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Emotional Involvement with Grandparents as a Key Component of
Prosocial Development: Testing Empathic
Concern as a Mediator

Kathryn B. Gustafson

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Science

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ABSTRACT

Emotional Involvement with Grandparents as a Key Component of Prosocial Development: Testing Empathic Concern as a Mediator

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Current research shows that grandparents have made significant contributions to at-risk families. However, few studies have examined the benefits of grandparenting in non-at-risk populations. This study considered whether emotional involvement with a grandparent is associated with prosocial behavior in adolescent grandchildren and examines the mediating role of empathy and perspective taking. A longitudinal sample of 500 participants were taken from waves two thru five of the Flourishing Families Project (FFP) and used to construct a latent growth curve model. Results indicate that emotional involvement with a grandparent was positively linked with initial levels of prosocial behavior in grandchildren. Furthermore, results indicated that empathy and perspective taking partially mediated the connection between grandparent's involvement and the initial levels of prosocial behavior in their grandchildren. Discussion focuses on the distinct contribution grandparents give to families.

Keywords: grandparenting, prosocial development, flourishing families project

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Introduction

Some of the increasing financial and economic concerns of society today surround how to address the increased life expectancy of the current aging population. While society may need to make adjustments in economic and financial policy to accommodate social services that benefit the elderly population, many social scientists have clued into the positive aspects of a larger population of aging adults than in previous decades. One of the more recent explorations of the positive aspects of a large elderly population concerns the influence of grandparents. Grandparents today are more involved in the lives of their grandchildren because of increased life expectancy (often accompanied by better health in later years), divorce rates, and dual working homes (Attar-Schwartz, Tan, and Buchanan, 2009). Most published research related to grandparent involvement addresses the benefits for high-risk families who have experienced traumatic events, such as parental incarceration, drug addiction, divorce, or financial insecurities (Clingempeel, 1992). While this research is important, more attention needs to be paid to how grandparents can be a positive influence for their grandchildren more broadly (and not just in times of crisis) such as with non-custodial grandparent/grandchild relations.

Studies suggest that emotional closeness with a grandparent can either positively or negatively affect childhood outcomes. Attar-Schwartz, Tan, and Buchanan (2009) found that a higher level of education, more financial stability, and better health of the grandparent are linked to greater emotional involvement with grandchildren. Emotional closeness between grandparents and their grandchildren may result in more prosocial behaviors (PSB) in the grandchild (Yorgason, Padilla-Walker, and Jackson, 2011), such as a stronger sense of self, which can promote developing stronger relationships with peers (Kemp, 2005). Although these links have been established contemporaneously, few studies have examined the benefits of grandparents on

the longitudinal development of their grandchildren. The focus of this study is to examine the longitudinal link between the emotional connection of non-custodial grandparents and their grandchildren's prosocial development.

Theoretical Framework

Two theoretical concepts help explain the link between grandparents and their influence on their grandchildren's development of how they treat and interact with others. Social learning theory posits that family relationships remain relatively stable over time (Whitbeck, Simons, and Conger, 1991), meaning that relationships salient early in life still impact individuals later in life. This theory also suggests that individuals learn through social contexts, largely as a result of modeling and observational learning (Rotter, 1954). Although the frequency of contact (verbal, physical, or otherwise) with grandparents may decline in adolescence (Attar-Schwartz, Tan, and Buchanan, 2009), this theory's outlook on stability offers an explanation of why adolescents still report grandparents as influential in their lives (Pratt, Norris, Hebblethwaite, and Arnold, 2008).

The other theoretical concept used to define the meaning of the social and emotional connection between grandparents and their grandchildren's positive development is intergenerational solidarity. Intergenerational solidarity describes the "social cohesion between generations" (Bengtson and Oyama, 2007, p. 3) through different dimensions of family interaction and support. Although six conceptualized areas are used to measure intergenerational solidarity (Bengtson and Schrader, 1982; Roberts, Richards, and Bengtson, 1991), affectual and consensual solidarity may have the greatest importance in the development of PSB. Affectual solidarity describes sentiments of family members towards each other, while consensual solidarity describes the level of agreement over values and opinions (Bengtson and Oyama, 2007). These types of intergenerational solidarity may facilitate interactions between

grandparents and grandchildren, or at the very least influence the development of empathy and PSB in younger generations.

These two theoretical concepts work together, illustrating possibilities of how grandparent emotional involvement could positively influence PSB in their grandchildren. Social learning theory provides the context over time, while intergenerational solidarity provides the interaction and the mechanism for that long-term relationship. For example, social learning theory suggests that individuals internalize concepts through modeling. As King, Elder, and Conger (2000) point out, one of a grandparent's many roles is to be a mentor, which oftentimes involves modeling behavior that then contributes to the levels of internalization and agreement over shared values. Intergenerational solidarity, on the other hand, would encourage this type of mentoring or modeling into young adulthood.

