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Cover Page Footnote

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Acknowledgements: Although addressing a different research question, the data presented in the present study were collected as part of my Master's Thesis. As such, much thanks goes to the people who generously assisted with data collection and scoring, Brittany Nelund, Ashley Brude, Zakeya Sisco, Aaron Brude, and Reneze Trim, and my committee members, Dr. Ruth WilliamsMorris, Dr. Robert Coombs, and Dr. Linda Crumley, for their support and guidance. Lastly, thanks beyond what can be expressed in words goes to my wonderful husband Trevor who has supported me on every step of my academic journey and also contributed to the success of this project in many practical ways.

What Dimensions of Empathy Predict Prosocial Helping Behavior in Emerging Adulthood? The Relationships between Volunteering to Help and Perspective-Taking Ability, Experience of Empathic Concern, and Self-Report Empathic Inclinations

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Abstract

Empathy, defined as the ability to experience the world from the other's point of view, is believed to play an important role in motivating acts to meet the needs of others, as in prosocial behavior (Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007). The purpose of this study was to replicate and extend past work that highlights empathy's role in prosocial behavior by examining the relative importance of specific components of empathy in relationship to prosocial helping behavior. The role of perspective-taking ability, experience of empathic concern responses, and self-report empathic inclinations were examined in a model predicting prosocial helping behavior. The hypothesis that these dimensions of empathy would be related to prosocial helping behavior was only partially supported as perspective-taking ability proved to be the only significant predictor. The better participants' perspective-taking ability, the more likely they were to demonstrate prosocial behavior. Notably, this relationship between perspective-taking ability and prosocial helping behavior remained strong even after controlling for participants' social desirability response biases, customary volunteer habits, gender, and beliefs about the legitimacy of the prosocial helping measure. The implications of these findings are discussed.

Keywords: empathy, empathic concern, perspective-taking, prosocial behavior

What Dimensions of Empathy Predict Prosocial Helping Behavior in Emerging Adulthood? The Relationships between Volunteering to Help and Perspective-Taking Ability, Experience of Empathic Concern, and Self-Report Empathic Inclinations

Empathy, defined as “the ability to re-create another person’s perspective, to experience the world from the other’s point of view” (Adler & Proctor, 2014, p.100), is implicated a host of important social constructs (Sze, Gyurak, Goodkind, & Levenson, 2012). For example, in their review of the literature related to empathy, Miklikowska, Duriez, and Soenens (2011) note that empathy is related to lower aggression, increased social competence, increased relationship satisfaction, peaceful conflict resolution and less prejudice, while a lack of empathy is linked to cruelty and violence (Swick, 2005). Additionally, empathy is believed to be an important motivator to act to meet another person’s need, as in prosocial behavior (Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007). Empathy has even been argued to be “the bedrock of prosocial morality and the glue of society” (Hoffman, 2008, p. 449). The relevance of empathy to prosocial behavior is the principal focus of the present study.

Empathy is related to but differentiated from sympathy. Sympathy refers to feeling *for* someone, while empathy refers to feeling *with* someone. This differentiation is based on perspective: experiencing sympathy involves viewing another person’s situation from your own perspective, while empathy involves joining the other person and experiencing their perspective (Adler & Proctor, 2014).

From a social neuroscience perspective, empathy is composed of several cognitive components (Decety, 2007). One component, the ability to engage in affective sharing, involves emotional expression and perception that is key to social interactions. Other key components of empathy are self-awareness as well as awareness of other’s mental states. Mental flexibility is

required in order to engage in empathy by adopting another's perspective. The ability to regulate emotion, influenced by a circuit of connection between the prefrontal cortex, amygdala and hippocampus (among others), also plays a key role in empathy. Finally, empathy likely arises at least partly from "unconscious neural/mental simulation of the emotional states of others." (Decety, p. 263).

Empathy as a Multidimensional Concept

Empathy involves taking another's perspective and experiencing an emotional arousal response in conjunction with concern for another's welfare. As such, empathy is commonly viewed as a multidimensional concept in the current literature, composed of both cognitive and affective components (Miklikowska et al., 2011). The cognitive component of empathy is typically referred to as perspective-taking, defined as "the cognitive understanding of others' internal states and cognitions" while the affective component of empathy, empathic concern, refers to "concern for others based on the comprehension of their internal state" (Miklikowska et al., p. 1342).

