

AN ABSTRACT OF THE THESIS OF

Elizabeth Vale for the degree of Master of Science in Human Development and Family Studies. Presented on September 15, 1999. Title: Factors Contributing to Prosocial Behavior among Pre-school Children from Low-income Families.

Abstract approved:

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This exploratory study examined whether temperament, home environment, and family stress impact the amount of prosocial behavior displayed by pre-school age low-income children and examined how much of an impact each factor has. Each factor was explored in depth along sub-scale dimensions including, (1) self-regulatory temperament, negative reactive temperament, and positive reactive temperament, (2) physical environment, emotional environment, and learning environment, and (3) family stress due to financial difficulties, interpersonal tension, and child problems. This study applied a combination microsystem, mesosystem, exosystem, and macrosystem person-process-context model to explore the role these factors played.

Subjects were 35 low-income pre-school age children who were enrolled in the Oregon Head Start Pre-kindergarten Program at Oregon State University. The Children's Behavior Questionnaire: Short Form, the Early Childhood Home Inventory, the Family Events Checklist, and the

Modified Prosocial Behavior Questionnaire were used to obtain information about the relationship between the factors and prosocial behavior.

Results indicated that the physical aspects of the home environment tended to positively contribute to the production of prosocial behavior and that family stress due to financial difficulties tended to negatively contribute to the production of prosocial behavior by low-income pre-school age children. This study did not establish that temperament was significantly related to prosocial behavior.

These results have implications for those who are responsible for shaping children's behavior, such as teachers, parents, and home visitors by providing specific areas of focus for impacting behavior. These findings also support programs such as the Oregon Head Start Pre-kindergarten Program because it provides a venue through which impacts can be made.

Factors Contributing to Prosocial Behavior among Pre-school Children
from Low-income Families

By

Elizabeth Vale

A THESIS

Submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science

Presented September 15, 1999
Commencement June 2000

Master of Science thesis of Elizabeth Vale presented on September 15, 1999

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Elizabeth Vale, Author

ACKNOWLEDGEMENTS

I appreciate all of the help and guidance I have received throughout this learning process. My advisors, Dr. Alan Sugawara and Dr. Linda Burt, have both provided numerous hours of their time working with me on this project. They have been very encouraging and supportive from the beginning to the end.

I would also like to thank the members of my committee, Dr. Derryberry, Dr. Vuchnich, and Dr. Mc Cubbin, for being very helpful and supportive as well. I am appreciative of the time and guidance they have given me throughout this process.

Many thanks are given to the families who participated in this study. It would not have been possible without them.

I would like to thank all of the professors I have taken classes from at Oregon State University for providing me with the resources and knowledge to complete this project. While working on this project I feel that I utilized all of the skills that I have learned up until this point.

Thanks to all of my friends for their support and listening ears throughout this process. Your presence was invaluable.

Lastly, I would like to thank my parents for all of their patience and encouragement in this endeavor and all others in my life. Their faith in my abilities has brought me to this point in my educational path and has fed my desire to continue further to pursue my Ph.D.

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FACTORS CONTRIBUTING TO PROSOCIAL BEHAVIOR AMONG PRE-SCHOOL CHILDREN FROM LOW-INCOME FAMILIES

Chapter 1

INTRODUCTION

An understanding of what factors lead to the demonstration of prosocial behavior, or voluntary behavior that is intended to benefit another is key to learning how to promote this behavior in our society. There is still much to learn about prosocial behavior because it did not become a focus of study until 1970 (Hay, 1994; Eisenberg & Mussen, 1989; Eisenberg et al., 1996; Eisenberg & Fabes, 1998; & Weir & Duveen, 1980). This is because much of the emphasis of previous research has been on the prevention of negative behaviors instead of on the production of positive behaviors (Eisenberg & Fabes, 1998).

There is a lack of knowledge about the production of prosocial behavior by children because previous prosocial researchers did not focus their studies on children because they did not even realize that children were capable of displaying these behaviors until recently (Eisenberg & Mussen, 1989; & Hay, 1994). This study will focus on a pre-school age context since much more needs to be understood about the production of prosocial behavior during this age period (Eisenberg & Fabes, 1998).

This study will also focus on a low-income context because researchers have determined that there is an increased risk for behavior problems based upon income level, and results from studies specifically focused on the relationship

between income-level and prosocial behavior have been inconclusive (Eisenberg & Fabes, 1998). Poverty is an increasing problem for children. It has been predicted that by the year 2000, the proportion of children living in poverty will increase to one out of every three children and currently the United States has a higher number of children living in poverty than any other industrialized nation (Dubow & Ippolito, 1994 & McLoyd, 1998).

It is important for future studies to focus on determining the factors that lead to the production of prosocial behavior, in order to learn how to promote this positive behavior, instead of maintaining the research focus only on the prevention of negative behaviors. As the following review of literature suggests the research that has been conducted thus far on prosocial behavior has examined singular impacts of factors, but no studies have examined several factors concurrently. Studies need to be conducted in this manner to determine what factors contribute to the production of prosocial behavior and how much of a role each of these factors play. The current study will apply a contextual model to the exploration of the impact made by the factors' temperament, home environment and family stress level on the prosocial behavior displayed by pre-school age low-income children.

Theoretical Framework

Bronfenbrenner's ecological framework was applied which emphasizes the study of the individual within the context of the environment in which he or she is embedded (Bronfenbrenner, 1977; Bronfenbrenner, 1986; & Bronfenbrenner &

Bronfenbrenner's ecological framework was applied which emphasizes the study of the individual within the context of the environment in which he or she is embedded (Bronfenbrenner, 1977; Bronfenbrenner, 1986; & Bronfenbrenner & Crouter, 1983). This theory also emphasizes the reciprocal nature of the interaction that occurs between the individual and the environment.

