about the future) fosters prosociality. In Study 1 (n = 238), participants who wrote about the future expressed significantly stronger prosocial intentions than people who wrote about the past. In a similar study (n = 87), participants who wrote about the future were significantly more likely to behave prosocially than those who wrote about the past. In Study 3 (n = 203), mediational analyses revealed that prospection and optimism each predicted positive affect, which then predicted stronger prosocial intentions. These findings extend previous work by demonstrating that prospection enhances general prosocial intentions, that this effect extends to prosocial behavior, and that the effect is partially mediated by positive affect.

1 | INTRODUCTION

Emerging evidence suggests that prospection—thinking about the future—can promote prosocial intentions (Gaesser & Schacter, 2014; Maki, Dwver, & Snyder, 2016). This presents an exciting opportunity to learn more about what motivates people to help others and what strategies can help to promote prosociality. Because this line of research is relatively new, researchers have not yet determined whether this effect is constrained to specific intentions, or if it extends to general prosocial intentions and to behavior. Furthermore, the mechanisms underlying this effect are not known. The purpose of this investigation is to explicate the effects of prospection on prosociality by replicating previous work, assessing whether thinking about the future can change people’s behavior, and by exploring potential mechanisms through which prospection promotes prosociality.

1.1 | Prosocial behavior

Prosocial behavior refers to voluntary action that is intentionally performed for another’s benefit (Eisenberg & Fabes, 1998). This includes a wide range of behaviors such as sharing personal resources, cooperating, and providing emotional support (Batson & Powell, 2003; Eisenberg & Fabes, 1998). Prosocial behavior is related to altruism, which is the motivation to “promote the welfare of others without conscious regard for one’s own self-interest” (Hoffman, 1978, p. 2). Although there is controversy about whether a behavior is ever purely selfless (Batson & Leonard, 1987), prosocial behavior is typically considered altruistic if it is motivated primarily by an interest in aiding others.

Prosocial behavior provides clear advantages for the recipients of help (e.g., Siegel et al., 2010; Szreter & Woolcock, 2004) and also benefits the people who enact it. Specifically, behaving prosocially is associated with increases in indices of well-being such as positive affect (Csikszentmihalyi, Patton, & Lucas, 1997; Kahana, Bhatta, Lovegreen, Kahana, & Midlarsky, 2013), life satisfaction, and a sense of meaning in life (Caprara & Steca, 2005; Kahana et al., 2013; Pashak & Laughter, 2012). Researchers propose that these benefits appear because helping others makes people feel proud, which can lead to higher self-worth (Trivers, 1971) and meaning in life (Nakamura, 2013). Beyond this, engaging in prosocial behavior may lead people to interact with others more frequently, which facilitates the formation and regulation of positive social relationships (Baumeister & Leary, 1995). Supporting this notion, highly prosocial children have more friends and report better friendship quality than less prosocial children (Clark & Ladd, 2000). These relationships can provide psychosocial resources such as emotional support (Taylor, 2011) and can contribute to a meaningful life (Auhagen & Holub, 2006).

Altogether, prosocial behavior benefits both the helped and the helper. This evidence warrants further investigation into strategies that encourage prosocial behavior. One potential direction that has recently emerged is the process of thinking beyond the current moment (Gaesser & Schacter, 2014; Maki et al., 2016).
1.2 | How thinking beyond the present influences prosociality

Retrospection and prospection refer to cognitive processes in which an individual imagines a time beyond the current moment. Retrospection involves looking backward to remember previous experiences (Schacter & Addis, 2007). For instance, a person may reflect on their high school graduation or what activities that did during the past weekend. Conversely, prospection is the process of looking forward (Schacter & Addis, 2007). It involves combining knowledge from past and current experiences and using that information to imagine oneself and others in the future (Gilbert & Wilson, 2007; Seligman, Raitlon, Baumeister, & Sripada, 2013). For example, a high school student might imagine what their life will be like if they attend a local college or what they will eat for dinner that night. Both processes involve thinking beyond the current moment.