Cognitive empathy in the form of perspective-taking is distinct from empathic concern as perspective-taking may or may not result in an affective response to another person's state (Davis, 1983). Nonetheless, the ability to comprehend another person's point of view is an important skill that is utilized in most relationships and everyday social interactions (Ligneau-Herve & Mullet, 2005) and is closely related to the concept of *theory of mind* which refers to the ability to attribute mental states to others as different from one's own, such as others' beliefs, intentions, desires and knowledge (Van Doesum, Van Lange, & Van Lange, 2013).

Affective empathy in the form of empathic concern is evidenced by feelings such as warmth, concern, and sympathy toward other people based on a grasp of their internal states

(Miklikowska et al., 2011; Sze et al. 2012). In other words, empathic concern occurs via perspective-taking which facilitates the comprehension of others' internal states. Since comprehending the states of others is necessary before experiencing an emotional response to their plight or a desire to help, perspective-taking plays an important role in empathic concern and prosocial behavior (Zhang, Fung, Stanley, Isaacowitz, & Ho, 2012).

Empathy and Prosocial Behavior

Prosocial behavior, defined as “voluntary, intentional behavior that results in benefits for another individual or group” (Sze et al., 2012, p. 1130), is an important part of cooperative society. As alluded to above, prosocial behavior is closely related to empathy, which is said to “have all the attributes of a prosocial moral motive” (Hoffman, 2008, p. 442). Empathy is shown to be related to prosocial behavior even in young children. For example, teacher-rated prosocial behavior towards peers in early childhood was related to empathy, among other things, as revealed by longitudinal data from 242 children assessed at 6 time-points across early childhood (Taylor, Eisenberg, Spinrad, Eggum, & Sulik, 2013).

Later on in the lifespan, Sze et al. (2012) found that increased prosocial behavior with age was partially explained by empathic concern and trait empathy in their sample of 213 older, middle-aged, and young adults. Prosocial behavior was construed as greater charitable giving to organizations meeting the needs of vulnerable individuals. In their review of the literature, Sze et al. discuss explanations for the role empathy plays in motivating prosocial helping behavior, for example through emotion regulation, such that helping others may reduce the emotional arousal one experiences after coming into contact with another person who is in need.

Empathic concern is not the only component of empathy related to prosocial helping behavior. Describing prosocial behavior as a form of altruism, Underwood and Moore (1982)

report a reliable relationship between prosocial behavior and perspective-taking among adults. People are more likely to engage in prosocial helping behavior after engaging in imagery, a path related to perspective-taking, while reading a story modeling prosocial behavior (Johnson, Cushman, Borden, & McCune 2013). Levy, Freitas, and Salovey (2002) reported that viewing the goals and actions of others abstractly is related to increase ease of perspective-taking that results in empathy for stigmatized others (e.g. people who have AIDS or are homeless) and increased willingness to help, since most people's actions serve goals that are very similar to others' when their goals are described abstractly enough which in turn facilitates a smooth transition to taking others' perspective. It is likely that one is more inclined to treat another person with care and respect when the other is perceived as similar to oneself.

The role of empathy in prosocial behavior is evident. A variety of studies have shown that empathic concern contributes to the motivation to respond with prosocial helping behavior when witnessing others in need (e.g., Batson et al., 2007; Sze et al. 2012; Hoffman, 2008; Johnson, 2012). Likewise, other studies identify perspective-taking as related to prosocial behavior (e.g., Underwood & Moore, 1982; Johnson et al. 2013; Levy, Freitas, & Salovey, 2002). Given these complementary findings, it is notable that no studies were identified that simultaneously examine the influence of cognitive and affective empathy in relation to prosocial behavior. The aim of the present study is to address this gap and carefully examine the specific dimensions of empathy in relationship to prosocial behavior.

Current Study

The goal of the present study is to replicate and extend past work highlighting empathy's role in prosocial behavior by examining specific components of empathy. The following key question will be addressed: *What dimensions of empathy are related to prosocial helping*

behavior in emerging adulthood? The role of perspective-taking ability, experience of empathic concern, and self-report empathic inclinations in predicting prosocial helping behavior will be examined. How each of these elements contributes to a model predicting prosocial helping behavior is the primary focus. Based on findings from previous literature reviewed, it is hypothesized that these dimensions of empathy will predict prosocial helping behavior, but no specific hypotheses are put forth regarding which will make more influential contributions.

