Empathy and Helping Behavior in Adolescence:

The Role of Parent-Child Relationships[1]

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Abstract

Relations between parent-child relationship qualities and empathy and helping behavior are important to consider in adolescence, given that both change and stability occur in the parent-adolescent relationship during this time. The role of circular functions in the parent child relationship is informed by a relational developmental systems theories (RDST) approach to understanding human development. These theoretical perspectives suggest that characteristics of individuals promote differential actions in socializing others and provide feedback to the person, affecting his or her future individual development. Consistent with such relations, researchers have found positive associations between parent-child relationship qualities and child empathy and, as well, prosocial behavior. In order to elucidate the complexities of the parent child relationship in promoting empathy development and begin to investigate how empathy and helping behavior develop within a RDST model of parent-child relationships, this research used data from Grades 5 and 9 of the 4-H Study of Positive Youth Development to examine if adolescents' perceived maternal warmth and family connection differentially predict empathy and helping behavior. Results indicated that perceived maternal warmth and family connection did not predict empathy or helping behavior. However, empathy did predict adolescents' helping behavior. The results and limitations of this study are discussed and suggestions for future research are made.

Keywords: perceptions of parent-child relationships, empathy, helping behavior, circular functions, relational developmental systems theories

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Empathy and Helping Behavior in Adolescence: The Role of Parent-Child Relationships

In contemporary developmental science, relational developmental systems theories (RDST) are currently at the cutting edge of theoretical conceptualizations (Overton, 2013; Overton & Lerner, 2012). This focus is derived from the role that such models play in understanding the mutually influential relations between developing people and their changing contexts (Overton, 2013). For instance, in one model consistent with RDST, developmental contextualism (Lerner, 1991, 2002), the notion of circular functions suggests that characteristics of individuals promote differential actions in socializing others and provides feedback to the person, affecting his or her future individual development (Schneirla, 1957).

Arguably, both in regard to circular functions and developmental contextualism and, in RDST more generally, the most prominent instance of the use of these models occurs in the study of family-child relationships (Lerner, 2004; Lerner, Rothbaum, Boulos, & Castellino, 2002; Lerner & Spanier, 1978; Lewis & Rosenblum, 1974). Key questions pertaining to child-family relationships are: What characteristics of parents affect what characteristics in children, and what is the nature of the bidirectional and reciprocal relationships involved in these parent-child relationships? In addition, once this descriptive information is obtained, another key question that emerges is: Are there particular instances of parent-child relationships that promote positive healthy functioning in the child, the parents, and the family? A key area of research pursuing both of these issues has occurred in regard to the domain of empathy and prosocial behavior in youth.

Parent-Child Relationships and Empathy Development

Empathy has been defined as an affective response that results from the comprehension or apprehension of another person's circumstance or emotional state (Eisenberg, 2007; Eisenberg

& Fabes, 1990). This reaction is parallel to what the other person is feeling or would be expected to feel. Extant theory and research in developmental science suggest that empathy development is crucial to study in that it relates to the development of prosocial actions among youth (Eisenberg, 2007; Eisenberg, Fabes, & Spinrad, 2006; Hastings, Utendale, & Sullivan, 2007).

There are multiple contextual influences on the development of empathy (e.g., teachers, school, peers, and youth development programs). One important context of empathy development is the mutually influential parent-child relationship (e.g., Eisenberg, 2007; Malti, Eisenberg, Kim, & Buchmann, 2013; Strayer & Roberts, 2004). Given evidence that the parent-child relationship is bidirectional and reciprocal (i.e., that it involves "circular functions"; Schneirla, 1957), it is important to take a RDST approach to studying the parent-child influence on empathy development (Overton, 2013; Overton & Lerner, 2012).

RDST emphasize that developmental trajectories across ontogeny are shaped by mutually influential relations between characteristics of the individual (e.g., values, behavior, cognitions) and features of his or her ecology (e.g., family, school, neighborhood); these relations are represented as individual ← → context relations (Overton, 2013; Overton & Lerner, 2012). When these individual ← → context relations are mutually beneficial, they are termed adaptive developmental regulations (Brandtstädter, 1998, 1999). Consistent with such relations, researchers have found positive associations between parent-child relationship qualities (e.g., parental warmth, responsiveness) and child empathy (e.g., Zhou et al., 2002) and, as well, the positive development of youth (e.g., Eisenberg et al., 2014).

In addition, research and theory suggest that individuals who experience others' emotions are likely to engage in prosocial behavior; defined as voluntary behavior aimed at benefiting another person (Eisenberg & Fabes, 1990; Eisenberg, Fabes, & Spinrad, 2006; Hoffman, 2008).