Mounting evidence suggests that thinking beyond the present time can influence current prosocial behavior. For instance, people are more likely to cooperate after remembering the benefits they gained from helping in the past rather than remembering the costs they have incurred from helping others (Parks, Sanna, & Posey, 2003). In addition, people who are prompted to think about the distant future rather than the near future tend to express more extreme negative judgments of moral transgressors and are more willing to donate to charities (Ägerström & Björklund, 2009). This effect also relates to thinking about the past or future more generally. For example, people who prospect more frequently are more likely than others to report a concern for the environment (Joireman, Van Lange, & Van Vugt, 2004) and engage in fewer competitive behaviors (Insok et al., 1998). These findings suggest that the frequency and nature of retrospection and prospection are related to prosociality.

Drawing on the work above, Gaesser and Schacter (2014) conducted three experiments to test whether encouraging participants to engage in mental simulations of past, present, and future events would increase prosocial intentions. The researchers asked participants to read stories about people who need help in ways that are common in everyday life such as getting locked out of their house or recovering from an illness. Next, participants were randomly assigned to either (a) complete math problems, (b) imagine themselves helping the person in the story, (c) identify the styles and sources of the stories, (d) visualize how other people could comment on a web page to help the person in the story, or (e) remember a related event in which they helped someone. Finally, they rated the likelihood that they would help the people in the stories. Participants who engaged in retrospection reported significantly stronger helping intentions (M = 4.88, SD = .86) than participants in control conditions (M = 4.19–4.41, SD = .70–1.00). Participants who engaged in retrospection reported the strongest intentions to help (M = 5.05, SD = .82). The researchers concluded that prospection was more effective than retrospection because it is easier for people to imagine future behavior than to recall past experiences. Supporting this notion, they found that participants in the retrospection group were unable to retrieve memories of helping others approximately 13% of the time. This point aligns with previous arguments that retrospection is more constrained than prospection (Van Boven, Krane, & McGraw, 2009). Overall this work is especially significant because it is the first to provide evidence for a causal relationship between mental simulations and prosocial intentions.

In a more recent study, Maki and colleagues (2016) conducted an experiment to examine the effects of prospection on volunteering intentions. They randomly assigned 96 participants to write about the current moment or the future in the most objective terms possible. Next, participants indicated their intentions to volunteer in the next year and their past volunteering behavior, and completed measures of volunteering motivation and time perspective. Analyses of responses indicated that people who wrote about the future were marginally more likely than those who wrote about the present time to agree with the statement, “If someone asked me to sign up as a volunteer in the community, I would sign up,” t(95) = 1.96, p = .05. This was particularly true for people who volunteered and thought about the future less on average, t(95) = 3.33, p < .01. These results align with Gaesser and Schacter’s findings. They also provide evidence that thinking about the future could increase people’s intentions to help others in ways that are not directly related to what they thought about in the future. Furthermore, this work elucidates some importance nuances of this effect, including people’s habitual focus on the past or present and their established norms for prosocial behavior. This line of research raises a critical question: how does prospection lead to prosociality?

1.3 | How prospection enhances prosociality

There are several possible explanations for how prospection motivates prosociality. First, Gaesser and Schacter (2014) propose that mentally simulating a behavior evokes feelings of empathy toward the imagined person in need, which then motivates people to help. Consistent with this account, they found that people who remembered or imagined helping others more vividly were more likely to express intentions to help that person. Although empathy plays a role in both imagining oneself helping others and prosociality (Davis, 2015), other work shows that prospection evokes prosociality even when people do not imagine helping others (Maki et al., 2016). Alternatively, Maki and colleagues (2016) speculate that prospection might increase feelings of optimism, which then makes people more likely to help others. This notion finds some evidence in the health literature; prospection increases optimism, which promotes medication adherence (Mann, 2001). This potential link has not yet been tested empirically.

Another possible mechanism that links prospection and prosociality is positive affect. People tend to experience more positive emotions when they imagine the future than when they think about the past or present (Berntsen & Jacobsen, 2008; Finnbogadóttir & Berntsen, 2013). Additionally, analyses of how people think about the future reveal that positively valanced prospections are more frequent, specific, and vivid than neutral or negatively valanced prospection (D’Argembeau, Renaud, & Van Der Linden, 2011; Finnbogadóttir & Berntsen, 2011). At the same time, there is a robust connection between positive affect and prosocial behavior: when people feel good, they are more likely to help others (Aknin, Dunn, & Norton,
2.1.1 | Participants

Participants were asked to write about memories of themselves helping others. First, they received the following instructions: “Please try to remember what activities you did in the past week. Now list three things you did that were productive. This can include activities such as doing housework, going grocery shopping, or performing a task for your job.” On the next screen, they were asked to, “Please choose one activity that you listed and describe: (1) Who benefited from that activity getting done, (2) What steps were required to complete that activity, and (3) Why you decided to do that activity.”