Empathy can be examined using self-report inventories or more objective observational methods. The present study utilizes both of these approaches. The Interpersonal Reactivity Index (IRI; Davis' 1980), the most widely used self-report measure of individual differences in empathy according to Pulos, Elison, & Lennon (2004), is used in this study. The IRI assesses empathy as a multidimensional construct, containing subscales addressing both cognitive and affective components of empathy. However, since this measure is self-report, it will be framed as an indicator of empathic inclinations (Brandone, Werner, & Stout, 2015), indexing the motivation to engage in empathy (Werner, 2014). The possibility that cognitive and affective components of self-report empathic inclinations might predict prosocial behavior distinct from observed perspective-taking ability and empathic concern responses will be examined in this study.

Methods

The research design of this exploratory study is descriptive, utilizing survey methodology. This research design will facilitate a description of the relationships among these variables without attempting to explain these relationships; causation is not determined since this is a non-experimental design.

Participants

Participants ($N = 148$; 59 males, ranging in age from 18 to 29 years with a mean of 19.93 years) were volunteer participants attending a private Christian university in the southeast. There were originally 152 students that volunteered to participate in the study. However, the data from three were excluded because they were not in the predetermined range of emerging adulthood, 18-29 years of age, and from one participant who seemingly mistakenly failed to complete a substantial portion of the surveys. Participants received class credit for their participation. This sample of convenience was roughly ethnically diverse, comprised of 42% White, 20% Hispanic, 16% Asian, 13% Black/African American, 6% other ethnicities, 1% Native Hawaiian/other Pacific Islander, and less than 1% American Indianan/Alaskan Native.

Measures

Perspective-Taking Ability. The ability to take another person's perspective was assessed using the Faux Pas Recognition Test, as modified by Zhang et al. (2012). Zhang et al. (2012) modified the instrument originally created by Stone et al. (1998) and Gregory et al. (2002). Their adult version of the task was roughly based on the children's version created by Baron-Cohen, O'Riordan, Jones, Stone, and Plainsted (1999). The faux pas task is a complex task that is related to the ability to take another person's perspective using mental state knowledge. It requires participants to recognize when someone has unintentionally said something they should not have because it could hurt another person's feelings or divulge a secret. The Faux Pas Recognition Test consists of 20 short scenarios in which people are interacting, with half these scenarios containing a social faux pas when someone accidentally says or does something awkward. An example of one such scenario is as follows:

Jill had just moved into a new apartment. Jill went shopping and bought some new curtains for her bedroom. When she had just finished decorating the apartment, her best friend, Lisa, came over. Jill gave her a tour of the apartment and asked, “How do you like my bedroom?” “Those curtains are horrible,” Lisa said. “I hope you are going to get some new ones!”

Participants are asked to indicate if a faux pas occurred, and if so indicate who committed the faux pas and why it was awkward. In order to be marked correct, participants had to accurately identify whether or not a faux pas had occurred, and, if so, who committed the error and why it was awkward. The order of the faux pas task items was counterbalanced and the total number of correct answers was used as an index of perspective-taking ability.

Empathic Concern. A self-report emotional experience scale administered immediately before (baseline) and after viewing two short films depicting individuals in need was used to measure participants’ emotional responses that comprise empathic concern. Participants were asked to indicate the degree to which they currently felt each of 18 emotions: *afraid, angry, calm, compassionate, disgusted, disturbed, enthusiastic, interested, moved, proud, sad, softhearted, sympathetic, surprised, tender, upset, warm, and worried*. Responses are given on a 5-point Likert scale ranging from 1 = *Not at all* to 5 = *Extremely*, with higher scores indicated more intense emotional experience. Based on his review of the literature, Batson (1987) indicated that *compassionate, moved, softhearted, sympathetic, tender, and warm* are feelings of empathic concern. The emotional experience scale and scoring utilized in this study is patterned after the measures of emotional experience used by Johnson et al. (2013), Sze et al. (2012), and Batson et al. (2007) in their studies of empathy and empathic concern.

The two short films, one described as *uplifting* and the other *distressing*, were designed by Sze et al. (2012) to elicit emotional empathy in their study of empathy and prosocial behavior in older adults. The uplifting video clip was 116 seconds long and depicts the empowerment and joy experienced by children with autism who learn how to surf at a non-profit camp called Surfers Healing. The distressing video clip was 117 seconds long and depicts the pain and distress of individuals in the Darfur crisis.