Bronfenbrenner has identified four environmental levels in which the individual is embedded including, the microsystem, the mesosystem, the exosystem, and the macrosystem (Bronfenbrenner, 1977). The microsystem consists of interactions that take place between the individual and the environment in the immediate setting in which the individual is embedded. An example of a microsystem is parent-child interaction that takes place within the home.

The next layer is the mesosystem, which consists of interactions that occur between microsystems and ultimately affect the child's development. An example of an interaction that occurs at the mesosystem level is when a child observes a child at school display negative behavior and then comes home and displays that same behavior. The interactions that occur in the child's two environments are impacting each other.

The exosystem is an extension of the mesosystem that indirectly impacts upon the individual by providing structure to the rules and policies that direct societal functions. Exosystems do not directly include the individual of focus, in this case the child. Examples of exosystems are the parent's workplace and parent's friends because these are domains in which the child does not usually interact.

the work setting impact interactions that take place in the home setting and ultimately both interactions impact the child.

The last layer in Bronfenbrenner's model is the macrosystem, which encompasses the broad patterns of the society or culture that impact individuals such as social ideals, economics, political agenda, and technology. All of these broad factors impact the microsystem, mesosystem, and macrosystem and, therefore, directly and/or indirectly impact the individual. The emphasis the government places upon education is an example of an exosystem impact on child development. If schools are not receiving the funding that they need then they will not have adequate resources and teaching staffs and will be unable to impact development effectively.

The person-process-context model examines the interplay of the environment and biology in their impact on developmental processes (Bronfenbrenner, 1983). All three interact and impact upon each other. This model can be applied to the microsystem, the mesosystem, the exosystem, or the macrosystem to examine how the developmental process is impacted by the environment and biology (Bronfenbrenner & Crouter, 1983).

Purpose of the Study

This study applies a combination microsystem, mesosystem, exosystem, and macrosystem person-process-context model to the exploration of the role of the biological factor (temperament) and the environmental factors (home environment

and family stress) in the production of the developmental process (prosocial behavior) among pre-school age low-income children. The low-income context represents impacts at both the exosystem level and the macrosystem level and the pre-school age context represents impacts at the microsystem level. The biological factor, temperament, is within the microsystem. The environmental factor home environment is represented in both the microsystem and the mesosystem, and the environmental factor family stress is represented in the microsystem, mesosystem, and exosystem. The developmental process, prosocial behavior, is examined within the context of the pre-school classroom.

Previous studies have determined that each of these factors play a role in the production of child behavior in general and a few have determined that these factors play a role in the production of prosocial behavior specifically. No studies have examined the influence of all of these factors simultaneously in the same study. The concurrent examination of all three factors will allow assessment of which of the factors plays the biggest role in the production of prosocial behavior within the context of pre-school age low-income children. This exploratory study will establish whether temperament, home environment, and family stress impact prosocial behavior in pre-school age low-income children and will establish how much of an impact each factor has.

Chapter 2

REVIEW OF LITERATURE

The following review of literature will explore the role that the child's temperament, home environment, and family stress play in the production of prosocial behavior. Prosocial behavior will be defined and understood in the context of pre-school age children and in the context of poverty.

Definition of Prosocial Behavior

Prosocial behavior is defined as voluntary behavior that is intended to benefit another that is either intrinsically motivated by altruistic forces or motivated by the benefit gained by the actor (Hay, 1994; Eisenberg & Mussen, 1989; Eisenberg et al., 1996; Eisenberg & Fabes, 1998; & Weir & Duveen, 1980). This definition has evolved over time to include non-altruistically motivated behavior as well as altruistically motivated behavior, which has allowed more behaviors to be termed as prosocial and has caused researchers to realize that younger children are capable of expressing these behaviors (Hay, 1994). Examples of prosocial behaviors are sharing, helping, defending, sympathy, rescuing, and cooperation (Yarrow et al., 1976).

In a Pre-school Age Context

For many years researchers did not think that young children were capable of displaying prosocial behavior, but this view has changed (Eisenberg & Mussen,

1989 & Hay, 1994). Researchers have now concluded that in the first three years of life children are capable of sharing, helping, and cooperating (Eisenberg & Mussen, 1989; Hay, 1979; Hay, 1994; & Zahn-Waxler, Radke-Yarrow, Wagner & Chapman, 1992). In Hay's 1979 study she saw evidence that 12-, 18-, and 24-month-old children are capable of displaying early forms of cooperation, and sharing. Zahn-Waxler et al. (1992) determined that helping, sharing, and comforting emerge between the ages of one and two years and increase in frequency and variety over this time period.

Most studies have shown that pre-school children are capable of displaying prosocial behavior and do display it (Radke Yarrow et al., 1976; Rheingold, 1982; Yarrow, Scott, & Zahn-Waxler, 1973; & Zahn-Waxler et al., 1992), but there is a debate about whether the actual amount displayed decreases during this period (Caplan & Hay, 1989 & Hay, 1994). Caplan & Hay (1989) found that the three to five year old children in their study paid attention to the distress of their peers and most were capable of responding prosocially and did intervene to alleviate the distress of a peer on at least one occasion. When questioned, however, the children gave many more examples of times that they should have responded in a prosocial manner. In other words they were very aware of the prosocial actions that they should be taking, but only practiced these prosocial acts at low rates. Yarrow, Scott, & Waxler conducted a study in 1973 that assessed pre-school children's capability to learn and retain knowledge gained through training about how to display helping behavior. They found that pre-school children were capable

of learning helping behavior and that they retained this knowledge when measured six months after the initial training. Both of these studies highlight the fact that preschool children are capable of displaying prosocial behavior.