Activity 4: Prosocial retrospection

Participants were asked to write about memories of their general behavior. First, they received the following instructions: “Please try to remember what activities you did in the past week. Now list three things you did that were productive. This can include activities such as doing housework, going grocery shopping, or performing a task for your job.” On the next screen, they were asked to, “Please choose one activity that you listed and describe: (1) Who benefited from that activity getting done, (2) What steps were required to complete that activity, and (3) Why you decided to do that activity.”

2.1.2 | Materials

Activities

Four writing activities were created for this study. These activities prompted participants to engage in general prospection, prosocial prospection, general retrospection, or prosocial retrospection. Writing activities were chosen because they can be performed through an online survey and because responses can be examined as a manipulation check. This type of intervention has been used in previous research to prompt participants to think about past or future behavior and has demonstrated efficacy in encouraging people to engage in those thought processes (e.g., Gaesser & Schacter, 2014; Layous, Nelson, & Lyubomirsky, 2013; Seear & Vella-Brodrick, 2013). Instructions between the activities were kept as consistent as possible to minimize discrepancies that are not related to past versus future thinking or prosocial versus general behavior.

Activity 1: General prospection

Participants were instructed to write about how they envision the distant future. Specifically, they were asked, “Describe what you think the future will look like 20 years from now. What will you be like? What will others be like? What will be different from now? What do you hope will happen in the future? What do you hope will not happen in the future?” For this and all other activities, questions were presented separately with space under each to encourage participants to answer each question fully.

Activity 2: Prosocial prospection

Participants were asked to write about how they could behave prosocially in the future. Specifically, they were asked, “Please imagine what your life might be like 20 years from now. Now list three ways you could see yourself helping others in the future. This can include activities such as volunteering in an organization, helping someone carry groceries, or spending time comforting a friend.” On the next screen, they were asked to, “Please choose one activity that you listed and describe: (1) Who you could help, (2) How you could help, and (3) Why you would help.”

Activity 3: General retrospection

Participants were asked to write about memories of their general behavior. First, they received the following instructions: “Please try to remember what activities you did in the past week. Now list three things you did that were productive. This can include activities such as doing housework, going grocery shopping, or performing a task for your job.” On the next screen, they were asked to, “Please choose one activity that you listed and describe: (1) Who benefited from that activity getting done, (2) What steps were required to complete that activity, and (3) Why you decided to do that activity.”

Activity 4: Prosocial retrospection

Participants were asked to write about memories of themselves helping others. First, they received the following instructions: “Please try to
remember what activities you did in the past week. Now list three ways in which you have helped others in the past week. This can include activities such as volunteering in an organization, helping someone carry groceries, or spending time comforting a friend." On the next screen, they were asked to, "Please choose one activity that you listed and describe: (1) Who you helped, (2) How you helped, and (3) Why you helped."

Prosocial intentions
The prosocial intentions scale (Pavey, Greitemeyer, & Sparks, 2011) is a 5-item self-report measure of the extent to which participants express a desire and plan to help other people. Respondents were asked to report the extent to which they intend to perform each prosocial behavior in the next 6 weeks. Items included, “Give money to charity,” “Donate goods or clothes to a charity,” “Go out of your way to help a friend in need,” “Give up your time to do something that will benefit the community,” and “Go out of your way to help a stranger in need.” Each intention was rated from 1 (Definitely will not do this) to 7 (Definitely will do this). Pilot data indicates that this scale has good internal consistency (α = .83).