Empathic Inclinations. Empathic inclinations, also conceptualized as dispositional empathy, will be measured using the self-report Interpersonal Reactivity Index (IRI; Davis, 1980; 1983). The IRI is a multidimensional measure of empathy individual differences in dispositional empathy and contains four subscales, two of which will be assessed as potential predictors of prosocial helping behavior. The Perspective-Taking subscale assesses “spontaneous attempts to adopt the perspectives of other people and see things from their point of view” (Davis, 1980, p. 2). The Empathic Concern subscale assesses “respondents’ feelings of warmth, compassion, and concern for others” (Davis, 1980, p. 2). The statement “I sometimes try to understand my friends better by imagining how things look from their perspective” is an example of a Perspective-Taking item, while the statement “I often have tender, concerned feelings for people less fortunate than me” is an example of an Empathic Concern item. Each subscale contains 7 summative 5-point Likert scale items (1 = *does not describe me well*, 5 = *describes me well*), with higher scores indicating higher levels of empathy tendencies.

The IRI is the most widely used instrument for assessing individual differences in empathy (Pulos et al., 2004) and has been translated for use in several other languages (for example Van Doesum et al. 2013; Gilet, Mella, Studer, Grün, & Labouvie-Vief, 2013). Studies examining the psychometric properties of the IRI have documented adequate internal reliability,

reporting standardized alpha coefficients ranging from .70 to .82 for subscales (Davis, 1980; Pulos et al., 2004). During the initial construction of the IRI, Davis (1980) reported sufficient test-retest reliability (correlations ranging from .61 to .81) over an interval of 60-75 days. In the context of this study, Cronbach's alpha for the IRI Perspective-Taking subscale was .75 and .74 for the Empathic Concern subscale.

Prosocial Helping Behavior. The opportunity to respond to the two short films depicting individuals in need by volunteering constituted the outcome measure of prosocial helping behavior. After viewing two video clips, participants were presented with an opportunity to volunteer their time to two real organizations that offer aid to individuals depicted in the films. A brief description of two organizations, *Surfers Healing: A Foundation for Autism* and *Not On Our Watch: Aid for Darfur* and an appeal for volunteer help in a variety of capacities was given to participants in an envelope separate from the other surveys. Participants' name, contact information, and availability were requested only if they were willing to volunteer their time, but all three were necessary in order to be scored as exhibiting this form of prosocial helping behavior.

This prosocial helping behavior measurement is a modified version of the protocol used by Sze et al. (2012) and incorporates Batson et al.'s (2007) protocol of willingness to volunteer as a measure of prosocial behavior. Two manipulation check items were included in the survey packets to assess whether or not participants believed the cover story of the prosocial helping measure. These items inquired whether or not participants believed the organizations did indeed exist and whether or not they thought their contact information would be relayed to the organizations. At the end of the study participants were debriefed that this exercise was for research purposes only. An explanation was given that although the organizations do exist, they

were not actually seeking help in this area and any information provided by participants would not be given to the organizations.

Control Variables. Sze et al. (2012) note that social desirability response bias should be controlled for when assessing prosocial behavior and empathy, as it can exert a direct effect on these socially desirability constructs. Therefore, even though care was taken to avoid a social desirability response bias in the prosocial helping behavior task, an 11-item short form (Ballard, 1992) of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1996) was included as a control variable. This short form contains 11 true/false items such as “No matter who I’m talking to, I’m always a good listener.”

Customary volunteer habits might also co-vary with prosocial helping behavior as measured in this study, so they were assessed as a potential confounding variable. Participants were asked to indicate how frequently they volunteered their time to charitable organizations and were then categorized dichotomously as regular (volunteering more than a few times per year) and irregular volunteers.

Data Collection Procedures

Using survey methodology, participants completed the study in a classroom setting. Upon commencing data collection, participants were welcomed and given a packet containing the informed consent form and the paper-and-pencil survey measures. Informed consent was read, signed, and collected. The first set of assessments was the emotional experience scales accompanying the empathic concern video sequence. After completing the baseline emotional experience scale, participants watched the first video clip and then completed the second emotional experience scale. They were then asked to sit quietly for two minutes, focusing on an X shown in the middle of the screen and trying to relax. At the end of two minutes the second

video clip was shown and participants completed the third and final emotional experience scale. The two video clips were shown in counterbalanced order. After the video clip sequence was completed, participants were directed to open the envelope that contained the prosocial helping behavior opportunity. Participants were asked to complete the rest of the survey packet when all the envelopes were turned in.