Prosocial behavior encompasses the ability to think about the rights or well-being of others, to feel empathy or concern for that person, and to act in a way that aids them (Eisenberg, Hofer, Sulik, & Liew, 2014; Vittorio Caprara, Alessandri, & Eisenberg, 2012). Internal processes such as empathy, sympathy, and moral reasoning are believed to motivate prosocial behavior (Einolf, 2008; Eisenberg, Fabes, & Spinrad, 2006). Given this evidence, it is expected that empathy and prosocial behavior, indexed as helping behavior, would be related and both impacted by qualities of the parent-child relationship.

Maternal warmth and family connection are key qualities of the parent-child relationship and mirror parenting qualities first studied by Harlow (1958) in the study of social development in rhesus monkeys. Findings suggest that the rhesus monkeys raised by soft-cloth covered inanimate surrogate mothers were healthier and performed better socially when compared to monkeys raised by wire mothers (e.g., Harlow & Zimmermann, 1958). In addition, research assessing the strength of security in parent-child relationships (i.e., through the Strange Situation; Ainsworth & Bell, 1970; e.g., Ainsworth, Belhar, Waters, & Wall, 1978) indicates the importance of parent-child relationship qualities such as responsiveness, warmth, and connection in shaping social development and prosocial development.

Attachment research has stressed the importance of an individual's understanding of the world, and of him or herself in the framework of the world (i.e., internal working model) (Bretherton, 2005). Furthermore, based on early attachment experiences (i.e., individually experienced parental relationship qualities such as availability, warmth, connection, and responsiveness), each individual builds an internal working model and, as such, an understanding of him or herself in the context of the world (Bretherton, 2005). These internal models enable a person to anticipate and interpret another's behavior and plan an appropriate reaction (Bretherton,

2005). These internal models would be expected to equip the individual with the ability to express empathic feelings and the capacity to understand another's behavior.

Moreover, research from an attachment perspective has found that qualities of the parent-child relationship have been related to empathy. Parental warmth and responsiveness have been related to individuals' empathic qualities (Zhou et al, 2002), and research has found that secure attachment (i.e., confidence in a parent's availability and responsiveness) fosters empathy development and an increased motivation to help others in need (e.g., Mikulincer, Shaver, Gillath & Nitzberg, 2005). In contrast, attachment insecurity (i.e., low trust in a parent's responsiveness, availability, and support) has been found to result in lower levels of empathy (Mikulincer, Shaver, Gillath, & Nizberg, 2005). Thus, positive characteristics of the parent-child relationship such as warmth and responsiveness have been found to help foster the development of other-oriented connection.

In addition, although research suggests that the parent-child relationship is involved in shaping empathy development in youth (e.g., Eisenberg, 2007; Eisenberg et al., 2014; Strayer & Roberts, 2004), less is known about how specific parent-child relationship qualities (e.g., maternal warmth, family connection) may work together to promote empathy development in youth and, in turn, prosocial behavior (e.g., helping behavior). In addition, although many qualities of the parent-child relationship and empathy development have been considered such as warmth and support, relatively little is known about how connection as a part of the parent-child relationship may be related to empathy development. Therefore, the present research aims to explicate how the qualities of parent-child relationships (i.e., perceived maternal warmth, family connection) identified in the literature as key components of these relations relate to empathy development. Both maternal warmth and family connection are qualities of the parent-child

relationship that have been found to promote positive socio-emotional functioning (Ainsworth et al., 1978; Davidov & Grusec, 2006) and, therefore, family connection and maternal warmth are key aspects of the parent-child relationship that would be expected to impact empathy development and helping behavior.

These ideas are illustrated by the model shown in Figure 1. Developmental regulations exist between the parent and the child. These parent ← → child relationships are bidirectional and reciprocal (i.e., "circular functions"; Schnierla, 1957). They involve relations between (a) attributes of the parent, such as values and relationship qualities (e.g., warmth, connection, support), and parental developmental level (e.g., age of parent, parity status); and (b) attributes of the child, such as relationship qualities (e.g., connection, warmth) and values. The bidirectional actions of the parent on the child and the child on the parent promote the development of empathy and, subsequently, behaviors that may be linked to empathy, for example, prosocial actions such as helping (Eisenberg, 2007; Eisenberg, Fabes, & Spinrad, 2006). In turn, the development of helping behavior acts on the context of the parent-child relationship (represented by the feedback loop) and promotes future individual ← → context relations that continue the process of empathy development and the development of prosocial behavior across the life span. In addition, the broader ecology of human development (e.g., resources such as schools and youth development programs) is represented. For the purpose of the present study, I will focus on one part of the model and look at perceived maternal warmth and family connection and examine if these constructs predict empathy and helping behavior.

Although Figure 1 would apply to both childhood and adolescence, it may be especially beneficial to consider in adolescence, given that major social changes occur in the parent-adolescent relationship during this time, and that adolescence is a time of heightened plasticity.