Other studies have assessed whether prosocial behavior increases or decreases as children age during this period (Rheingold, 1982 & Yarrow et al., 1976). Yarrow et. al (1976) found that all of the three to seven and a half year old children in her study displayed prosocial behavior at low rates, but she concluded that age is a weak predictor of prosocial behavior because socialization conditions are at the root of different age trends. Rheingold (1982), on the other hand, found that children who were 18, 24, and 30 months old displayed helping behavior in a laboratory setting designed to emulate a home environment and concluded that the nature of the children's participation does increase with age. For example, while helping their parent's with a task, 16 of the youngest children inserted one or more cards in a box vertically instead of horizontally and none of the older children did so.

As the literature suggests, it is difficult to draw singular conclusions about the nature of prosocial behavior during the pre-school age period. Because of this fact, this study focused on this age range in order to further explore the prosocial behavior displayed by pre-school age children.

In the Context of Poverty

Many studies have indicated that low-income children are more at risk for developing behavior problems (Adams, Hillman, & Gaydos, 1994; Dubow & Ippolito, 1994; Duncan, Brooks-Gunn, & Klebanov, 1994; McLoyd, 1998; McLoyd, 1998 & Patterson, Kupersmith, & Vaden, 1990), but the link between income level and the display of prosocial behavior is not as clear (Eisenberg & Mussen, 1989 & Eisenberg & Fabes, 1998).

Link to Behavior Problems

Patterson et al. (1990) conducted a study to determine what factors predict school-based competence, which they defined as peer relations, behavior and conduct, and academic achievement. They found evidence of a link between low-income status and the display of more conduct and behavior problems regardless of race, in their elementary age African American and Caucasian sample. Dubow & Ippolito (1994) conducted a longitudinal study based on a subset of children from a national data set that examined how poverty and the child's home environment influence the academic and behavioral adjustment of elementary age students. They concluded that poverty during the toddler/preschool years was a significant predictor leading to academic failure and antisocial behavior during the elementary years. Their study emphasized the importance of studying the effects of poverty during the preschool years. Duncan et al. (1994) also established that poverty status is a powerful correlate of cognitive development and the behavior displayed by

children in their sample of children from age zero to three. Adams et al. (1994) evaluated behavioral difficulties in pre-school age children based upon whether the children were low-risk, social risk (environmental risk including poverty), or dual risk (both biological risk and social risk). She concluded that social risk conditions placed children at greater risk for developing behavioral difficulties, regardless of whether children also had an added biological risk. These studies illustrate the fact that it is well known within the research field that poverty places children at risk for developing behavior problems.

Link to Prosocial Behavior

The link between poverty and the amount of prosocial behavior displayed by children is not consistent, however (Eisenberg & Mussen, 1989 & Eisenberg & Fabes, 1998). Intuitively, one would conclude based upon the fact that low-income children are more at risk for developing behavior problems, that low-income children would display less prosocial behavior, but researchers have come to varying conclusions. Some researchers have found evidence supporting the fact that higher income children (Berkowitz, 1968; Doland & Adelberg, 1967; Payne, 1980; Ramsey, 1988 & Raviv & Bar-Tal, 1981), lower income children (Knight, 1982 & Ugurel-Semin, 1952), and neither (Dreman & Greenbaum, 1973) display more prosocial behavior.

Raviv & Bar Tal's (1981) cross-cultural study assessed the helping behavior of 250 sixth-grade children along several demographic dimensions. They

concluded based upon findings directly related to father's educational level attainment, which they used as an indicator of socioeconomic status, that more children from middle classes are helpful than children from lower middle classes. Payne also concluded that children of higher socioeconomic status are more capable of displaying prosocial behavior in his (1980) study of fourth- sixth grade children. Berkowitz's (1968) study showed that adolescent boys from bureaucratic middle class families were more helpful than working-class boys, regardless of whether they had received help earlier in the study when they were in a situation where they needed help. Results supporting the idea that higher socioeconomic class children are more capable of prosocial behavior have also been collected for pre-school age children. Doland & Adelberg (1967) demonstrated that higher income pre-school children shared more both before and after social reinforcement based training than the lower-income children in their sample. In her pre-school-age sample, Ramsey (1988) found that lower socioeconomic status (SES) children responded to hypothetical social problem solving situations with more aggressive actions and middle-SES children more frequently responded with reassuring and sharing strategies. She also discovered that the children's teachers consistently rated low-SES children as less socially competent than the middle-SES children.

Other studies have shown that lower-SES children perform more prosocial behavior than higher-SES children do and some have shown SES to have no impact upon prosocial behavior. The results from Ugurel-Semin (1952) study exploring the causes and correlates of moral behavior support the conclusion that lower-SES

children perform more prosocial acts than higher SES children. He found that the poorer children were as often generous, less selfish, and more egalitarian than the richer children in his study. Income level was negatively associated with the number of altruism/group enhancement choices made by the children in Knight's (1982) study. Dreman & Greenbaum (1973) found no differences in the amount of sharing that occurred in donor unknown situations and donor known (reciprocity) situations for the lower-class boys, and both the lower-class, and middle-class girls. The middle class boys were the only group that was affected by whether or not the situation involved reciprocity. Across the other groups no differences were found based upon socioeconomic status.

Because of the increased risk for behavior problems based upon income level and the inconclusive results from studies that have specifically measured the effect of income level on prosocial behavior, this study focused on a low-income sample. Much more needs to be understood about the relationship between income level and prosocial behavior among pre-school age children.