The remaining instruments were completed successively in the following order: Interpersonal Reactivity Index, Extravert/Introvert subscale of the Keirsey Temperament Sorter II (not addressed in the present study), Marlowe-Crow Social Desirability Scale short form, Faux Pas Recognition Task (in counterbalanced order), and a final survey containing demographic and control questions. Participants were debriefed about the full purpose of the study and notified that the volunteer opportunity was for research purposes only and that their information would not be given to the charitable organizations.

Participants were treated in accordance with the Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2002 & 2010). The principal investigator completed the Collaborative Institutional Training Initiative's (CITI) *Responsible Conduct of Research Curriculum* and *Research Involving Human Subjects* courses (Braunschweiger, 2014) and participants were treated in accordance to the principles outlined in CITI's curriculum.

Results

Data Analysis Plan

An initial examination of the distributions of the variables suggested that there were two prominent outliers: one on the self-report IRI measure empathy inclinations and one on the empathic concern responses to the video clips. Following a common convention (Osborne &

Overbay, 2004), two outliers falling farther than three standard deviations from the mean were removed and excluded from the analyses. All analyses were computed using IBM SPSS Statistics 20 package and were two-tailed.

The potential predictors of prosocial helping behavior, a dichotomous outcome variable, were analyzed using logistic regression. Assumptions of logistic regression were tested prior to analysis. There was no evidence of any problems with linearity or multicollinearity, nor were there any indications that errors were dependent. Considering additional potential problems with logistic regression analyses, incomplete information and complete separation were not relevant for this data set and there did not appear to be any problems with outliers after making the two eliminations described above.

The logistic regression analyses were computed with prosocial helping (0 = not help, 1 = help) as the dependent variable. The independent variables were all continuous: perspective-taking ability, empathic concern responses, and self-report empathy inclinations. Control variables included dichotomous variables of gender, customary volunteer habits, and two items assessing participants belief in the legitimacy of the prosocial helping measure, as well as continuous variables of baseline empathic concern levels and social desirability response bias. Missing data were excluded listwise.

Manipulation Checks

Manipulation checks were included to assess participants' confidence that the organizations did indeed exist, and that their information would actually be relayed to the respective organizations. Of the 148 participants in this study, 130 (88%) indicated that they believed the charitable organizations were real and legitimate and 111 (75%) participants reported being confident the volunteer information would be relayed to the respective

organization. These manipulation checks speak to the believability and apparent validity of the prosocial helping behavior measure, as the majority of participants believed the organizations did exist and would receive the information of anyway wishing to volunteer their time.

To further extend the manipulation check, chi-square tests were used to explore whether belief in the prosocial helping measure's cover story was associated with willingness to volunteer. Neither the chi-square test for the item measuring belief that the charitable organizations were legitimate ($\chi^2(2, N = 148) = 0.297, p = .586$) nor for the item assessing belief that information would be relayed ($\chi^2(1, N = 148) = 1.914, p = .167$) were statistically significant. These counts were roughly similar to those that would be expected by chance and any differences were not statistically significant, suggesting participants' belief in the legitimacy of the prosocial helping measure did not significantly influence their willingness to volunteer.

Descriptive Statistics

Thirty-two of the 152 participants demonstrated prosocial helping behavior by volunteering, leaving 116 participants who did not (4 cases were missing data). The mean score of perspective taking ability was 17.18 ($SD = 2.33$). Average empathic concern responses were 19.49 ($SD = 5.30$) for the distressing video clip and 18.63 ($SD = 5.94$) for the uplifting video clip. The mean self-report inclinations for perspective-taking was 17.88 ($SD = 4.72$) and 20.57 ($SD = 4.08$) for empathic concern. See Table 1 for additional descriptive statistics.

Interestingly, self-report inclinations for perspective-taking were not related to observed perspective-taking ability: $r = .008, p = .928$. Self-report empathic concern inclinations, however, were correlated with empathic concern responses at baseline ($r = .357, p < .001, r^2 = .127$), in response to the uplifting video clip ($r = .447, p < .001, r^2 = .200$), and in response to the distressing video clip ($r = .436, p < .001, r^2 = .212$).

Bivariate relationships in the data were initially examined before conducting the initial logistic regression. Accuracy on the perspective-taking task was the only variable that significantly predicted prosocial helping behavior bivariate: $t(146) = -2.47, p = .015$. Those who demonstrated prosocial helping behavior achieved higher perspective-taking scores ($M = 6.93$) than those who did not volunteer to help ($M = 18.06$).