For example, research has documented that adolescents spend increasingly more time with peers and spend less time with parents across adolescence (Brown & Larson, 2009). As a result one may question whether, in adolescence, the parent-child relationship qualities of maternal warmth and family connection remain significant. Although adolescents are spending increasingly more time with peers across adolescence, the close and warm relationships that adolescents form early on with parents tend to endure across adolescence (Laursen & Collins, 2009). Furthermore, core values resulting from parent-child relationships, such as faith, education, and staying close to family, remain present across adolescence (Douvan & Adelson, 1966). Moreover, research on peer relationships has found that adolescents choose peer groups on the basis of core value similarities (Laursen & Collins, 2009). Peers are an extension of the socialization influences of the parent. As a consequence, the current research used parent-child relationship data reflecting core values (i.e., connection, warmth) to represent qualities of the parent-child relationship that are likely to remain across adolescence.

To enable us to bring data to bear on the role of perceived maternal warmth and family connection in predicting empathy and prosocial behavior, I used data from the 4-H Study of Positive Youth Development (PYD; Lerner et al., 2005, 2011). The 4-H Study data set contains information about youth of the key ages of interest here, and includes variables related to relevant youth outcomes. Although the theoretical model (Figure 1) for the development of empathy within the context of the parent-child relationship is presented, the reciprocal relations cannot be assessed in the current study, since the data set includes only youth-reported perceived maternal warmth and family connection and empathy and helping behavior scores. Accordingly, the key questions of the present study are described below.

Research Questions

This research used data from a sample of youth who participated in the 4-H Study of

PYD (e.g., Lerner et al., 2005). The times of interest were early adolescence and middle

adolescence, when youth have made the transition from middle school to high school and, as

well, when youth are spending more time with peers and less time with parents (e.g., Brown &

Larson, 2009), and when core values resulting from the parent-child relationship remain present

(Douvan & Adelson, 1966). These two time points are developmentally important because the

changes that occur during adolescence (i.e., biological, cognitive, social) are bracketed by the

transition from middle school to high school (Lerner & Steinberg, 2009). Therefore, with a focus

on adolescence, and in an attempt to begin to explore a RDST model of parent-child

relationships and empathy development, youth-reported perceived maternal warmth and family

connection in Wave 1 (Grade 5) of the 4-H Study were used to predict empathy and helping

behavior scores in Wave 5 (Grade 9). This assessment was used to investigate the possible

differential associations between parent-child relationship qualities and empathy, and parent-

child relationship qualities and helping behavior.

Maternal education, as a measure of socioeconomic status (SES), as well as gender, were

used as control variables due to past research that has suggested gender and socioeconomic

differences in empathy and prosocial behavior (e.g., Piff, Kraus, Côté, Cheng, & Keltner, 2010;

Van der Graaff et al., 2014). In addition, maternal education has been associated with qualitative

differences in parenting (Bornstein & Bradley, 2003; Bornstein et al., 2003). Thus, due to

suggestions from past research that there are gender and SES differences in the variables used in

the present study, I controlled for both SES and gender.

Question 1: Do adolescents' perceived maternal warmth and family connection predict empathy scores, when controlling for gender and SES?

Hypothesis: Given that previous research has shown that there are associations between parent-child relationship qualities and empathy, I hypothesized that perceived maternal warmth and family connection would predict in empathy scores.

Question 2: Do adolescents' perceived maternal warmth and family connection predict helping behavior scores, when controlling for gender and SES?

Hypothesis: Previous research has shown that qualities of the parent-child relationship are related to empathy and prosocial outcomes. Therefore, I hypothesized that perceived maternal warmth and family connection would predict helping behavior scores.

Method

Full details of the 4-H Study of PYD have been presented in several other publications (Lerner et al., 2005, 2011). Therefore, I present here only the features of the methods relevant to the present study, which includes data from Wave 1 and Wave 5, that is, Grades 5 and 9.

Participants

Overall, across all eight waves of the study, 7,071 youth (59.9% female) in 42 states have been surveyed, along with 3,173 of their parents. Across waves, 3,234 of these students were tested two or more times.

In Wave 1, 1,722 youth from 28 states were surveyed along with 1,140 of their parents. These youth were 51.6% female, with a mean age of 10.97 years (SD = 0.53). Self-reported race for these youth was American Indian, 3.8%; Asian American, 3.3%; African American, 7.5%; Latino/a, 16.1%; European American, 46.1%; and Multiracial, 6.6%.

In Wave 5, 1,053 youth were surveyed from 17 states along with 23 of their parents.

These youth were 60.2% female, with a mean age of 15.01 years (SD = 0.73). Self-reported race

for these youth was American Indian, 3.3%; Asian American, 3.3%; African American, 9.9%;

Latino/a, 12.7%; European American, 63.8%; and Multiracial, 3.1 %.