The Role of Temperament

Dr. Rothbart & Dr. Derryberry conceptualized the temperament theory that was used as the basis for analysis of the role that temperament plays in the production of prosocial behavior (Derryberry & Rothbart, 1998; Derryberry & Rothbart, 1997; Rothbart & Ahadi, 1994; Rothbart, Ahadi, & Hershey, 1994; & Rothbart, Ahadi, Hershey, & Fischer, in press). Temperament is defined as

“constitutionally based individual differences in reactivity and self-regulation, influenced over time by heredity, maturation, and experience” (Rothbart & Ahadi, 1994, pg. 55). The term constitutional refers to the individual’s relatively stable biological make-up that is affected over time by heredity, maturation, and experience. Reactivity is an assessment of the individual’s arousability of motor, affective, and sensory response systems, and self-regulation includes the processes that serve to either increase or decrease reactivity, such as attentional focusing and inhibitory control (Rothbart et al., 1996 & Rothbart & Bates, 1998). The temperamental dimensions defined by this theory can be narrowed to three constructs termed: negative reactivity (anger, frustration, sadness, discomfort), positive reactivity (smiling and laughter, activity level, high intensity pleasure) and self-regulation (inhibitory control, effortful control, attentional focusing) (Rothbart et al., 1996; Rothbart & Ahadi, 1994; & Rothbart & Bates, 1998).

A limited number of studies have explored the connection between the child’s temperament and resulting prosocial behavior (Eisenberg et al., 1996; Denham, 1986; Lennon & Eisenberg, 1987; O’Connor & Cuevas, 1982; & Stanhope, Bell, & Cohen, 1987). Eisenberg et al. (1996) examined the relationship between children’s dispositional prosocial behavior and individual differences in negative emotionality, regulation, and social functioning. She concluded that children high in prosocial behavior were low in negative emotionality and high in social skills, and attentional regulation. Stanhope et al. determined in her (1987) study that children with more sociable temperaments demonstrated more helping

behavior. In Denham's (1986) study she found support for a connection between the display of negative emotions and a decrease in prosocial behavior. She concluded that the child's temperament is an important component to understand in order to be able to predict the child's prosocial responding. All three of these studies concluded that low negative emotionality, and high positive emotionality or sociability lead to prosocial behavior. The results from Eisenberg et al.'s (1996) study also concluded that high attentional regulation is an important factor in the production of prosocial behavior.

Because of the lack of research that has explored the role of temperament in the production of prosocial behavior it is important to review research that has explored the role of temperament in the production of the related concepts of social behavior and conscience development. Several studies have been conducted which have explored the effect of temperament upon these two domains (Eisenberg et al., 1993; Eisenberg et al., 1997; Kochanska, Murray, Jacques, Koenig, & Vandegest, 1996; Kochanska, Murray, & Coy, 1997; & Rothbart et al., 1994). These studies have shown support for varying temperament types, but overall they support a strong implication for the role that self-regulatory temperament plays in the development of prosocial behavior. Kochanska et al. (1996) and Kochanska et al. (1997) found support for a connection between higher levels of inhibitory control and conscience development and internalization of the rules of conduct. The conclusion that Rothbart et al. drew in her (1994) study was the opposite of the conclusion drawn by Eisenberg et al. (1993) and Eisenberg et al. (1997) about the

role that negative affect and regulation play in the production of social behavior. Rothbart et al. (1994) found that children who displayed effortful control and some types of negative affectivity (fear and sadness) as opposed to (anger and discomfort) were more likely to display social behavior. Eisenberg et al. (1993) found that regulatory skills were generally negatively correlated with negative affect and emotional intensity in the production of social behavior, particularly for boys. In Eisenberg et al.'s, (1997) study she also found support for a connection between high regulation, low levels of negative emotionality, and low levels of emotional intensity. Based upon the impact that self-regulation has on social behavior production, as reported in the literature, the initial analysis of temperament was focused on this construct.

The Role of the Home Environment

Researchers gained new enthusiasm for studying the role that the home environment plays in the development of the child in the 1960's (Bradley, 1993). Only a limited number of studies have explored how the home environment impacts upon children due to the fact that this surge in interest occurred recently. No studies have looked specifically at how all aspects of the home environment influence prosocial behavior in children, but many studies have found significant impacts of certain aspects of the home environment upon cognitive abilities and behavior. Researchers have explored separate dimensions of the home environment such as the physical environment (Hamel & Burns, 1989), the emotional

environment (Bar-Tal, Nadler, & Blechman, 1980; Bryant & Crockenberg, 1980; Pettit, Bates, & Dodge, 1997; Zahn-Waxler & Radke-Yarrow, 1979; & Turner & Harris, 1984), and the learning environment (Gottfried, Fleming, & Gottfried, 1998). Some researchers have explored the impacts of many factors (Bradley, Caldwell, & Elardo, 1977; Bradley, Caldwell & Elardo, 1979; Bradley et al., 1989; Bradley, 1993; Dubow & Ippolito, 1994; & Jimerson, Egeland, & Teo, 1999).

Physical Environment

This is the area of the environment that has been the studied the least in terms of its effects upon the development of children. Homel & Burns explored the impact of the neighborhood, street-type, and some aspects of housing on emotional and social adjustment in their (1989) study. They did find evidence to support the idea that the physical environment in which the child lives does impact upon emotional and social adjustment and concluded that investigation into the impacts on social behavior needs to be broadened to include physical environment variables.

Emotional Environment

Eisenberg & Fabes (1998) demonstrated in their review of prosocial behavior that researchers have found mixed results in regards to whether or not parental warmth and quality of the parent-child relationship impact the amount of prosocial behavior displayed by the child. Several studies have indicated a