2.1.3 | Procedure
This study employed a posttest-only experimental design to compare differences in prosocial intentions between people who engaged in prospection or retrospection. An invitation to participate was posted on MTurk.com. People who clicked on the study link were led to a survey posted on Qualtrics.com, a survey management website. After providing consent, participants were randomly assigned to engage in one of four writing activities: (a) General prospection, (b) Prosocial prospection, (c) General retrospection, or (d) Prosocial retrospection. Participants then completed a measure of prosocial intentions and demographic questions. Completing the survey took approximately 1 min and 30 s each.

2.1.4 | Data analyses
A t-test was used to compare differences in prosocial intentions between the prospection and retrospection groups.

3 | RESULTS
3.1 | Preliminary analyses
3.1.1 | Data cleaning
I removed 10 cases due to incomplete data. There were 55–63 participants in each of the four conditions (general retrospection, prosocial retrospection, general prospection, or prosocial prospection). Composites were created for the prosocial intentions scale. All variable distributions were relatively normal, with skewness ranging from −.57 to .24 and Kurtosis ranging from −.84 to −.26. No variables were transformed because the sample size was sufficient to account for slightly non-normal distributions.

3.1.2 | Manipulation check
Activity responses were reviewed to ensure that participants followed instructions. Cases with missing or nonsensical responses such as "asd-fasdf" were deleted because those participants presumably did not engage in the activities. Responses to each writing prompt ranged from a couple of words to full sentences, but most include a few phrases or lists such as, “1. Donating to charity. 2. Volunteering in animal shelters. 3. Help an elderly person” or “I want to do this all my life because I know what it is to be with a mental disorder.” Pilot data with 12 young adults indicated that completing the writing activities took approximately 1 min and 30 s each.

3.1.3 | Main analyses
Prosocial intentions were significantly higher for participants who engaged in prospection (M = 4.49, SD = 1.28) than those who engaged in retrospection (M = 4.05, SD = 1.52), t(236) = 2.38, p = .02. Prosocial intention scores were lowest in the group who engaged in general retrospection (M = 3.81, SD = 1.59) and then prosocial retrospection (M = 4.30, SD = 1.42), were higher in the general prospection group (M = 4.48, SD = 1.41), and were highest for those who engaged in prosocial prospection (M = 4.49, SD = 1.17).

3.2 | Discussion of Study 1
Data from this study supported the hypothesis that people engaged in prospection would express significantly higher prosocial intentions than people who engaged in retrospection. This finding is consistent with previous studies (Gaesser & Schacter, 2014; Maki et al., 2016), but extends them by showing that prospection influences intentions to help in various ways—such as donating to charity or consoling a friend—rather than just within the individual situation that the person imagined or to volunteering. The next step was to assess whether the effects of prospection on prosociality extended to behavior.

4 | STUDY 2
The main goal of this study was to evaluate whether prospection provokes prosocial behavior. Based on the finding that prospection led to higher prosocial intentions than retrospection (Study 1), and on the link between intentions and behavior (Ajzen, 1985; Armitage & Conner, 2001; Smith & McSweeney, 2007), I hypothesized that people who wrote about the future would be more likely to engage in prosocial behavior than those who wrote about the past.

4.1 | Method
4.1.1 | Participants
The sample included 87 adults. This size satisfies the recommendation to have at least 5 cases for each cell in a chi-square analysis (Miller & Siegmund, 1982). Participation was limited to people who currently reside in the United States, speak English fluently, and who did not take part in Study 1. Participants’ ages ranging from 19 to 68 (M = 35.05, SD = 12.99). Approximately half (43%) were Male and
approximately half (57%) were Female. Most participants were Caucasian (77%), and the remaining people were African American (7%), Asian (7%), Hispanic/Latino (7%), Native American (1%), or more than one ethnicity (1%).

4.1.2 | Materials

Activities

Participants were once again presented with prompts to write about helping others in the past (prosocial retrospection) or helping others in the future (prosocial prospection). See Study 1 for a full description of each activity. The two activities about general behavior were not included in this study because (a) the differences between prospection and retrospection in Study 1 were similar in direction and magnitude regardless of whether the content was prosocial or general, and (b) the two prosocial activities are more similar to each other (they include the same number of questions) than the general activities.