Review of Literature

Grandparent Emotional Involvement

Although the grandparent-grandchild relationship has not been as clearly delineated as the parent-child relationship, there are still some strong positive associations between grandparents and their involvement with their grandchildren (Attar-Schwartz et al., 2009). Some of the positive associations include reduced adjustment difficulties (e.g. depression and distress) (Ruiz and Silverstein, 2007), lower internalizing and externalizing behaviors (Henderson, Hayslip, Sanders, and Loudon, 2009; Lussier, Deater-Deckard, Dunn, and Davies, 2002), as well as lower depressive symptoms (Ruiz and Silverstein, 2007) and higher rates of PSB and school engagement (Attar-Schwartz, Tan, Buchanan, Flouri, and Griggs, 2009; Yorgason et al., 2011). Grandparents typically serve several different functions in families including caregiver, playmate, friend, and mentor (King, Elder, and Conger, 2000) and even family historian (Wiscott

and Kopera-Fyre, 2000). A unique aspect of the grandparent-grandchild relationship is that a grandparent's influence may be felt indirectly (e.g. financial support given through the parent; Yorgason et al., 2011) and/or directly (e.g. child care arrangements; Attar-Schwartz et al., 2009). Because the roles of grandparental influence can be varied it is worthwhile to examine grandchild outcomes over time to see how grandparents' roles play a salient part in their positive development. In particular, it is important to consider ways that grandparents' emotional closeness is associated with the prosocial development of their grandchildren.

Prosocial Behavior

In the last several decades, there has been increased interest in positive aspects of human development, particularly child and adolescent development (Seligman and Csikszentimihalyi, 2000). Researchers have investigated the development of PSBs more thoroughly and in greater depth. PSB is defined as voluntary behavior aiming to help or benefit another person (Eisenberg and Fabes, 1998). Examples may include sharing with a friend, praising another, or even helping a stranger cross the street. This kind of voluntary helping behavior has been linked with less problem behavior and better performance in school (Caprara, Barbaranelli, Pastorelli, Bandura, and Zimbardo, 2000; Eisenberg et al., 2006; Miles and Stipek, 2006). Indeed, PSB appears to be a critical component of positive child development.

Cross-sectional research shows the reality of age-related changes in PSB (Eisenberg, Miller, Shell, McNalley, and Shea, 1991). Much of the literature has looked at various aspects of PSB in childhood. Several studies have assessed the effectiveness of intervention programs targeted toward increasing PSB in elementary school children and have found them to be effective (Solomon, Watson, Delucchi, Schaps, and Battistich, 1988; DeRosier, 2007). Some evidence suggests that younger children act prosocially more as a result of the cultural values of,

and socialization by, their parents and other influential agents (i.e. teachers) (Knight, Berkel, Carlo, and Basilio, 2011) than out of abstract or true moral reasoning (Eisenberg et al., 1991). Typically children engage in more PSB with people that they know (i.e. friends and family members) than toward strangers (Amato, 1990; Eberly and Montemayor, 1999) and these PSBs increase from childhood to adolescence (Eisenberg et al., 2006).

Moving ahead to college-age grandchildren, reports commonly indicate emotionally positive relationships between grandparents and their grandchildren, despite geographical distance (Harwood and Lin, 2000). Part of this emotional closeness may come as a result of the maturation and refinement of sociocognitive and socioemotional traits of individuals (Knight and Carlo, 2012) as they move from adolescence on to adulthood. Oftentimes college-age grandchildren also indicate a sense of respect and affection for their grandparents (Kennedy, 1990). Despite important developments with research in this area, motivations behind PSBs, especially in adolescence, have received less attention. Seeing as adolescence is a concentrated time of growth and development similar to that during pre-adolescence, it is equally important to examine how the development of PSBs are influenced during this time period.

Examining links between prosocial moral reasoning and PSBs is one way to understand what helps children and adolescents develop prosocial attitudes and behaviors. As children age and become less prone to hedonistic reasoning (Eisenberg-Berg, 1979) they seem to demonstrate a greater consistency between their prosocial attitudes and concurrent behaviors (Eisenberg, Miller, Shell, McNalley, and Shea, 1991). Essentially, trait development is a cognitive developmental process that moves children and adolescents from self-reflective sympathy and perspective taking to specific prosocial actions.

Trait development is a feature of the cognitive process involved in moral development (Caprara, Alessandri, and Eisenberg, 2012). Personal values and trait differences have been shown to account for the variance of prosociality among individuals (Alessandri, Caprara, Eisenberg, and Steca, 2009; Caprara et al., 2010); specifically, traits such as empathy, perspective taking (Eisenberg, Miller, Shell, McNalley, and Shea, 1991), ethnic identity (Knight and Carlo, 2012) and gratitude (Caprara, Alessandri, and Eisenberg, 2012). Given the social dimension of being prosocial, the connection between grandparents' involvement, and adolescent moral reasoning and value development warrants further study. The results of the current study may help illuminate how grandparent involvement is associated with higher levels of (or more consistent) PSBs (Attar-Schwartz et al., 2009).