The current research used a highly select subsample of 172 youth who participated in

both Wave 1 (Grade 5) and Wave 5 (Grade 9) and had complete data for measures of perceived

maternal warmth, perceived family connection, empathy, gender, and maternal education. Such

consistency in participation was useful in assessing the relations between perceived maternal

warmth and family connection in Grade 5 and the outcome variables of empathy and helping

behavior in Grade 9. Within this subsample, these youth were 57.6% female. Mean age for the

youth in Wave 1 was 10.94 (*SD* = .38) and in Wave 5, M_{age} = 15.10 (*SD* = .39). Self-reported

race was 7% American Indian, 5.2% Asian American, 1.2% African American, 10.5% Latino/a,

57% European American, and 1.7% Multiracial. In addition, 17.4% of participants reported race

inconsistently across the two waves used in this study.

Measures

In the current study, indices of several constructs were used to investigate the role of

parent-child relationships qualities in predicting empathy and helping behavior. These measures

included perceived maternal warmth, family connection, empathy, and helping behavior.

Maternal education was used as a measure of socioeconomic status (SES).

Maternal Warmth. The eight-item maternal warmth subscale of the Child's Report of

Parenting Behaviors Inventory (CRPBI; Schludermann & Schludermann, 1970) is used to assess

maternal warmth as an ecological asset. The CRPBI is a widely used self-report measure of

children's assessment of parenting practices. Maternal warmth was conceptualized as behaviors

that indicate acceptance, nurturance, support, and a feeling of being loved and wanted by the

parent (Gray & Steinberg, 1999). Examples of maternal warmth items include "My mother speaks to me in a warm and friendly way" and "My mother cheers me up when I am upset." The response format ranges from 0 = *almost never* to 4 = *almost always*. Higher scores indicate higher warmth and nurturance.

Overall, the CRPBI has adequate reliability (Cronbach's alpha = .80; Schludermann & Schludermann, 1970). With regard to validity, factor analyses have indicated that Warmth is a replicable factor (Schwarz, Barton-Henry & Pruzinski, 1985). There is evidence for adequate convergent and discriminant validity, for example, correlations between ratings by siblings were $r = .50$ ($p < .01$) for maternal warmth; correlations between adolescents and parents for warmth were in the .4 range (Schwarz et al., 1985). In this subsample, Cronbach's alpha was .95 in Wave 1.

Connection to Family. We used six items from the Search Institute's Profiles of Student Life-Attitudes and Behaviors (PSL-AB) questionnaire (Leffert, Benson, Scales, Sharma, Drake & Blyth, 1998) to create the Connection to Family scale. Through an exploratory factor analysis of the PSL-AB items, Theokas et al. (2005) developed this scale and used it to help assess overall level of connection. All items are measured on a Likert-type scale, and data for at least four items are required to calculate a scale score. Sample items include "I get along with my parents" and "I have lots of good conversations with my parents." Cronbach's alphas for the 6-item scale range from .79 to .91 across Waves 1 to 8 of the 4-H Study. In this subsample, Cronbach's alpha was .81 in Wave 1.

In Grade 5, the response format ranged from 1 = *strongly agree* to 5 = *strongly disagree* for the first five items. These items were then reverse coded, such that higher scores indicated higher connection to one's family. The sixth item, "If you had an important concern about

drugs, alcohol, gender, or some other serious issue, would you talk to your parent(s) about it?" is

scored on a scale from 0 to 4, such that 0 = *no*, 1 = *probably not*, 2 = *I'm not sure*, 3 = *probably*,

and 4 = *yes*.

Helping Behavior. To assess youth helping behaviors, we used a set of seven questions

adapted from the Search Institute's Profiles of Student Life – Attitudes and Behaviors

questionnaire (PSL-AB; Leffert, Benson, Scales, Sharma, Drake, & Blyth, 1998). For the

purpose of this study, we defined helping behaviors as any activities that one is not required to

do, but does to improve things or make things easier for other people. We provided the

previously stated definition and asked youth how often they help out at home, at school, and at

church; how often they help a friend, a neighbor, and someone they do not know; and how often

they help make their city or town a better place for people to live. The response options ranged

from 0 = *never* to 4 = *very often*. In this subsample, Cronbach's alpha was .79 in Wave 5.

Empathy. Empathy was measured using four experimental items we adapted from the

Empathic Concern (EC) subscale of the Interpersonal Reactivity Index (IRI; Davis, 1980, 1983).

Example items are: "When I see someone being taken advantage of, I want to help them" and

"When I see someone being treated unfairly, I do not feel sorry for them." Participants indicated

how well the statements described them. Response options range from 1 = *not well* to 5 = *very*

well. In this subsample, Cronbach's alpha was .49 in Wave 5. In the full Wave 5 sample,

Cronbach's alpha was .47.