Prosocial behavior
Participants were presented with a request to complete additional items, which involved defining “a good life” and “morality.” The instructions emphasized that these questions were optional and that participants would still get paid if they skipped them, but that extra effort would be helpful to the researcher. This behavior aligns with existing measures such as the item from the prosocial intentions scale (Pavey et al., 2011) that asks people to indicate the likelihood that they will “Go out of your way to help a stranger in need.” Similar strategies for measuring prosocial behavior in a survey have been used in previous work (e.g., Siegel, Thomson, & Navarro, 2014; Thomson, Nakamura, Siegel, & Csikszentmihalyi, 2014).

4.1.3 | Procedure

This study employed a posttest-only experimental design to compare differences in prosocial behavior between people who wrote about the future or past. Participants were recruited from MTurk.com. People who entered the survey and consented to participate completed questions about previous prosocial behavior. Next, they were randomly assigned to complete either the prospection or retrospection writing activities, which each involved answering open-ended questions. Afterwards, all participants were presented with an opportunity to behave prosocially. Finally, they completed demographic questions. Taking the survey took approximately 3 min and 30 s.

4.1.4 | Data analyses

A chi-square analysis was used to evaluate whether participants who wrote about the future would be more likely than people who wrote about the past to help with a subsequent study for no payment.

4.2 | Results

4.2.1 | Preliminary analyses

I deleted 13 participants who did not complete the activity. All other responses were complete. Random assignment to activity conditions appeared to be successful: 48.3% were assigned to the prosocial prospection condition and 51.7% to prosocial retrospection. Approximately two thirds (67.8%) of all participants performed the prosocial behavior, whereas one-third (32.2%) did not.

4.2.2 | Main analysis

Participants in the prospection condition were significantly more likely (78.57%) than people in the retrospection condition (57.78%) to engage in prosocial behavior, $\chi^2 = 4.30, p = .04$.

4.3 | Discussion of Study 2

Results of this study supported the hypothesis that people who engaged in prospection would be more likely than those who engaged in retrospection to behave prosocially. Thus, thinking about the future for even a brief period, can make people more likely to help others. It is important to note that prosocial behavior is a multidimensional construct and it was only representing with one action: helping a stranger with a small task. Therefore, it is unknown whether prospection increases the likelihood of people engaging in all types of prosocial behavior, such as more difficult or demanding tasks. On the other hand, considering that none of the helping behaviors that participants described enacting in the future in Study 1 were related to helping a stranger with an additional task, these combined findings indicate that prospection inspires a general desire to help other people, which, at least in some cases, is strong enough to drive people to action. Because prospection evoked prosocial intentions (Study 1) and behavior (Study 2), a third study was conducted to investigate why this effect occurs.

5 | STUDY 3

Findings from Studies 1 and 2 and previous work (Gaesser & Schacter, 2014; Maki et al., 2016) provide evidence that there is a causal relationship between prospection and prosociality such that thinking about the future increases people’s intentions to help others as well as the likelihood that they will enact helping behavior. However, it is unclear how prospection leads to prosociality. One possible explanation is that positive affect mediates the effect. Indeed, prior studies supply evidence that there is a causal link between prospection and positive affect (Berntsen & Jacobsen, 2008; D’Argembeau et al., 2011), and between positive affect and prosociality (e.g., Aknin et al., 2012). Researchers have also proposed optimism as a potential mediator (Maki et al., 2016). These mechanisms have not been tested empirically.

The purpose of this study was to evaluate positive affect and optimism as potential mediators of prospection and prosociality. A survey measuring each main variable in the hypothesized model was distributed. The hypotheses were that writing about the future would lead to stronger prosocial intentions than writing about the past or present (H1) and that this effect would be mediated by positive affect (H2a). I also tested an alternative hypothesis that optimism mediated the relationship between prospection and prosociality (H2b).
5.1 | Method

5.1.1 | Participants
There were 203 participants in the sample, which meets the recommended minimum number of cases needed to conduct path analyses (Boomsma & Hoogland, 2001). Participants ages ranged from 19 to 87 years old (M = 36.31, SD = 12.65). The sample included 37% Males, 62.5% Females, and one non-binary person. Most participants were Caucasian (73%), and others were African American (11%), Asian (8%), Hispanic/Latino (4%), Native Hawaiian (.5%), Middle Eastern (.5%), or more than one ethnicity (2%).