Value Transmission and Development

Values are important in the development of PSB because they outline the goals to be achieved as well as promote the capacities needed to pursue those goals (Caprara, Alessandri, and Eisenberg, 2012). Most values that children declare or exhibit are associated with socialization from their parents; however, according to Knight, Berkel, Carlo and Basilio (2011) it is not until adolescence that individuals are able to connect their socialization to an underlying value system. As Eisenberg, Miller, Shell, McNalley, and Shea (1991) discovered, as children become adolescents they have increased cognitive capacity and alignment between attitudes and behaviors. Thus it is logical that Pratt, Norris, Hebblethwaite, and Arnold (2008) found that most adolescents reported their interactions with grandparents as mostly related to stories revolving around a learned lesson or value. It may be that as grandparents share their stories and recount family history, adolescents internalize values illustrated in the stories and affirmed by the story tellers. It is plausible then to think that grandparents' values, found meaningful and

internalized by the adolescents, may mediate the relationship between grandparent-grandchild relationships and grandchild PSB. Furthermore, this idea is supported by consensual solidarity. This connection would be similar to how values such as empathic concern mediate the relationship between parenting and PSB (Padilla-Walker and Christensen, 2010).

Control Variables in the Model

Age group. Grandchildren likely have different associations with their grandparents as they age. Studies suggest that grandparents play a positive role in their grandchildren's lives during childhood (Pratt et al., 2008). When the parent-grandparent relationship is strong, grandparents often interact with their young grandchildren as caregivers (Kennedy and Kennedy, 1993), providing financial support (Fingerman, Miller, Birditt, and Zarit, 2009), as well as general support in times of family need (Lussier et al., 2002).

There is also increasing evidence of the importance of grandparent-grandchild relationships in early adolescence (Yorgason et al., 2011), pointing to the fact that grandparents may be perceived even more positively during this time period than parents (Battistelli and Farneti, 1991). Changes in parent/child and grandparent/grandchild relations during adolescence may be attributed to the shift from a family based perspective (or influence) to a peer based one (Hodgson, 1998). Because non-residential grandparents are often considered more of a role model or exemplar outside of the immediate family, they may have a steady influence on their grandchildren during early adolescence.

Generational relationships. The strength of the grandparent-grandchild relationship varies based on the relationship between the parent and grandparent (Monserud, 2010). Oftentimes if the parent-grandparent relationship is strained there are direct implications on the time and quality of the relationship available to grandparents and their grandchildren (Monserud,

2008; Robertson, 1975). In contrast, if the parent-grandparent relationship is strong, there may be verbal spillover in the form and tone of stories and experiences related from parent to child concerning the grandparent, which positively or negatively influences the grandparent-grandchild relationship.

The other generational link regarding success or failure of the grandparent-grandchild relationship that should be considered is the parent-child relationship. Supportive and involved parents provide the foundation for prosocial development (Padilla-Walker, Christensen, 2010), and as such their impact on their child's prosocial development must be accounted for. Parents both set the example and precedent for the nature of the grandparent-grandchild relationship and provide opportunities for grandparents and grandchildren to interact. Without this important consideration, the relationship is likely to be weak (Attar-Schwartz et al., 2009).

Furthermore, if the children enter adolescence with poor parental relationships it may be that they are less inclined to take an interest in being actively involved with their grandparents (Monserud, 2010). In contrast, a strained parent-child relationship may be a cause for a closer relationship with grandparents, because the child sees the grandparent as a source of emotional stability (Henderson, 2009) and leadership that they feel is lacking from their parents, giving the child access to more resources for them that could foster being resilient.

Grandparent proximity. Having regular contact with a grandparent may also protect grandchildren from several risk factors. For example, continuity of support by grandparents can be beneficial for grandchildren during family transitions (Lussier et al., 2002; Ruiz and Silverstein, 2007; Werner and Smith, 1982). Oftentimes, the amount of support grandparents are able to give depends on the physical distance between grandparents and grandchildren. Residential distance from grandparents may also minimize the opportunity for grandparents to

foster any developmental growth in their grandchildren (Kivett, 1985; Mueller and Elder, 2003), let alone prosocial development.

The Current Study

The current study examined the development of PSB in connection with grandparent emotional involvement. A central feature of PSB is empathic concern and will be cast as a mediating factor between grandparent emotional involvement and PSB. Based on the reviewed literature, we anticipated that:

- 1. Grandparent emotional involvement will be positively related to the initial level and slope of their grandchildren's PSB over time toward family, friends, and strangers.**
- 2. Emotional involvement with a grandparent will be positively associated with empathic concern in their grandchildren, and empathic concern will, in turn, be related to the development of PSB. This hypothesis addresses the question as to whether or not empathic concern may mediate the link between emotional involvement with a grandparent and PSB over time.**

Method

Participants

The participants for this study were taken from waves two through five of the Flourishing Families Project (FFP). The FFP is an ongoing longitudinal study of inner family life involving families with a child between the ages of 10 and 14 at Time 1 (M age of child = 11.29, SD = 1.01). At Time 1, this study consisted of 500 (163 single parent and 337 two-parent) families, with a 96% retention rate at time 2 (N = 480, 155 single parent and 325 two-parent families), 91.8% at wave 3 (N = 459, 138 single parent and 321 two-parent families), 93.8% retention rate

at wave 4 (N = 469, 149 single parent and 320 two-parent families), and 92.6% retention rate at wave 5 (N = 463, 311 two-parent families, and 151 single parent families). Respondents reported on their choice of one grandparent. In the current sample, 41.6% of participants reported on emotional closeness to their maternal grandmother, 13.8% reported on emotional closeness to their maternal grandfather, 21% reported on emotional closeness to their paternal grandmother, and 8.2% reported on emotional closeness to their maternal grandfather.