Maternal Education. Maternal education was used as an indicator of socioeconomic

status. The items pertinent to maternal education asked about mother's/guardian's education

level. There are nine categories, from 8th Grade or less to Doctoral degree, with higher scores

indicating higher levels (i.e., more years) of formal education. The variable was recoded to

reflect the number of years of education, and ranges from 8 to 20. In the present study, the mean

number of years of maternal education was 14.18 (*SD* = 2.17).

Procedure

In Waves 1 (Grade 5) through 3 (Grade 7) of the 4-H Study, data collection from youth

was conducted by trained study staff or, at more distant locations, hired assistants. A detailed

protocol was used to ensure that data collection was administered uniformly and to ensure the

return of all study materials. After Wave 1, youth who were absent on the day of the survey or

were from schools or programs that did not allow on-site testing were contacted by e-mail, mail,

or phone, and were asked to complete and return the survey to the researchers. Beginning in

Wave 5, youth completed the survey online unless they requested a paper survey. Parents

completed online or paper surveys. Paper surveys were delivered to families' homes by their

children or through the mail (in the latter case, return postage was provided).

<div align="center">Results</div>

Preliminary analyses were conducted to describe the sample as well as the variables of

interest (i.e., perceived maternal warmth, perceived family connection, empathy, helping

behavior). Table 1 presents the means, standard deviations, and Pearson product-moment

correlations among maternal warmth, family connection, empathy, and helping behavior

variables. Youth-reported maternal warmth and family connection were highly related and the

relation between youth-reported empathy and helping behavior was moderate. There were no

relations between either of the first two variables and either of the latter two variables. The lack

of relations was not due to a lack of variability in the scores.

Insert Table 1 about here

Question 1: Do adolescents' perceived maternal warmth and family connection predict empathy scores, when controlling for gender and SES?

To investigate the hypothesis that perceived maternal warmth and family connection predict empathy development scores in this sample, I used hierarchical regression models with Grade 5 perceived maternal warmth and family connection ratings and Grade 9 empathy scores. The initial model (Model 1) examined two control variables – gender and maternal education – as predictors of Grade 9 empathy scores. Each of these control variables and the overall model, $F(2, 169) = 16.72$, $p<.001$, $R^2 = 0.17$, significantly predicted Grade 9 empathy scores. Model 2 then included maternal warmth and family connection as predictors of Grade 9 empathy scores; this overall model was also significant, $F(4, 167) = 9.18$, $p <.001$, $R^2 = 0.18$ but did not predict significantly more of the variance in empathy scores than Model 1 ($\Delta R^2 = .02$, $p > .05$). In this model, perceived maternal warmth and family connection variables were not significant predictors of Grade 9 empathy scores. Table 2 presents the results of these models.

Insert Table 2 about here

Question 2: Do adolescents' perceived maternal warmth and family connection predict helping behavior scores, when controlling for gender and SES?

To investigate the hypothesis that perceived maternal warmth and family connection predict helping behavior scores in this sample, I used hierarchical regression models with Grade

5 perceived maternal warmth and family connection ratings and Grade 9 empathy and helping behavior scores. The initial model (Model 1) examined two control variables – gender and maternal education – as predictors of Grade 9 helping behavior scores. The overall model and the control variable of maternal education level (β = .07, p < .01) significantly predicted Grade 9 helping behavior scores, $F(2, 169) = 6.26$, $R^2 = 0.07$, $p<.01$. Model 2 then included perceived maternal warmth and family connection as predictors of helping behavior scores; this overall model was also significant, $F(4, 167) = 1.78$, $p<.05$, and predicted 9.2% of the variance in Grade 9 helping behavior scores. Model 2 did not predict significantly more of the variance in helping behavior scores than Model 1. In this model, perceived maternal warmth, family connection variables, and the control variable of gender were not significant predictors of helping behavior scores.

Model 3 was added as a result of the moderate correlation (shown in Table 1) found between empathy and helping behavior scores. The addition of Model 3 tested whether the relation between empathy scores and helping behavior scores in Grade 9 differed when controlling for the other variables in the model (i.e., gender, maternal education, perceived maternal warmth, family connection). This third model demonstrated that empathy predicted helping behavior scores (β = .27, p < .001). The control variable of maternal education was also significant (β = .05, p < .05). The overall model was significant, $F(5, 166) = 2.49$, p <.001, and predicted 16.1% of the variance in Grade 9 helping behavior scores, significantly more than Model 2 (ΔR^2 = .07, p < .001). This finding suggests that empathy scores in Grade 9 predict helping behavior scores in Grade 9, above and beyond all the other variables tested in Model 3. Table 3 presents the results of these models.