5.1.2 | Materials
Writing activities
Participants were asked to write about their experiences in past, present, or future. The following instructions were presented: “Please take a few moments to think about your life in the [past/present/future]. Try to form a clear picture of it in your mind. In as much detail as possible, describe: What [was your life/is your life/will your life be] like? What [was/is/will be] the most important things going on? What kinds of things [were you/are you/will you be] thinking about? What [were you/are you/will you be] feeling?” Respondents were given a blank text box that could fit approximately 1,000 characters to encourage them to write at least two sentences. An embedded webpage timer indicates that participants spent approximately 2 min and 15 s completing the writing activities.

Positive emotions
The 10-item positive affect subscale of the “Positive and Negative Affect Schedule” (Watson, Clark, & Tellegen, 1988) was used to assess people’s current moods. Respondents were instructed to rate how much they currently felt emotions like “inspired,” “excited,” and “happy” from 1 (Extremely not) and 7 (Very much). This subscale exhibits strong internal consistency (α = .86 to .90; Watson et al., 1988).

Optimism
The Life Orientation Test Revised (LOT-R; Scheier, Carver, & Bridges, 1994) is a 10 item self-report measure of optimism. Respondents rate their agreement with ten items, such as, “Overall, I expect more good things to happen to me than bad” and “In uncertain times, I usually expect the best” on a five point Likert scale, with response options range from 0 (Strongly disagree) to 4 (Strongly agree). This measure has demonstrated adequate test-retest reliability (ICC = .72; Hirsch, Britton, & Conner, 2010), convergent validity, and predictive validity for health outcomes (Reilley, Geers, Lindsay, Deronde, & Dember, 2005).

Prosociality
For this study, I assessed prosocial intentions rather than behavior because: (a) including only one of the main outcomes would enable me to assess it among all participants, which would supply more statistical power; (b) prospection was positively correlated to both prosocial intentions and behavior in the first two studies, so both should be able to correlate to prospection in this study; and (c) the intentions measure produced a continuous index of prosociality whereas behavioral measure was a dichotomous outcome, which produces less variance. Thus, intentions data were preferable for statistical analyses.

A new measure called the prosocial behavior intentions scale (Baumsteiger & Siegel, in press) was used to assess the extent to which participants intended to help other people. The measure instructs respondents to indicate the likelihood that they will 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 in the future. Each item rate from 1 (Definitely would not do this) to 7 (Definitely would do this). This scale demonstrates good internal consistency (α = .80-.82); convergent validity with moral identity (r = .50 to .55), past prosocial behavior (r = .52 to .51), and materialism (r = -.25); and predicts prosocial behavior (r = .22 to .32).

5.1.3 | Procedure
This study was a posttest-only experimental design. An invitation to participate was posted on MTurk. People who followed the link were led to the survey on Qualtrics.com. After providing consent, participants were randomly assigned to complete one of the three writing activities. Next, they completed measures of positive emotions, optimism, prosocial intentions, and demographics. The survey took participants approximately 5 min to complete.

5.1.4 | Data analyses
Composites were created for each main outcome. Correlations and ANOVA were used to test individual relationships among main variables. Next, multiple regression analyses were used to test how prospection, optimism, and positive affect contribute to predicting prosocial intentions. The final model fit was evaluated in AMOS.

5.2 | Results

5.2.1 | Preliminary analyses
No participants failed the attention check or had missing data, so all cases were retained for analyses. Approximately one-third of participants assigned to write about the past (n = 64), present (n = 71), or future (n = 68). The distributions of scores were relatively normally distributed for the PBIS (M = 5.57, SD = 1.22), optimism (M = 4.38, SD = .78), and positive affect (M = 4.55, SD = 1.52), with skewness ranging from −.97 to −.17 and kurtosis ranging from −.52 to 1.22.