relationship between parental warmth and quality of the parent-child relationship and the child's demonstration of prosocial behavior (Bar-Tal, Nadler, & Blechman, 1980; Bryant & Crockenberg, 1980; Pettit, Bates, & Dodge, 1997; & Zahn-Waxler & Radke-Yarrow, 1979), whereas Turner & Harris (1984) found no relationship. Zahn-Waxler & Radke-Yarrow (1979) found, in their study of mother's child-rearing effects on the altruistic behavior demonstrated by one and a half to two and a half year olds, that empathic care giving by mothers was positively associated with the display of altruistic behavior. The strongest relationship Bryant & Greenberg found in their (1980) study discerning the maternal, sibling, and situational correlates of prosocial behavior was the one between maternal responsiveness to her child's needs and infrequent antisocial and frequent prosocial behavior. Pettit et al. (1997) discovered in a longitudinal assessment of the impact of supportive parenting, including proactive teaching, calm discussion in disciplinary encounters, warmth, and interest and involvement in child's activities, in predicting the behavioral, social, and academic adjustment of children that supportive parenting was related to child adjustment. Bar-Tal et al. (1980) also found evidence that supportive parenting predicts prosocial behavior, specifically helping behavior in their study. They found that both mothers and fathers influence helping behavior, but that boys were mostly impacted by the helping practices of their fathers and girls were impacted by the practices of both mothers and fathers. Rutherford & Mussen (1968) found evidence that the generosity level of the four year-old boys in their study was influenced by the boys' perception of the amount

of nurturing behavior demonstrated by their fathers in contrast to the nurturing behavior demonstrated by their mothers. Turner & Mussen (1984) did not find support for a significant relationship between parental attitudes and children's social competence, however.

Learning Environment

Gottfried et al. (1998) conducted a study that examined the specific environmental effects of a cognitively stimulating learning environment on academic intrinsic motivation. This was a longitudinal study that assessed children from age eight to age 13. They concluded that there was a significant relationship between having a cognitively stimulating learning environment and being intrinsically motivated even beyond the effect of socioeconomic status.

Combination of Environmental Factors

Many studies have examined the affects of a combination of factors in the home environment on academic achievement (Bradley et al., 1977; Bradley et al., 1979; Bradley et al., 1989; & Jimerson et al., 1999) and both academic achievement and behavior (Bradley, 1993 & Dubow & Ippolito, 1994).

Bradley et al.'s (1977) study concluded that measures of specific environmental processes are better indicators of IQ than SES in a mixed race sample. The reciprocal relationship between the child and the environment was explored in Bradley et al.'s (1979) study. He concluded that there were differences

in this relationship based on the age of the child. During the six-to 12-month period more capable children tended to elicit more maternal involvement and the provision of more appropriate play materials, whereas higher levels of maternal involvement tended to produce more capable children during the 12-to 24-month period.

Bradley et al.'s (1989) study was a longitudinal study that examined the relationship between home environment and cognitive development across three ethnic groups over the first three years of life. The results revealed a fairly consistent relationship between the home environment and children's developmental status, although there were some differences due to ethnicity and social status. They also determined that measuring the home environment was a better indicator of developmental status than SES. When the child's developmental status and home environment were poor there was a higher likelihood for poor developmental outcomes than when only one factor was present. Jimerson et al. (1999) studied the impacts on school achievement made by the environmental factors, home environment and parent involvement in the child's education, along with SES. All of these variables were determined to influence academic achievement in this 20-year longitudinal sample of children.

Dubow & Ippolito's (1994) study and Bradley's (1993) review article addressed the effect of the home environment upon both academic ability and behavior. Dubow & Ippolito examined the effects of poverty and the quality of the home environment on the academic and behavioral adjustment of elementary age children in their (1994) study. They concluded that cognitively stimulating and

emotionally supportive home environments predict increases in academic achievement and decreases in antisocial behavior regardless of poverty status and other risk factors. Bradley et al. reported that Early Childhood Home Inventory (HOME) scores are moderately correlated with measures of children's intellectual and academic performance during the preschool age period. Studies have determined a relationship between the quality of the home environment (specifically parental responsiveness) and social competence during early and middle childhood.

Based upon the studies addressed during this literature review on the impacts of the home environment upon cognitive abilities and behavior, a connection was hypothesized to exist between a positive home environment and prosocial behavior. Studies specifically conducted to examine the impacts of the emotional environment have demonstrated this connection and the current study widened this connection to include all three dimensions of the home environment.

The Role of Family Stress

Indicators of family stress levels as measured by the Family Events Checklist can be sorted into the categories interpersonal tension, financial difficulties, and child problems (Fischer, Fagot, & Leve, 1998). Much research has shown a connection between stress level and behavioral adjustment and problem behaviors displayed by children (Dodge, Pettit, & Bates, 1994; Sterling, Cowen, Weissberg, Lotczewski, & Boike, 1985; McLoyd, 1998; Shaw, Winslow, Owens,

& Hood, 1998; Smith & Carlson, 1997; & Wertlieb, Weigel, Springer, & Feldstein, 1987). Some studies have focused specifically on the effects of family stress and some have explored more broad indicators of life-stress. A limited number of studies have assessed the specific impact of family stress upon prosocial behavior development (Cummings, Zahn-Waxler, & Radke-Yarrow, 1981; Cummings, Zahn-Waxler, & Radke-Yarrow, 1984; Cummings, Pellegrini, & Notarius, 1989; Cummings & Smith, 1993; & Eisenberg & Fabes, 1998).

Link between Life-Stress and Behavior

Much research has demonstrated the effects of broad life-stress variables upon children's adjustment and display of problem behavior (McLoyd, 1998; Sanler & Block, 1979; Smith & Carlson, 1997; Sterling et al., 1985; & Wertlieb et al., 1987). Smith & Carlson's (1997) review article presented much research, which has suggested a consistent relationship between stress and psychological and behavioral problems. Sandler & Block (1979) investigated the relationship with an elementary-age sample split into welfare and non-welfare groups. They determined that stressful life events and a history of being on welfare predicted adjustment problems. In Sterling et al.'s (1985) study she also found evidence to support the fact that children who experience more stressful life-events display more serious school adjustment problems and fewer competencies in her first through fourth grade sample. She found that the link between stressful events and adjustment problems was strongest for children who had experienced multiple recent stressful

events. Wertlieb et al. (1987) also found that higher levels of stress, specifically undesirable life events and hassles were associated with a higher incidence of behavior problems. His study also showed that temperament type had a statistically significant mediating impact. McLoyd (1998) posited that the link between socioeconomic disadvantage and children's socio-emotional functioning is mediated by harsh, inconsistent parenting and exposure to acute and chronic stressors in her review article on the topic of child development in the scope of socioeconomic disadvantage. She based this hypothesis on the fact that research suggests that poor and low-SES children experience more negative life-events, and undesirability of life-events has been shown to be a consistent predictor of socio-emotional maladjustment in children.