Procedure

Participant families for the FFP were selected from a large northwestern city and were interviewed during the first eight months of 2007 for a wave 1 data sample. Subsequently, families were interviewed at yearly intervals for a second (2008), third (2009), fourth (2010), and fifth time (2011). Families were primarily recruited using a purchased national telephone survey database (Polk Directories/InfoUSA). Families were randomly selected from targeted census tracts that mirrored the socio-economic and racial stratification of reports of local school districts. All families with a child between the ages of 10 and 14 living within target census tracts were deemed eligible to participate in the FFP. Of the 692 eligible families contacted, 423 agreed to participate, resulting in a 61% response rate. In an attempt to more closely mirror the demographics of the local area, a limited number of families were recruited into the study through other means (e.g., referrals, fliers; n = 77, 15%). All families were contacted directly using a multi-stage recruitment protocol. Home videotaped interviews and questionnaires, completed by both parents and the child, were used to collect data from participants. (For more information on the recruitment and data collection of participants, please see Padilla-Walker, Harper, and Bean, 2011.)

Measures

Grandparent emotional involvement. Specific types of contact between the target child and their grandparents were assessed using a 6-item measure with modified items from Cherlin and Furstenberg (1985) and Harwood (2001; see Yorgason et al., 2011), with the final four items referring to the past year. Children responded in terms of how often specific activities occurred with their closest grandparent. The items in the scale were used to create a latent construct. Responses ranged from 1 (never) to 4 (always) with sample items such as, “I feel emotionally close to this grandparent” and “talked with you about problem you were having.” Higher scores indicate greater emotional closeness to a grandparent with the child. A reliability analysis showed that these items appropriately correlate (Cronbach’s $\alpha = .83$).

Adolescent empathic concern. Child’s empathy was assessed using a 14-item self-report measure with two subscales: Perspective Taking and Empathy (Davis, 1983). The Likert-type response scale ranged from 1 (strongly disagree) to 5 (strongly agree) and higher scores indicated greater empathy and perspective-taking ability. Sample items included, “I believe that there are two sides to every question and try to look at both,” and “When I see someone being taken advantage of, I feel kind of protective towards them.” Reliability for this measure is shown in prior research to be appropriate for Perspective Taking ($\alpha = .85$) and for Empathy ($\alpha = .72$; Barber, 2002). For the current sample, the Cronbach’s Alpha coefficient was found to be $\alpha = .84$ for the entire measure, $\alpha = .74$ for perspective taking, and $\alpha = .79$ for empathy.

Prosocial behavior. Positive behaviors and interactions with family were assessed using a 10-item adaptation of the Peterson and Seligman (2002) measure of PSBs. In this adaptation, the child is asked to assess their own PSBs as expressed with family members. Sample items included, “I help my family, even if it is not easy for me” and “I watch out for members of my family”), with responses on 5 point Likert-type scale ranging from 1 (Not like me at all) to 5

(Very much like me). Higher scores indicate higher levels of the Child's reported positive behavior with their family.

Children's PSB was measured using 18 items based on the Inventory of Strengths (Peterson and Seligman, 2004). The measure assesses PSB directed toward friends (9 items created for the Flourishing Families study), and PSB directed toward others/strangers (9 items, a modified version of the Peterson and Seligman original measure). Respondents answered on a 5-point Likert-type scale, ranging from 1 (*not like me at all*) to 5 (*very much like me*) in terms of how much they disagreed or agreed with statements about themselves. Sample statements included: "I help people I don't know, even if it is not easy for me," and "I voluntarily help my neighbors." These and other questions were adapted to apply to their actions toward family and friends. Higher scores indicate greater levels of kindness and generosity toward family, friends, and strangers. While no specific previous reliability information exists for the adapted version of the family and friend measures, a Cronbach's Alpha coefficient of $\alpha = .70$ was found for the original strangers measure (Peterson and Seligman, 2004). Cronbach Alpha reliability coefficients for wave two of this sample were found to be $\alpha = .90$ (family), $\alpha = .90$ (friends), $\alpha = .83$ (strangers). These reliability coefficients are representative of each PSB measure across all four waves.

Parent/child relationship. Parental involvement in their child's life and their view of their partner's level of involvement in the child's life were measured using eight items from the Inventory of Father Involvement (Hawkins, et al., 2002). Participants responded on a 5-point Likert scale ranging from 1 (*never*) to 5 (*very often*). Eight questions were regarding the respondent, and the other eight were questions regarding the respondent's partner. Sample questions include, "give encouragement to your child?" and "read books or magazines with your

child?” A higher score indicates a greater degree of mother or father involvement in the child’s life. Previous reliability coefficients (Hawkins et al., 2002) have been found to range from .69 to .80 across all 5 of the distinct subscales. For the shortened version used in this study we used the mother report, no subscales are evident, and reliability was calculated for the scale in its entirety ($\alpha = .61$).