Insert Table 3 about here

Discussion

To begin to explore a RDST model of the mutually influential relations between qualities of the parent-child relationship, and empathy and helping behavior in adolescence, I investigated whether perceived maternal warmth and family connection in Grade 5 predicted empathy and helping behavior scores in Grade 9. In addition, I investigated whether empathy scores in Grade 9 predicted helping behavior scores in Grade 9. Due to the focus on adolescence, and to begin to explore a RDST model of parent-child relationships, data from Wave 1 (Grade 5) and Wave 5 (Grade 9) on the 4-H Study of PYD were used.

To this end, the first research question investigated if perceived maternal warmth and family connection in Grade 5 predicted adolescent empathy development in Grade 9. The results revealed no significant links among maternal warmth, family connection, and empathy, when controlling for gender and maternal education. In addition, the second research question investigated if perceived maternal warmth and family connection in Grade 5 predicted adolescent helping behavior in Grade 9. The present study found no relation between parent-child relationship qualities and helping behavior, when controlling for gender and maternal education.

In short, then, measures of perceived maternal warmth and family connection did not generally relate to adolescent empathy and helping behavior variables. Indeed, only within Wave 5 (Grade 9) did empathy scores predict helping behavior scores. This finding may suggest, at least insofar as measures of perceived parent-child relationship qualities are concerned, that there are few predictive relations between early and middle adolescence (i.e., between Grade 5 and

Grade 9). These findings are inconsistent with the literature. Existing research has documented

the importance of qualities of the parent-child relationship (e.g., parental warmth) in the

development of empathy (Eisenberg et al., 2014; Strayer & Roberts, 2004; Zhou et al., 2002).

     In turn, the measure of empathy used in the current study predicted helping behavior

scores, when controlling for perceived maternal warmth, family connection, gender, and

maternal education. Despite a lack of support for the research hypotheses, the analyses

nonetheless showed that empathy scores predicted helping behavior and predicted significantly

more of the variance in helping behavior than other variables in the models I tested (i.e., gender,

maternal, education, perceived maternal warmth, family connection). This finding was not

unexpected, given previous research on the relation between empathy and helping behavior

(Einolf, 2008; Eisenberg, Fabes, & Spinrad, 2006), but provides information beyond the

moderate correlation between empathy and helping behavior. This finding suggests the

importance of studying not just prosocial emotions, but also cognitions and behaviors. Empathy

is a multidimensional construct (Davis, 1980, 1983) that should be studied as such. Moreover,

future studies of the relations between dimensions of empathy (i.e., empathic concern,

perspective taking) and prosocial behavior should be conducted to better understand the

connections between prosocial emotions, cognitions, and behavior. This study only used items

from the empathic concern subscale of the measure, but future studies should add measures of

perspective taking to look at the relations between parent-child relationship qualities and

dimensions of empathy over time.

     In addition, the control variables of interest – mother's education (as an index of SES)

and participant gender – were significant predictors of empathy scores. As well, mother's

education was significant in predicting helping behavior scores. The gender effects are not

entirely surprising given that past research has suggested gender differences in empathy and helping behavior (e.g., Van der Graaff et al., 2014). For example, research has found that girls show more advanced perspective taking and empathic concern by Age 13 compared to boys (Van der Graaff et al., 2014). In the current study, maternal education positively predicted empathy and helping behavior scores. Research has found socioeconomic differences in prosocial behavior (Piff et al., 2010), and has found lower socioeconomic status to be associated with greater prosocial behavior (Piff et al., 2010). In addition, differences in parenting have been related to maternal education in extant studies (Bornstein et al., 2003; Guryan, Hurst, & Kearney, 2008). For example, findings have shown that mothers with higher levels of education spend more time with their children (Guryan, Hurst, & Kearney, 2008). Moreover, more-educated mothers possess greater knowledge about child rearing and child development (Bornstein, Cote, Haynes, Hahn, & Park, 2010).

In the present study, given that maternal education predicted empathy and helping behavior and that gender predicted empathy, future research should further examine the connections between the control variables used in the present study (i.e., maternal education, gender) and the outcome variables (i.e., empathy, helping behavior). Research suggests qualitative differences in parent-child relationships based on SES (Bornstein, Cote, Haynes, Hahn, & Park, 2010), which in turn suggests questions about which particular parent-child relationship qualities would shape the development of empathy across SES levels. Therefore, future research should consider SES differences to better understand interindividual differences in parent-child relationships.

Limitations

Given the findings discussed above, it is important to acknowledge limitations that may

have impacted these results. First, although the model of parent-child relationships and the

development of empathy and helping behavior is one of bidirectional relationships, I only

focused on unidirectional relations between measures of perceived parent-child relationship

qualities, and empathy and helping behavior. Although the model will ideally be tested through

direct behavioral measures of parent-child relationship qualities, no behavioral measures were

used. This study only assessed youth self-reported perceptions of parent-child relationship

qualities.