5.2.2 | Main analyses
Prosocial intentions were highest for people who wrote about the future (M = 5.72, SD = .95), next highest for those who wrote about the present (M = 5.55, SD = 1.47), and the lowest for those who wrote about the past (M = 5.42, SD = 1.16). These differences were not statistically significant, F(2, 200) = 1.04, p = .36. There were small to moderate correlations among prosocial intentions and positive affect, r = .32, p < .001; prosocial intentions and optimism, r = .16, p = .01; and positive affect and optimism, r = .47, p < .001.
5.2.3 | Model development

First, I tested the hypothesized model in which positive affect mediates the effect of prospection on prosocial intentions, and optimism moderates the effect of prospection on positive affect. Results indicated that prospection was significantly related to positive affect (B = .52, p < .001), and positive affect was significantly related to prosocial intentions (B = .25, p < .001). The strength of the path between prosociality and prospection decreased significantly when positive affect was added to the model (direct path: B = .24, p = .19; indirect path: B = .08, p = .65). R² = .09, F(1, 200) = 20.98, p < .001. Thus, there is evidence that positive affect partially mediates the relationship between prospection and prosociality.

Next, I evaluated a model in which prospection leads to prosociality, and this effect is mediated by optimism. Optimism was not significantly related to prospection (B = .11, p = .33) or to prosocial intentions (B = .02, p = .86). This indicates that optimism does not mediate the relationship between prospection and prosocial intentions.

Given that there was a moderate correlation between optimism and positive affect (r = .47, p < .001), additional tests were conducted to explicate how these constructs related to prosocial intentions. Analyses revealed that optimism was a strong predictor of positive affect (B = .93, p < .001), which was in turn predicted prosocial intentions (B = .25, p < .001). The relationship between optimism and prosocial intentions diminished after accounting for the effects of positive affect (direct path: B = .25, p < .001; indirect path: B = .02, p = .87). R² = .01, F(1, 200) = 16.96, p < .001. Thus, optimism predicted prosocial intentions and this relationship was fully mediated by positive affect.

5.2.4 | Final model

Findings across analyses were integrated to develop a model that explains relationships among the variables of interest. In this model, prospection and optimism predict positive affect (B = .90, p < .001, B = .53, p = .001, respectively), which then predicts prosocial intentions (B = .35, p < .001). Analyses suggest that this model has a strong fit for these data, χ²(3) = 1.19, p = .76, CMIN/df(3) = .40, p = .76, CFI = 1.00, IFI = 1.02, RMSEA = .00 (90% CI: .00 to .08), with no suggested modifications. See Figure 1 for a depiction of the final model.

6 | GENERAL DISCUSSION

The overarching aims of this work were to advance previous research by testing whether the effects of prospection extend to broader prosocial intentions and to behavior, and to test positive affect and optimism as mediators of that effect. Results of Study 1 reveal that people who engaged in prospection endorsed stronger prosocial intentions than those who engaged in retrospection. This finding aligns with previous work and bolsters it by providing evidence that prospection does more
than merely drawing people’s awareness to a particular situation, evoking feelings of empathy toward a specific person, or sparking an interest in volunteering. Rather, the present data indicates that prospection inspires a general desire to help others. Results from Study 2 contribute the new finding that prospection promotes prosocial behavior. Thus, prospection not only changes the way people think and feel, but also the way they act.

The findings from this study are consistent with the literature in terms of the relationship directionality. However, the magnitude of those relationships differs slightly. More specifically, the effect size for the difference in prosocial intentions between people who engaged in prospection and retrospection found in this study ($d = .31$) is smaller than what was found in Gaesser and Schacter’s work ($d = .46$). This is likely because the previous study matched the prospection prompt directly to the behavioral intention, which is known to bolster the link between imagination and behavior (Gollwitzer, 1996), whereas in the current study, both the prompt and intention measure were more generalized. Both effect sizes are larger than the magnitude of differences that Maki and colleagues found in volunteering intentions between people who wrote about the future and present ($d = .08$). This could indicate that volunteering intentions are less susceptible to the influence of prospection than other types of prosocial behavior intentions; that there are larger differences between past and future thinking than between present and future thinking; or that the prospection prompt used in Maki and colleagues’ work was less provocative of prosociality than prompts used in other research. Integrating these findings, it appears that prospection leads higher prosocial intentions than thinking about the past or present, and that these differences are small to moderate in size.