Grandparent practical involvement. The involvement of grandparents in the family’s practical functioning was measured using a three item scale created for the current analysis, with response categories ranging from 1(never) to 4 (always). The parent reports of grandparent closeness were not separated by gender. The questions for this measure ask participants if a grandparent has “taken care of your child while you were working or not at home?,” “helped work on a family problem?,” and “helped out your family with money?” These questions help clarify the grandparents’ relationship with the family outside of their emotional relationship. The reliability coefficient was found to be $\alpha = .67$. Higher scores represent greater involvement by grandparents in the lives of the family and target child.

Analysis Plan

The primary aim of this study was to examine how the grandparent-grandchild relationship is related to the grandchild’s PSB towards friends, family, and strangers, as mediated by the grandchild’s value development (e.g. empathy and perspective taking). In order to examine this aim longitudinally, data for this study were analyzed in MPlus (version 7, Muthén and Muthén, 1998-2012) using latent growth curve structural equation modeling (SEM).

Three models, one for each type of PSB, were examined with an intercept and a linear slope across the second, third, fourth, and fifth waves of the Flourishing Families Project. The

estimated intercept provided the average initial level of PSB, while the estimated linear slope provided the rate of change in PSB over time.

Grandparent emotional involvement was used to predict variation in the intercept and slope of PSB, with empathic concern (measured by empathy and perspective taking) acting as a mediator to these associations. Specifically, indirect paths from grandparent involvement to the intercept and slope of PSB were directed through empathic concern and perspective taking. These models initially were estimated without the mediators (see Baron and Kenny, 1986), in order to assess links between grandparent emotional involvement and the three types of PSB. This was helpful in later exploring the extent of mediation captured through empathic concern measures. The Bollen-Stine bootstrap method with 2000 draws was used to calculate standard errors for the indirect effects in the estimated models (Muthén & Muthén, 1998-2012; Preacher & Hayes, 2008). Using the current dataset, there were missing data for each of the participants on each type of prosocial behavior, specifically 82 missing observations for family members, 71 for friends, and 77 for strangers. The main predictor in the model, grandparent emotional involvement, had 17.4% missing data. The two mediators, perspective taking and empathy, had less than 8.5% missing data. All of the control variables in the models had less than 14% missing data, with the exception of the missing observations measuring the parent - grandparent relationships (which had less than 20% missing data). These missing data were handled with Mplus using full information maximum likelihood (FIML).

Results

Each SEM model was tested for goodness of fit using the Chi-square test of model fit, the Root Mean Square Error of Approximation (RMSEA), and the Comparative Fit Index (CFI). The Chi-square test for model fit was significant for all three models: PSB toward family members

($\chi^2 = 239.724$, $df = 103$, $p < .001$), towards friends ($\chi^2 = 206.548$, $df = 103$, $p < .001$), and towards strangers ($\chi^2 = 205.922$, $df = 103$, $p < .001$), yet seemed appropriate given the sample size in the analyses. Providing a measure of absolute model fit, values for the RMSEA and CFI reached acceptable levels for each model: PSB towards family (RMSEA = .052, CFI = .948), towards friends (RMSEA = .045, CFI = .962), and towards strangers (RMSEA = .045, CFI = .964).

All of the outcomes were regressed on the control variables. In examining these regressions on the growth of the slope and intercept of PSB over time several covariates were important. Concerning PSB toward families, the parent child relationship still had a significant relationship ($\beta = .14$, $SE = .05$, $p < .01$) with the initial value. The initial levels of PSB towards friends were influenced by a grandparent's physical distance from a grandchild ($\beta = .113$, $SE = .048$, $p < .05$), the parent-grandparent relationship ($\beta = .152$, $SE = .061$, $p < .05$), and the gender of the grandchild ($\beta = .333$, $SE = .043$, $p < .001$). Regarding PSB toward strangers, the initial levels were influenced by the parent-child relationship ($\beta = .087$, $SE = .044$, $p < .05$), the parent-grandparent relationship ($\beta = .26$, $SE = .061$, $p < .001$), and income level ($\beta = -.108$, $SE = .046$, $p < .05$).

Concerning the growth of PSB over time toward family members (or the slope), the parent-grandparent relationship ($\beta = -.248$, $SE = .108$, $p < .05$) was salient. PSB toward friends was associated with significant, yet modest slope in relation to the parent-grandparent relationship ($\beta = -.197$, $SE = .10$, $p < .05$). Regarding the growth of PSB over time toward strangers was significantly associated with the parent-child relationship ($\beta = -.162$, $SE = .076$, $p < .05$) and the parent-grandparent relationship ($\beta = -.329$, $SE = .105$, $p < .01$).

As shown in figure 1, links between grandparent emotional involvement and the initial levels of PSB toward family were significant, with a one unit increase in closeness to a

grandparent being associated with nearly one quarter ($\beta = .243$, $SE = .061$, $p < .001$) of a standard deviation increase in PSB toward family. Concerning the link between grandparent emotional involvement and the initial levels of PSB toward friends, a one unit increase in closeness to a grandparent was linked with around one fifth ($\beta = .217$, $SE = .054$, $p < .001$) of a standard deviation increase in PSB toward friends. With reference to the link between grandparent emotional involvement and the initial levels of PSB toward strangers, a one unit increase in closeness to a grandparent was linked with over one quarter ($\beta = .256$, $SE = .052$, $p < .001$) of a standard deviation increase in PSB toward strangers. Grandparent emotional involvement with their grandchildren was significantly related to the growth (slope) of PSB only toward strangers ($\beta = -.297$, $SE = .092$, $p < .001$).