Furthermore, the measure of empathy was weak, demonstrating a low, unacceptable

alpha level. The reliability for the measure of empathy in the full Wave 5 sample from the 4-H

study of PYD was weak as well, suggesting no difference between the full Wave 5 sample and

the subsample used in the current study. Despite the limitations of the measure, there was a

moderate relation between empathy and helping behavior scores. Empathy was the only

significant predictor of helping behavior scores. Therefore, future research should test the RDST

model presented in Figure 1 with longitudinal data that allows reciprocal parent-child

relationships to be tested. Ideally, direct behavioral measures (or at least parent self-reports) or

parent-child relationship qualities should be used along with better measures of empathy.

It is important to elaborate on the difference between perceptions and actual experiences

related to parent-child relationships, as well as the difference between self-reported perceptions

and observational measures. Although the theoretical model would be ideally tested using direct

behavioral measures of maternal warmth and family connection, the value of perceptions cannot

be disregarded. Slavich and Cole (2013) stated that human genes can be turned "on or off" based

on perceptions of social relationships. Moreover, Slavich and Cole (2013) discussed the contentions that perceptions of being lonely, more so than being lonely, were more important in changing epigenetic patterns.

Of course, there are pros and cons in regard to using youth-reported perceptions of parent-child relationship qualities. Therefore, future research should use multiple measures of parent-child relationship qualities in order to triangulate findings. The use of multiple measures of parent-child relationship qualities (e.g., interviews, perceptions, parent-report, observations) will expand knowledge regarding perceptions versus actual experiences in predicting the development of empathy and prosocial behavior.

Future research should also examine empathy as a mediating variable. Ideally, to test the longitudinal progression of the theoretical model presented in Figure 1, future studies should include at least three times of testing to assess the progression from empathy to prosocial behavior that presumably results from maternal warmth and family connection. The current study only used two times of testing (i.e., perceived maternal warmth and family connection assessed in Grade 5 and empathy and helping behavior assessed in Grade 9) to begin to understand the differential associations between perceived parent-child relationship qualities and empathy and, as well, between perceived parent-child relationship qualities and helping behavior. Thus, the longitudinal nature of the theoretical model was not well represented in the current study; but future studies should examine the model longitudinally, with at least three testing times, to assess whether the development of empathy leads to prosocial behavior.

In addition, the small and biased sample used in the present study provides limitations in regard to generalizing the results of this study. The sample only included youth who participated in the study in the two years used for the present study (Grades 5 and 9), and had complete data

for the variables used in this study. Therefore, this sample may not provide data generalizable to

the larger and also non-representative 4-H Study sample (Bowers, Geldhof, Johnson, J. Lerner,

& R. Lerner, 2014). No generalizations to representative samples of youth can be made.

Conclusions

Although this research has important limitations, it also encourages the further

exploration of the role of empathy in positive youth development. The results of this research did

not provide support for the notion that perceived maternal warmth and family connection may be

important in predicting empathy and helping behavior. However, the results of this study do

suggest that empathy is important in predicting helping behavior. Although questions still remain

in terms of the bidirectional relations between parents and children, this study began to look at

the development of empathy within the context of the parent-child relationship through a RDST

model. There is still a lot that needs to be understood about the parent-child relational process,

but this study serves as encouragement for future studies that might better elucidate the role of

this relationship in the development of empathy. There remains a great need to further explore,

within a RDST model, the mutually influential relations between qualities of the parent-child

relationship and empathy and helping behavior in adolescence.

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Table 1.

Means, standard deviations, and correlations for perceived maternal warmth, family

connection, empathy, and helping behavior among 4-H Study of PYD youth (N = 172).

Measures	1	2	3	4	Mean (*SD*)
1. Maternal Warmth	__				3.06 (1.04)
2. Family Connection	.71*	__			4.17 (.68)
3. Empathy	.07	.13	__		3.93 (.73)
4. Helping Behavior	.07	.15	.36*	__	1.86 (.67)

*Note: * = p<.001*

Table 2.

Summary of Hierarchical Regression Analysis for Variables Predicting Empathy ($n = 172$)

Predictor	R^2	ΔR^2	β (*SE*)
Step 1	0.17	0.17**	2.56**
Gender			0.48** (0.10)
Mother's Education			0.08* (0.02)
Step 2	0.18	0.02	2.02**
Gender			0.48** (0.10)
Mother's Education			0.08* (0.02)
Maternal Warmth			-0.02 (0.07)
Family Connection			0.13 (0.11)

Note: * = *p*<.01; ** = *p*<.001

Table 3.