Link between Family Stress and Behavior

Shaw et al. (1998) and Dodge et al. (1994) focused their study specifically on the impact of family stressors on behavior. Shaw et al. (1998) found support for the relationship between family stress and behavior problems. Their longitudinal study of low-income boys followed from infancy to age three and a half showed that as the number of stressors increase the number of behavior problems increase as well. Dodge et al. explored socialization factors that possibly mediate the relationship between early socioeconomic status and later problem behaviors in his (1994) longitudinal study that assessed children from pre-school to grade three. One of the factors he explored was family life stressors. He found that

socioeconomic status was significantly negatively correlated with eight factors, including harsh discipline, lack of maternal warmth, exposure to aggressive adult models, maternal aggressive values, family life stressors, mother's lack of social support, peer group instability, and lack of cognitive stimulation. These factors mediated teacher's ratings of externalizing problems and peer rated aggression.

Link between Family Stress and Prosocial Behavior

A limited number of studies have explored the connection between family stress and prosocial behavior. Some have focused on the specific family stressor of interfamilial conflict (Cummings et al., 1981; Cummings et al., 1984; Cummings, et al., 1989; Cummings & Smith, 1993; & Eisenberg & Fabes, 1998) and others have focused on the impact of financial stress, as I addressed earlier in this review (Dodge et al., 1994 & Eisenberg & Fabes, 1998). Cummings et al. found in their (1981) study of children approximately one year of age that the most common emotional reaction by children to expressions of inter-parent anger is distress. Repeated exposure to inter-parent anger increased the likelihood of a negative emotional reaction by the child and also increased the amount of involvement by the children aimed at trying to stop the conflict. Cummings et al. (1984) realized that the attempts made by children to comfort parents in inter-parental conflict increase with age. School-age children were more competent in their intervention efforts than toddlers, but both attempted to intervene. Cummings et al. (1989) demonstrated that children's history of exposure to violence in the home lead to

more involvement and reactivity in response to anger, specifically the children acted more solicitously toward their mother. The results from this study also supported an increase with age as well. Cummings et al. (1993) found evidence to support the idea that siblings try to buffer the exposure to family stress for each other. Peers and siblings were presented with simulations of friendly, angry, and resolution interactions between a male adult and the mother. Female siblings increased their positive effect during the anger period and continued to display increased positive effect during the resolution period. Male siblings increased their display of prosocial behavior during the resolution period and siblings were more prosocial towards each other during this period as well. Prosocial behavior was not increased toward peers. Eisenberg & Fabes (1998) review of prosocial behavior addressed this difference in display of prosocial behavior toward family members and peers. Research has shown that exposure to family stress leads to low levels of prosocial behavior directed toward peers and an increase in personal distress.

Much of the literature on this topic suggests that prosocial behavior is increased toward family members, but not toward peers as a result of family stress. Because prosocial behavior was assessed in the classroom setting, it was hypothesized that family stress would have a negative impact upon prosocial behavior.

Summary

In summary, research has indicated that children's behavior is impacted by many factors. This literature review has revealed the lack of research that has been conducted on the specific behavior, prosocial behavior. It is also apparent that many studies have explored the separate impacts of temperament, home environment, and family stress, but no studies have explored their impacts concurrently. It is important to understand what the role of each of these factors is in the production of prosocial behavior. It is also important to explore these impacts in the context of a low-income pre-school age sample because past research has revealed mixed results in regards to the nature of prosocial behavior that is produced by this sample. This exploratory study utilized Bronfenbrenner's person-process-context model to examine the role that temperament, home environment, and family stress play in the production of prosocial behavior by pre-school age low-income children.

Chapter 3

METHODS AND PROCEDURES

This section includes a description of the subject sample, the measures used, and the procedures used for gathering data. Four measures were utilized to explore the relation between the child's temperament, home environment, and family stress level and the display of prosocial behavior by pre-school age low-income children.

Subjects

The sample consisted of 35 pre-school children, including 15 males (42.9%) and 20 females (57.1%), enrolled in the Oregon Head Start Pre-kindergarten Program (OHSPP) at Oregon State University and the expansion program at the Garfield School. These children were pre-school age ranging from 43 to 67 months with a total sample M of 56.14, $SD = 6.03$ months. Twenty of these children (8 males and 12 females) were enrolled in the program located at Oregon State University and fifteen of the children (7 males and 8 females) were enrolled in the expansion classroom located at the Garfield school. Many children in both programs spoke languages at home other than English. Sixteen (45.7%) spoke English, 11 (31.4%) spoke Spanish, one (2.9%) spoke Ethiopian, two (5.7%) spoke Vietnamese, two (5.7%) spoke Indonesian, one (2.9%) spoke French and Arabic, and two (5.7%) spoke Mandarin. This sample of children represented several ethnic backgrounds, including, 14 (40%) who were Caucasian, 12 (34.3%) who were Hispanic, two (5.7%) who were Indonesian, one (2.9%) who was Ethiopian, one

(2.9%) who was Caucasian/African American child, and one (2.9%) who was Moroccan. Two of the Center children received Early Intervention services and one of the Garfield children received these services. The education level of the mother's whose children were in this sample ranged from none to having a graduate degree, with the mean falling between 10-12 grade and 12 grade or holding a general education diploma (GED). The father's education level ranged between 1-6 grade and graduate training, with the mean level being slightly higher than the mother's at the level of 12 grade or GED. Forty-two point nine percent of the mothers with children in the sample were employed and 71.4% of fathers were employed. The number of people in these family's households ranged from 3 to 9 where the $\underline{M} = 4.63$, $\underline{SD} = 1.72$. All of the families that were part of this study had yearly income levels that fell below the federal poverty guidelines which vary according to family size (see Appendix A). For the average family size in this sample, which rounds to 5, according to the federal poverty guidelines the yearly income level was at or below \$19, 250.