The second hypothesis was only partially confirmed. Emotional closeness to a grandparent had a significant association with empathy across the three models: PSB towards family ($\beta = .191$, $SE = .054$, $p < .001$), towards friends ($\beta = .196$, $SE = .054$, $p < .001$), and toward strangers ($\beta = .193$, $SE = .054$, $p < .001$). The results for perspective taking were similar, with the intercepts of family ($\beta = .197$, $SE = .056$, $p < .001$), friends ($\beta = .211$, $SE = .056$, $p < .001$), and strangers ($\beta = .198$, $SE = .056$, $p < .001$) significantly predicted by perspective taking.

Although empathy and perspective taking did not predict more PSB over time, they did predict a higher intercept. Regarding the role of empathy in predicting PSB, family ($\beta = .304$, $SE = .059$, $p < .001$) the friends ($\beta = .317$, $SE = .052$, $p < .001$), and strangers ($\beta = .322$, $SE = .050$, $p < .001$) also had significantly higher intercepts for individuals who had a good relationship with their grandparents. Perspective taking had similar trends in the results; the intercepts of family ($\beta = .196$, $SE = .056$, $p < .001$), friends ($\beta = .227$, $SE = .049$, $p < .001$), and strangers ($\beta = .320$, $SE = .047$, $p < .001$) were significantly higher for individuals who had higher reports of perspective

taking. However, perspective taking was significantly associated with increased PSB over time towards strangers ($\beta = -.217$, $SE = .083$, $p < .01$) and friends ($\beta = -.146$, $SE = .081$, $p < .10$) at a trend level.

To more fully assess whether empathic concern mediated the link between grandparent emotional involvement and PSB toward family members, friends, and strangers, I used a two-step approach (see Baron and Kenny, 1986). First, I examined the existing relationship between emotional involvement with a grandparent and PSB towards family members, friends, and strangers for significant links. Results from these models also indicated a significant association between emotional closeness to a grandparent and the intercept of PSB toward all three groups (family $\beta = .34$, $SE = .06$, $p < .00$; friends $\beta = .33$, $SE = .06$, $p < .00$; strangers $\beta = .49$, $SE = .09$, $p < .00$); however, there were only significant associations for the growth of PSB over time toward friends ($\beta = -.18$, $SE = .08$, $p < .05$) and strangers ($\beta = -.29$, $SE = .08$, $p < .00$). Second, I added empathic concern into the models to test whether empathy and perspective taking would mediate the associations in the first model. Results from the mediational models indicate that all of the associations that were significant in the first model were significant in the mediational models, with the exception of the slope predicted by grandparent emotional involvement toward friends. The bootstrapped models (2000 bootstraps) showed that all of the indirect links to PSB through empathic concern were statistically significant. As indicated by the results above, empathic concern only partially mediated the relationship between grandparenting and grandchildren's prosocial development over time.

Discussion

Using structural equation modeling (SEM), latent growth curves of PSB were estimated using data from 500 participants in the FFP. This study explored the links between closeness to a

grandparent and an adolescent's PSBs toward family, friends, and strangers over time. We used four time points to measure the growth of these three different types of PSB. Empathic concern was used as a mediator between emotional closeness to a grandparent and PSB growth through measuring the adolescent's levels of perspective taking and empathy.

Results partially confirmed the first hypothesis and support existing literature; early adolescents who have positive emotional relationships with their grandparents tend to reflect more PSBs toward family, friends, and strangers, as well as a significant growth in PSB toward strangers over time (Yorgason, Padilla-Walker, and Jackson, 2011). Social learning theory may account for the lack of growth of PSB over time toward family and friends. According to Whitbeck, Simons, and Conger (1991) social learning theory posits that relationships remain stable over time, thus individuals who have established relationships with friends and family members may not increase in their PSB because they began their relationship at such a high level. Although contrary to some existing literature that suggests individuals show more PSB towards individuals they know, as opposed to strangers (Amato, 1990; Eberly and Montemayor, 1999) social learning theory might also explain why PSB toward strangers does grow significantly over time – because these relationships are not established yet. Also, it is possible that the measure of grandparent emotional involvement may have a concurrent effect with PSB, rather than a predictive one across time. That is, these constructs may be associated at given points in time, yet initial levels in grandparent involvement may not be associated with PSB after months or years have passed.

The second hypothesis was also partially confirmed. Both components of empathic concern were significantly impacted by positive relationships with grandparents. However, empathy and perspective taking were only associated with all three types of PSB concerning the

initial level of PSB in grandchildren, indicating that adolescents who can empathize and take the perspective of another have higher initial levels of PSB than those who do not. These mediators were only significantly associated with the PSB toward strangers. These results also point out that empathic concern does not fully mediate the link between grandparent emotional involvement and PSB over time.