Predicting Prosocial Helping Behavior

Empathy dimensions predicting prosocial helping behavior. The primary logistic regression analysis was conducted to examine the influence of perspective-taking, empathic concern, and empathy inclinations in predicting prosocial helping behavior, entered at step two, after controlling for the baseline empathic concern levels entered at step 1.¹

The overall logistic model was not significant and model fit indicators suggested that overall the model is poor. In the full model 79.4% of cases were correctly identified, identical to the number of cases correctly identified in the null model, indicating the full model was not explaining any more cases than would be expected by chance in the null model. Furthermore, the Likelihood ratio test indicates that the full model ($-2LL = 132.64$) accounted for slightly more of the deviance than the null model ($-2LL = 134.22$), but this minute difference of 1.55 was not significant, $\chi^2(6) = 1.55, p = .956$, suggesting the full model was not better than the null model. Correspondingly, the Pseudo- R^2 values for both Cox-Snell ($R^2 = .07$) and Nagelkerke ($R^2 = .10$) indicated a negligible effect size.

Based on the Wald test, perspective-taking ability was the only significant predictor of prosocial helping behavior after controlling for all other variables: $\chi^2(1, N = 141) = 4.28, p = .039$ (odds ratio = 1.27). For every additional correct perspective-taking response, or one unit change in perspective-taking ability, there was a 1.27 increase in the odds of demonstrating

¹ Interactions between these variables were also tested but they were not statistically significant so they are not reported here.

prosocial helping behavior. Empathic concern responses to both video clips and self-report perspective-taking and empathic concern inclinations did not approach statistical significance (see Table 2).

The hypothesis that dimensions of empathy would predict prosocial helping behavior was only partially supported. Observed perspective-taking ability was the only component of empathy that predicted prosocial helping behavior; empathic concern responses to both uplifting and distressing video clips as well as self-report empathic concern inclinations did not contribute to predicting prosocial helping behavior.

Perspective-taking ability predicting prosocial helping behavior. A second logistic regression model was computed in order to examine the robustness of perspective-taking ability in predicting prosocial helping behavior above and beyond potential confounding variables of social desirability, customary volunteer habits, gender, and manipulation checks. These control variables were entered at step 1 and perspective-taking ability was entered at step 2. Since the other components of empathy assessed in this study were not significant predictors in the initial model, they were dropped from further analyses.

Overall, this logistic model accounting for control variables was only marginally significant and model fit indicators suggest the overall model is poor. Based on the null model, 78.4% of cases were correctly identified, compared to 79.1% in the full model, indicating this full model with its controls explained slightly more cases than the null model. The Likelihood ratio test indicates that the full model ($-2LL = 147.31$) accounted for slightly more of the deviance than the null model ($-2LL = 154.54$), but this small difference of 7.23 was not significant, $\chi^2(6) = 7.23$, $p = .300$, suggesting the full model was not significantly better than the

null model. Correspondingly, the Pseudo- R^2 values for both Cox-Snell ($R^2 = .08$) and Nagelkerke ($R^2 = .12$) indicated a very small effect size.

Despite the poor overall model fit, perspective-taking ability remained a significant predictor of prosocial helping behavior even after controlling for social desirability, customary volunteer habits, gender, and manipulation checks: $\chi^2(1, N = 148) = 4.39, p = .036$ (odds ratio = 1.26). For every additional correct perspective-taking response, or one unit change in perspective-taking ability, there was a 1.26 increase in the odds of demonstrating prosocial helping behavior after controlling for potential confounding variables.

Observed perspective-taking ability predicted prosocial helping behavior above and beyond any influence of participants' social desirability response biases, customary volunteer habits, gender, and belief in the legitimacy of the prosocial helping behavior measure. As measured in this study, the relationship between perspective-taking ability and prosocial helping behavior appears to be robust, existing apart from the effects of several potentially confounding constructs.

Discussion

The purpose of this study was to replicate and extend past work highlighting empathy's role in prosocial behavior by examining the relative importance of specific components of empathy in relationship to prosocial helping behavior. The role of perspective-taking ability, experience of empathic concern responses, and self-report empathic inclinations were examined in a model predicting prosocial helping behavior. The hypothesis that these dimensions of empathy would predict prosocial helping behavior was only partially supported because perspective-taking ability proved to be the only significant predictor. The combination of empathy components assessed in this study did not create a good model for predicting prosocial

helping behavior, suggesting that other constructs are more relevant to prosocial helping behavior.