Summary of Hierarchical Regression Analysis for Variables Predicting Helping Behavior (n = 172)

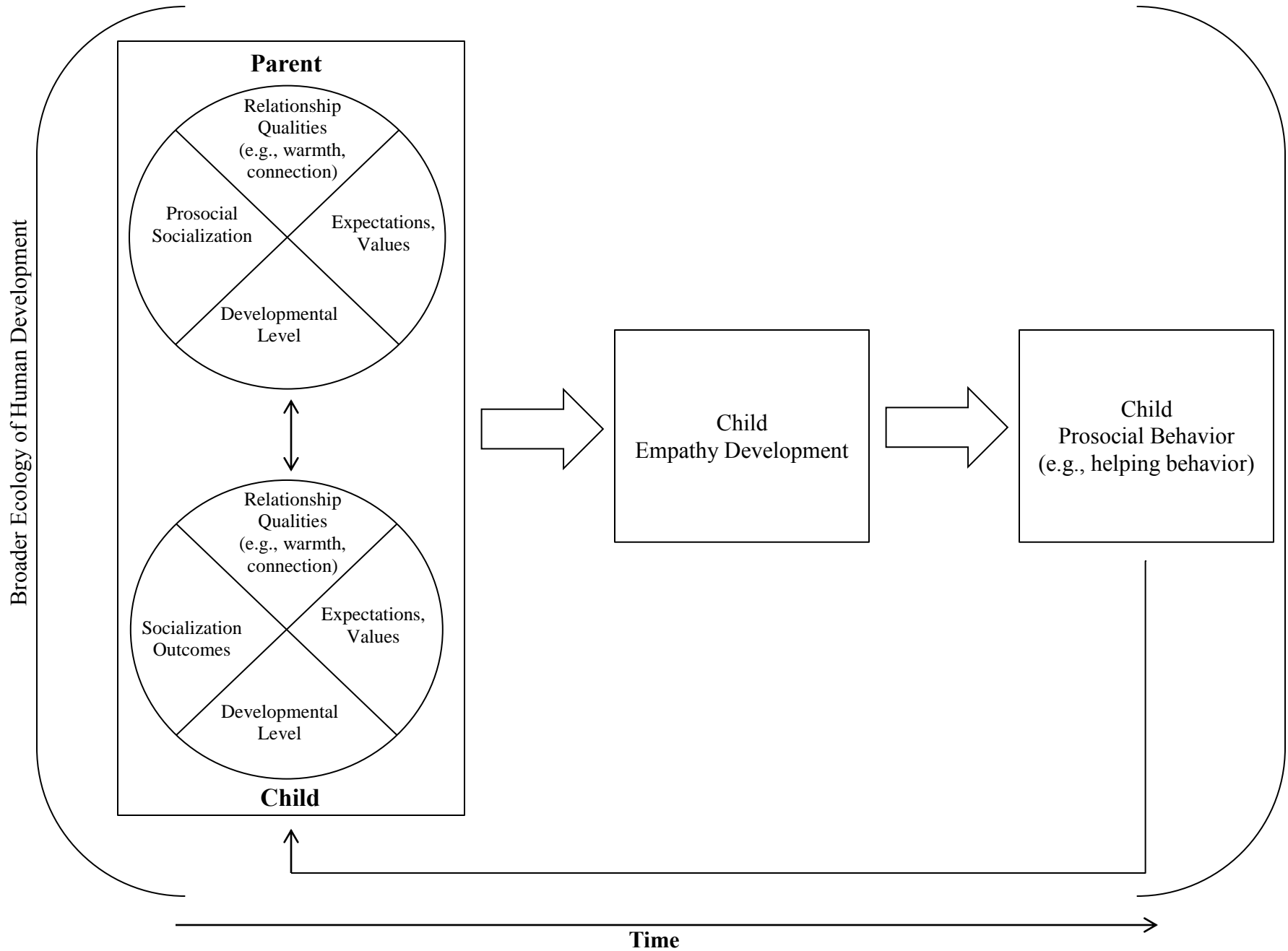| Predictor	R^2	ΔR^2	β (SE)
Step 1	0.07	0.07**	0.79*
Gender			0.19 (0.10)
Mother's Education			0.07** (0.02)
Step 2	0.09	0.02	0.14
Gender			0.18 (0.10)
Mother's Education			0.07** (0.02)
Maternal Warmth			-0.04 (0.07)
Family Connection			0.19 (0.10)
Step 3	0.14	0.07***	-0.41
Gender			0.05 (0.10)
Mother's Education			0.05* (0.02)
Maternal Warmth			-0.04 (0.07)
Family Connection			0.15 (0.10)
Empathy			0.27***(0.12)

Note: * = *p*<.05; ** = *p*<.01; *** = *p*<.001

Figure 1. A relational developmental systems framework of individual-context relations: Parent-child relationships and empathy development.