Pratt, Norris, Hebblethwaite, and Arnold (2008) explained that grandparents may partially exert their influence on their grandchildren through storytelling. It may be that there is a transfer of felt moral obligation through their storytelling, which may increase their grandchildren's empathic concern. Still, there remains the question of why empathic concern would not affect PSB over time in family members and friends. One consideration that might help explain these findings can be found in examining the significance of the intercepts for empathy and perspective taking. It is possible that empathy and perspective taking have an association with the growth of PSB over time, but that their influence toward family members and friends is more salient in later childhood as opposed to early adolescence. This would put the intercept findings as more of an end result of prosocial progress rather than a maxed out starting point. As an alternative explanation, empathic concern may be a necessary, but not a sufficient condition for the development of PSB. As such, more prosocial individuals may cite things such as empathy and perspective taking as motivations for their PSBs, but not all individuals who are empathic and can take the perspective of others are moved to prosocial action (see Walker, Lapsley, and Lawrence, 2004 for a review of this foundation).

In general this study is consistent with other research, in that it affirms that grandparents are important, even when taking into account the parent-grandparent and parent-child relationship. Furthermore, these results merit consideration because they suggest that

nonresidential grandparents play an important role in adolescent prosocial development toward family members, friends, and strangers, even in lower risk families.

Limitations and Future Directions

While the current study adds to the existing body of research, it has some important limitations to consider. As technologically advanced as our methods of research are, we cannot fully account for the context of an individual. As such, some may argue that more prosocial children have better relationships with their grandparents. However, as Yorgason and colleagues (2011) findings give further evidence for this study's findings, that grandparents do influence their grandchildren's prosocial behavior.

In addition, this data would be more effective in assessing current families if they were analyzed by grouping single parent and dual parent homes separately. These two types of families may be qualitatively different and therefore merit further examination. Currently, the model for this paper could not be tested across multiple groups due to pushing limits from the n/q rule (Kline, 2011). More research is needed among adolescents in single parent families, as well as with parents of non-residential grandparents is needed.

Future research needs to examine covariates over time. For example, more often than not the parent-grandparent relationship and grandparent gender are essential to the continuance of a strong grandparent-grandchild relationship. As important as these relationships are, they are beyond the scope of this study, and as such the parent-grandparent relationship is only included at one time point and grandparent gender is excluded.

Conclusion. Despite the limitations, which are incumbent in all research, the current study offers new perspectives and insights into the family domain of prosocial development in adolescence. This study represents the multiple generational nature of families and how families

influence each other not just from generation to generation, but across generations. Grandparents make a difference in families, and their influence is long term. Grandparents have a unique contribution as they prove to be another asset in the network of family support, and families would do well to work to strengthen these relationships in order to provide adolescents another stable resource.

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Table 1. Inter-item correlations between study variables among early adolescents

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. GP E Involvement	1													
2. Intercept	0.317	1												
3. Slope	-0.007	-0.305	1											
4. GP P Involvement	0.295	0.272	0.295	1										
5. P/C Rel	0.175	0.482	0.215	0.249	1									
6. GP Distance	0.11	0.531	0.176	0.174	0.588	1								
7. Race	0.074	0.455	0.198	0.239	0.386	0.419	1							
8. P/GP Rel	0.124	0.25	0.181	0.214	0.317	0.348	0.217	1						
9. Income	0.115	0.31	0.196	0.233	0.389	0.399	0.288	0.643	1					
10. Gender	0.166	0.333	0.163	0.296	0.418	0.343	0.225	0.614	0.587	1				
11. Mother's Education	0.107	0.315	0.255	0.203	0.34	0.489	0.323	0.589	0.638	0.568	1			
12. Empathy	0.08	0.41	0.222	0.23	0.371	0.392	0.44	0.275	0.355	0.326	0.347	1		
13. Perspective Taking	0.183	0.472	0.142	0.192	0.533	0.524	0.352	0.431	0.353	0.358	0.385	0.319	1	
14. Family Structure	0.093	-0.084	-0.019	0.046	-0.026	-0.045	-0.15	0.032	-0.044	-0.006	-0.056	-0.158	0.03	1