However, the single component of empathy that significantly predicted prosocial helping behavior, perspective-taking, appeared to have a robust relationship with prosocial helping. The higher one scored on the faux pas perspective-taking task the more likely one was to exhibit prosocial helping behavior. This relationship between perspective-taking ability and prosocial helping behavior remained strong even after controlling for participants' social desirability response bias, customary volunteer habits, gender, and beliefs about the legitimacy of the prosocial helping measure. These findings suggest that perspective-taking ability may play an important role in prosocial helping behavior, which is consistent with the idea that perspective-taking is a necessary component of empathy, permitting one to recognize the experience of others and then act in a helpful manner (Underwood & Moore, 1982; Johnson, Cushman, Borden, & McCune, 2013; Levy et al., 2002).

One implication of this finding involves perspective-taking interventions. If perspective-taking ability is important for prosocial helping behavior, then perhaps prosocial helping behavior can be boosted by enhancing perspective-taking ability. The results of the present study offer prospective support for the relevance of interventions designed to increase perspective-taking ability.

The present study leaves questions unanswered about the role of empathic concern responses and self-report empathic inclinations in prosocial helping behavior. It is surprising that empathic concern responses were not related to prosocial helping behavior, especially since the prosocial helping behavior measure was a direct follow-up to the measure of empathic concern (both relying on the same two video clips depicting individuals in need). Null findings are

inconclusive and problematic to interpret, nonetheless the potential implications of this lack of relationship merit consideration. Batson et al. (2007) argue that valuing the welfare of the person in need plays a key role, in conjunction with perspective-taking, in motivating empathy and prosocial behavior. Batson et al. posits that valuing the welfare of another person may be an even more relevant antecedent to prosocial behavior than empathic concern. The role of valuing the welfare of those in need was not assessed in this study, and it is possible that if it had been it would provide a link between empathic concern and prosocial helping behavior.

The lack of relationship between empathic concern and prosocial helping behavior in this study is inconsistent with other findings in the literature. For example, Johnson (2012) used a nearly identical measure of empathic concern responses but reported that participants who experienced greater empathic concern were more likely to demonstrate prosocial helping behavior. Perhaps the key difference between the present study and Johnson's, and possibly the source of the conflicting findings, is the rigor and meaningfulness of the prosocial helping behavior. Johnson utilized a commonly-used measure of prosocial helping behavior in which pens are "accidentally" dropped by the experimenter and participants are credited with demonstrating prosocial behavior if they help pick the pens up. The present study, in contrast, utilized a stringent and meaningful measure of prosocial helping behavior that came at a cost to participants, requiring considerable commitment of them. The difference between these two approaches to measuring prosocial behavior highlight the importance of considering precisely how prosocial helping behavior is measured and the quality of the prosocial behavior indicated by the measurement paradigm.

The findings regarding self-report empathic inclinations or dispositions are especially intriguing. Although observed perspective-taking ability was related to prosocial helping

behavior, self-report perspective-taking was not. Furthermore, self-report perspective-taking inclinations were not related to observed perspective-taking ability. These observations raise questions about the validity of self-report assessments of empathic tendencies, especially those related to perspective-taking. The present study cannot address empathic concern as directly since neither observed empathic concern response nor self-report empathic concern inclinations were significantly related to prosocial helping behavior. However, significant correlations between empathic concern responses and self-report of empathic concern inclinations were observed, suggesting self-reports of tendencies to experience empathic concern may be more valid than self-reports of perspective-taking ability. Overall, the results from the present study suggest that self-reports of empathic inclinations or dispositions should be treated with caution and supplemented with more objective observations.

Limitations

It is important to note that the present study is descriptive only and does not establish causality. Whether or not perspective-taking ability results in increased prosocial helping behavior cannot be addressed with this research design. The inability to address causality raises the possibility of another important limitation: it is possible that some other covariate explains the pattern observed with perspective-taking ability and prosocial helping behavior. For example, perhaps people who are dispositionally conscientious applied themselves more and thus performed better on the faux pas perspective-taking measure and were also more likely to demonstrate prosocial helping behavior. This possibility is important to consider given the somewhat tedious nature of the perspective-taking measure and the somewhat parallel requirement to attend to the printed descriptions of the charitable organizations in the prosocial helping behavior measure.

There are several limitations related to the generalizability of results due to threats to external validity. One is the distinctive characteristics of the population from which the sample is drawn. The sample is comprised of college students in emerging adulthood, so the results may not generalize to other age groups. Additionally, the sample is taken from a distinctive population of students at a private Christian university. The religious culture and background of the sample, such as socioeconomic status and education, may influence the participants' experience of the variables of interest, resulting in data that is not representative of the general population. These potential threats to external validity must be taken into consideration when generalizing the results of this study to other populations.