The Oregon Head Start Pre-Kindergarten Program (OHSP) is a state funded grant program, modeled after federal Head Start, that provides pre-school to low-income families. All of the participating families have yearly income levels that fall below the federal poverty guidelines. The OHSP children receive many benefits and services as participants in the program. These benefits are health, dental, nutrition, mental health screening, referral, developmental assessments, individual educational plans, and transportation if needed. They also receive social

service benefits such as home visits, parent training opportunities, advocacy support, and needs assessment and referral.

Home visits provide early childhood education, social service support, and referrals for parents of children enrolled in the OHSP program. The families whose children were enrolled at the Garfield School and the families whose children were enrolled at the Child Development Center received the same information during each corresponding home visit. Because home visits are designed in a sequence, each home visit includes specific information that should be conveyed or collected at that time. All home visits include literacy materials and a child-centered activity. The expansion program at the Garfield School started later in the school year than the Center based program because this was the first year that it has been offered. Due to this fact, the families in the expansion classroom received two fewer home visits this year and, therefore, were two behind in the home visit sequence. The total number of home visits conducted by the home visitors was six for the Center based group and four for the Garfield based group. The classrooms in the Child Development Center at Oregon State University and at the Garfield School were similar in nature because they are based upon the same teaching philosophy and the families received the same benefits and services.

Measures

Four measures were used to collect information on the child's temperament, home environment, family stress level, and prosocial behavior. The measures used

were the Children's Behavior Questionnaire: Short Form, Early Childhood Home Inventory (HOME), Family Events Checklist, and Modified Prosocial Behavior Questionnaire (mod-PBQ).

Children's Behavior Questionnaire: Short Form

The Children's Behavior Questionnaire: Short Form (CBQ-sf: Rothbart, Ahadi, Hershey, Fisher, 1996- adapted by Vale & Derryberry, 1999) was used to measure the child's temperament (see Appendix B). The parent who was present or whose presence was most dominant during the home visit completed this questionnaire. In all but one case this was the mother. Temperament is measured on a 7-point scale, in which 1 = extremely true, 2 = quite untrue, 3 = slightly untrue, 4 = neither true nor untrue, 5 = slightly true, 6 = quite true, 7 = extremely true, and NA = not applicable. The scale measures six behavioral expressions of temperament and three temperament types. Smiling and laughter and high intensity pleasure represent a positive reactive temperament, anger and frustration and fear represent a negative reactive temperament, and attention and inhibitory control represent self-regulatory temperament. There are five items on the questionnaire that measure each of the six behavioral expressions. Nine different scores can be obtained from this measure including a score for each of the six behavioral expressions of the temperament types measured by the scale and a score for each of the three temperament types. The scores that were analyzed in this study were the temperament type scores (ranging from 10-70).

This short form of the Children's Behavior Questionnaire was adapted for this study. Internal consistency and reliability estimates on the original form of the questionnaire have been reported in a number of studies. In a study with 262 participants the coefficient alpha ranged from .67 to .94 with a mean internal consistency estimate of .77 across 15 scales. In a study with 171 participants the internal consistency ranged from .68 to .93 with a mean reliability estimate of .78 across 15 scales. In the Oregon Social Learning Center samples the internal consistency rating for four to five year olds ranged from .63 to .92 with a mean of .74. These estimates suggest adequate consistency of item content within the CBQ scales. The reliability of the shortened form was assessed during the current study by calculating an alpha. The alpha was analyzed according to the collapsed categories of positive reactivity, which included smiling and laughter and high intensity pleasure, negative reactivity, which included fear and anger and frustration, and self-regulation, which included inhibitory control and attentional control. Alpha's of .54 for negative reactivity, .60 for the self-regulatory, and .62 for positive reactivity were obtained. These alphas are at a moderate level. Based upon the reliability scores that have been obtained on the longer well-used measure and the reliability scores obtained on the short form one can assume that this measure is fairly reliable.

Early Childhood Home Inventory

The Early Childhood Home Inventory (HOME), developed by Caldwell & Bradley (1984), was used to assess the child's home environment (see Appendix C). This version of the inventory is designed for use with children between the ages of three and six years. It is divided into nine sub-categories: learning material (11 items), language stimulation (seven items), physical environment (seven items), responsivity (seven items), academic stimulation (five items), modeling (five items), variety (nine items), and acceptance (four items). Each item was scored by the home visitor by placing a plus or minus in the box alongside the item based upon whether the behavior was observed during the visit or if the parent reported that the item was true of the home environment. A score was obtained for each of these nine sub-categories and a total score was established by adding together all of the sub-category scores. The sub-category scores and the total score are grouped into categories that represent the lowest fourth, middle half, and upper fourth based upon the range of scores represented by each category. For example, within the learning material category the children whose learning materials were in the lowest fourth obtained scores that ranged from 0-2, the children whose learning materials were in the middle half obtained scores that ranged from 3-9, and the children whose learning materials were in the upper fourth obtained scores that ranged from 10-11. Total scores ranging from 0-29 are representative of a home environment in the lowest fourth, total scores ranging from 30-45 are representative of a home

environment in the middle half, and total scores ranging from 46-55 are representative of a home environment in the upper fourth.