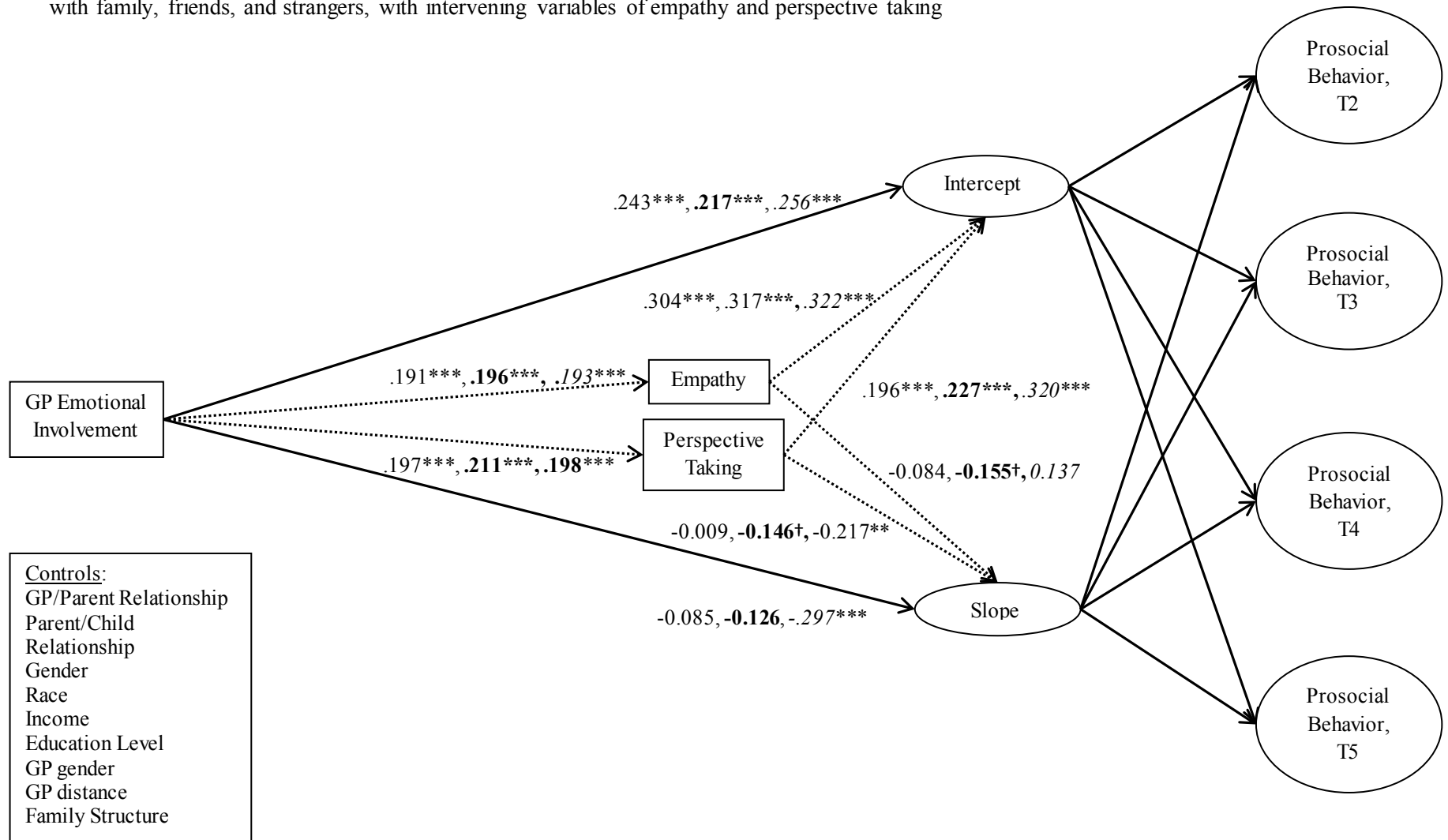
Note. GP E Involvement = grandparents' emotional involvement with grandchildren; GP P Involvement = grandparents' practical involvement with grandchildren; All correlations were calculated within a structural equation model (SEM) framework where GP emotional involvement was a latent variable, and the others were scale, observed variables. The Intercept and slope represent findings from the PSB toward strangers model.

Table 2. Decomposition table of standardized effects from grandparent emotional involvement predicting prosocial behavior over time with empathy and perspective taking as mediating variables.

Exogenous Variables	Endogenous Variables			
	Empathy	Perspective Taking	Intercept of PSB	Slope of PSB
GP Emotional Involvement				
Direct Effect	0.191, 0.196 , 0.193	0.197, 0.211 , 0.198	0.243, 0.217 , 0.256	ns, ns , -0.297
Indirect Effect	-, -, -	-, -, -	0.097, 0.110 , 0.126	ns, ns , -0.043
Total Effect	0.191, 0.196 , 0.193	0.197, 0.211 , 0.198	0.340, 0.327 , 0.382	ns, ns , -0.340
Empathy				
Direct Effect	-, -, -	-, -, -	0.304, 0.317 , 0.322	ns, ns , ns
Indirect Effect	-, -, -	-, -, -	-, -, -	-, -, -
Total Effect	-, -, -	-, -, -	0.304, 0.317 , 0.322	ns, ns , ns
Perspective Taking				
Direct Effect	-, -, -	-, -, -	0.196, 0.227 , 0.320	ns, ns , -0.217
Indirect Effect	-, -, -	-, -, -	-, -, -	-, -, -
Total Effect	-, -, -	-, -, -	0.196, 0.227 , 0.320	ns, ns , -0.217

Note. Values for outcomes are indicated as follows: Family, **Friends**, *Strangers*. A “-” indicates that a path is not in the model. Only significant pathways are included in the table.

Figure 1. Standardized coefficients for Grandparent emotional involvement as it relates to the intercept and slope of prosocial behavior with family, friends, and strangers, with intervening variables of empathy and perspective taking



Note: Results for adolescent’s PSB towards family, friends, and strangers are indicated in the diagram as follows: PSB family, **PSB friends**, *PSB strangers*.
 *** $p \leq .001$; ** $p \leq .01$; * $p \leq .05$; † $p \leq .10$