Biases due to sampling methods are another threat to external validity and generalizability. Although this particular sample of convenience was chosen intentionally so that all participants would be similarly motivated by class credit to participate, volunteer bias remains a concern. The students who declined to participate in the study may be inherently different from those who agree to participate, so the data may not reflect an accurate range of responses. Although every effort was made to minimize its effect, it was not ethically feasible to eliminate volunteer bias in the context of this study so biases inherent in the sampling method remain a potential threat to external validity.

The present study is preliminary in that it is the first, to the author's knowledge, to directly assess and compare the empathy components of perspective-taking ability, empathic concern responses, and self-report empathic inclinations all in relationship to prosocial helping behavior. As such, additional research is needed to substantiate the relative importance of perspective-taking, over other dimensions of empathy, in relating to prosocial helping behavior. Future research should utilize other measures of perspective-taking ability, especially measures

that are more engaging and less tedious. Including variations in measures of prosocial helping behavior would also be important to clarifying the relationship between empathy dimensions and prosocial helping behavior. Finally, future studies should also include a comprehensive personality assessment in order to control for potential influence of personality or temperament.

Conclusion

The primary contributions of the present study lie in the assessment of multiple dimensions of empathy which allow a careful examination how specific components of empathy are related to a rigorous and meaningful measure of prosocial helping behavior. In examining perspective-taking ability, empathic concern responses, and self-report empathic inclinations all in relationship to prosocial helping behavior, perspective-taking ability was identified as closely related to prosocial helping behavior. The higher participants' perspective-taking ability score was, the more likely they were to demonstrate prosocial helping behavior. This relationship between perspective-taking ability and prosocial helping behavior remained strong even after controlling for participants' social desirability response bias, customary volunteer habits, gender, and beliefs about the legitimacy of the prosocial helping measure. Interestingly, self-report perspective-taking inclinations were not related prosocial behavior, despite the strong relationship between observed perspective-taking ability and prosocial behavior. Altogether the results of the present study emphasize the importance of recognizing and assessing empathy as a multidimensional construct and not relying on self-report of empathic inclinations as primary measures of empathy.

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Tables

Table 1. Descriptive statistics of participants' perspective-taking ability, empathic concern responses, and self-report empathy inclinations.

Variable	<i>N</i>	Min	Max	<i>M</i>	<i>SD</i>
Perspective-Taking	148	10	20	17.18	2.33
Empathic Concern – Distressing	148	6	30	19.49	5.30
Empathic Concern – Uplifting	145	6	30	18.63	5.94
IRI Perspective-taking	144	1	27	17.88	4.72
IRI Empathic Concern	145	8	28	20.57	4.08

Table 2 Logistic regression analysis of perspective-taking ability, empathic concern responses, and self-report empathy inclinations predicting prosocial helping behavior.

Variable	Wald	<i>df</i>	<i>p</i>	Exp(B)	95% CI	
					<i>LL</i>	<i>UL</i>
Step 1						
Baseline Empathic Concern	0.70	1	.403	0.97	0.89	1.05
Step 2						
Perspective-Taking	4.28	1	.039	1.27	1.01	1.60
Empathic Concern – Distressing	0.01	1	.937	1.01	0.89	1.13
Empathic Concern – Uplifting	0.90	1	.343	1.05	0.95	1.18
IRI Perspective-Taking	0.17	1	.681	0.98	0.88	1.01
IRI Empathic Concern	0.18	1	.675	1.03	0.90	1.17

Note: The predictor that is significant at $p < .05$ is bolded. CI = confidence interval; *LL* = lower limit, *UL* = upper limit.

Table 3 Logistic regression analysis of perspective-taking ability predicting prosocial helping behavior after controlling for social desirability, customary volunteer habits, and gender.

Variable	Wald	df	p	Exp(B)	95% CI	
					LL	UL
Step 1						
Social Desirability	0.23	1	.630	0.96	0.80	1.14
Volunteer Habits	1.49	1	.223	2.16	0.63	7.41
Gender	1.24	1	.265	1.65	0.68	3.98
Legitimacy	2.20	1	.138	0.31	0.06	1.46
Relayed	3.37	1	.066	2.56	0.94	6.70
Step 2						
Perspective-Taking	4.39	1	.036	1.26	1.02	1.56

Note: The predictor that is significant at $p < .05$ is bolded. CI = confidence interval; LL = lower limit, UL = upper limit.