In addition to demonstrating that prospection influences broad prosocial intentions and prosocial behavior, the current findings also shed new light on how thinking beyond the current moment influences prosociality. Findings from Study 3 provide evidence that positive affect partially mediates the relationship between prospection and prosociality. Put simply, thinking about the future tends to make people feel good, which makes them more likely to want to help others. This model could help to explain why larger effect sizes were found in Study 1 ($d = .31$) and in Gaesser and Schacter’s work ($d = .46$), which allowed for emotional content, than in Maki and colleagues’ study ($d = .08$), which explicitly discouraged people from utilizing emotions.

This work also presents novel insights into how optimism influences prosociality. Instead of operating as a mediator or moderator to the effects of prospection on prosociality, as previously suggested (Maki et al., 2016), the current data indicate that optimism represents an independent pathway toward positive emotions, which then led to prosocial intentions. In fact, the pathway between optimism and positive emotions ($B = .90$) was stronger than the relationship between prospection and positive emotions ($B = .53$). At the same time, it is important to note that prospection was manipulated whereas optimism was merely measured. Thus, the prospection variable represented which type of brief activity people completed, whereas the optimism variable represented interindividual differences that might reflect trait-like differences. Given that most people completed the prospection activity within in a couple of minutes, using this strategy might be more feasible than changing optimism within many contexts.

Beyond their theoretical importance, the current findings have valuable practical applications. Namely, this research demonstrates that a very brief and simple activity can significantly increase people’s intentions to help others. Given that prosocial behavior is essential for interpersonal functioning, societal cohesion, and individuals’ well-being (e.g., Kahana et al., 2013), prospection could be an invaluable strategy for increasing prosociality across a multitude of contexts, such as in schools, community programs, and therapeutic settings. For example, philanthropic organizations could harness this effect to persuade people to help others in specific situations, such as donating organs or signing up to assist with a fundraiser. Furthermore, this effect hints that the correlations that have found between future orientation and prosocial outcomes—such as environmental concerns (Joireman et al., 2004), cooperative behavior (Inske et al., 1998), judgements of moral transgressors, and willingness to donate to charities (Agerström & Björklund, 2009)—may reflect a causal relationship in which thinking about the future leads to higher levels of prosociality over time. If this is found to be true, then this effect could be incorporated into developmental interventions. For instance, thinking about the future might inspire young people to become more prosocial because it helps them consider big picture issues like their purpose in life, which then compels them to help others. If this is true, then parents, teachers, researchers, and policy makers should strive to encourage young people to think more frequently and deeply about the future.

This study should be interpreted in the context of its limitations. The first issue is that the samples only included MTurk workers, who are slightly more educated and Liberal than most U.S. adults. It would be helpful to test whether these effects generalize to different samples. A second important consideration is that prosocial behavior was operationalized with a single action. Although it is impossible to measure all possible behaviors, and the one that were selected for this study is relatively common, other forms of prosocial behavior—such as cooperating with another person to achieve a mutually beneficial outcome or volunteering to help with a fundraiser—might be affected differently by the activities. Examining the influences of prospection on additional prosocial behaviors could help elucidate the situational confines of these effects.

Findings from these studies suggest several promising directions for future researchers to pursue. For example, there are several reasons to believe that prospection could affect people differently across the lifespan. On one hand, young children do not possess the ability to imagine the distant future (Piaget, 1929), so asking them to imagine the future might not significantly alter their intentions or behaviors. On the other hand, prospection might diminish older individuals’ sense of agency because thinking about the future could lead them to realize that they have limited time, and thus, limited opportunities to make the kind of impact that they hope to achieve. Consequently, it would be interesting to examine how prospection influences prosociality among
younger and older individuals. Additionally, more research is needed to examine whether the effects of prospection are limited to specific situations, or whether it can foster higher levels of prosociality over time. This work could help reveal whether prospection provokes positive effects for people of different ages, in various situations, and across time. Finally, additional research could be conducted to further elucidate the relationship between optimism, positive emotions, and prosociality to determine whether increasing optimism represents another viable strategy for promoting prosocial behavior.

In conclusion, the current studies provide evidence that asking people to think about the future for just a minute or two, increases their desire to behave prosocially and the likelihood that they will take steps to help others. This effect occurs, at least in part, because prospection elicits positive emotions, which then evokes a greater desire to help other people. Learning more about this phenomenon could aid researchers and practitioners in encouraging specific helping behavior and fostering prosocial development.

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