Brooks-Gunn et al. (1995) devised a grouping system of the sub-category scores into three sub-scale scores that were used in this study along with the total score. The first sub-scale is learning stimulation (learning environment), which is a combination of the learning, academic, language stimulation, and variety sub-categories. The researchers determined an alpha reliability of .87 for the 32 items in this sub-scale. The other two sub-scales are physical environment, which consists of the physical environment sub-category ($\alpha = .74$ for 7 items) and emotional atmosphere/parental warmth (emotional environment), which includes the responsiveness sub-category ($\alpha = .64$ for 7 items). Learning environment scores range from 0-32, physical environment scores range from 0-7, and emotional environment scores range from 0-7.

The information that was recorded about the family's home environment on the measure is gathered from two sources while on a home visit with the family when the child is present. One source was an informal interview with the parent that occurs during the home visit and the other source was the observations made by the home visitor about the family's home environment. Different items have different sources of information based upon the item content. Examples of informal interview items are "some delay of food gratification is expected" and "child has toys that help teach the names of animals", and examples of observational items are "building appears safe and free of hazards" and "parent helps child demonstrate

some achievement during the visit”. The background information sheet formulated by Vale (1998) according to the guidelines set by Caldwell & Bradley (1984) was used as a guide and recording device during the interview. After the home visit the home visitor answered the questions on the measure based on the information recorded on the home background information sheet and on her observations of the home environment.

The background sheet includes information about the four probes that Caldwell & Bradley (1984) specified in their administration manual including (1) trips out of the home and visits into the home, (2) toys that are available to the child, (3) the way the family arranges the daily routine, and (4) discipline. More detailed questions within these probes are included for the interviewer to ask if the parent has not already brought them up on her or his own. These probes were put on a worksheet to make the process easier for the home visitor and to make sure that all of the necessary information was collected and recorded. Three items were changed slightly to update the measure and gear it more toward the low-income population of this sample. The item stating that the family buys and reads a daily newspaper was changed to the family has access to a newspaper. The item stating that the family subscribes to at least one magazine was changed to the family has access to a magazine. These items were changed because many low-income families do not have enough money to subscribe to or buy a newspaper or magazine, but they do have access to and, therefore, the opportunity to read a newspaper or magazine. The item stating child has record player or tape recorder

and at least five children's records or tapes was expanded to include a video with music and five children's videos with music. This item was changed to include videos in order to update the scale because many families in this day and age use videos to play music.

Certain demographic information is also recorded on the HOME. This information includes, the caregiver for the visit and his or her relationship to the child, other individual's present during the visit, family composition, family ethnicity, language spoken, maternal education, paternal education, whether mother is employed and type of work when employed, whether father is employed and type of work when employed, current child care arrangements, and a summary of the past year's child care arrangements.

The internal consistency estimates based on the Kuder-Richardson 20 formula, range from .53 to .83 for the HOME sub-scales and .93 for the total scale. The stability of the measure was determined through an assessment of a sample when the children were three years old and then again when the children were four. The coefficients range from $r = .05$ to $r = .70$. The inter- correlations among the three and four and a half-year old HOME sub-scale scores vary from negligible to moderate. Inter-rater reliability was determined for the three home visitors that conducted the scoring of the HOME through a Pearson's correlation. All of the correlations were significant ($r = .918$, $p < .001$ rater one and rater two, $r = .895$, $p < .003$ rater one and rater three, $r = .918$, $p < .001$ rater two and rater three).

Family Events Checklist

The Family Events Checklist established by Fisher et al. (1998) is a self-report measure that measures family stressors that are likely to occur on a daily basis (see Appendix D). The parent who was present and most dominant during the home visit was the one who completed this checklist. In all but one case this parent was the mother. The parent was asked to answer each item in the 19-item checklist using a 4-point scale including, 1 = no, event did not occur, 2 = yes, an event did occur: but had no negative effect on you, 3 = yes, an event did occur: had a slightly negative effect on you, 4 = yes, an event did occur: had a very negative effect on you. A single stress score was computed by adding the parent's rating for each item. Higher scores indicate a higher stress level present in the family on a daily basis.

Fisher et al. (1998) have conducted a confirmatory factor analysis which examined the extent to which the total family stress score can be examined in the sub-categories interpersonal tension, financial problems, and child-related difficulties. Their results yielded an adequate fit of the model to the data with a $\chi^2 (149) = 302.17$ for mothers and a $\chi^2 (149) = 316.97$ for fathers. Higher stress scores were present in higher risk samples across three sub-categories, which suggests that the measure is valid in what it is measuring.

For the current study an alpha was computed for the total score and the sub-scale scores to determine the reliability of the measure. Alpha's of .92 for the total score, .89 for the child problems sub-scale, .87 for the financial difficulties sub-

scale, and .76 for the interpersonal tension sub-scale were obtained. All of these alphas were high indicating that the measure is internally consistent. The total score (ranging from 19-76) and the sub-scale scores (financial difficulties ranging from 6-24, child problems ranging from 4-16, and interpersonal tension ranging from 9-36) were used in the analysis. For all of the scales higher scores indicate more stress present in the family on a daily basis.

Modified Prosocial Behavior Questionnaire

The Modified Prosocial Behavior Questionnaire (mod-PBQ: Weir & Duveen, 1981- adapted by Doescher, 1986) was used to assess the child's prosocial behavior (see Appendix E). The child's head teacher completed the questionnaire. The mod-PBQ has 15 items describing prosocial actions often displayed by preschool children. Teachers were asked to rate children on each item using a 3-point scale where 1 point is awarded for "rarely applies", 2 points are awarded for "applies somewhat", and 3 points are awarded for "certainly applies". Three types of prosocial behavior (helping, sharing, and cooperating) are each measured by five items on the scale. The mod-PBQ yields four different scores for each child including (a) a total prosocial score, ranging from 15 to 45 points, and (b) three sub-scale scores, including cooperating, sharing, and helping, each ranging from 5 to 15 points. The total prosocial score was used in this study.

The original PBQ consisted of 20 items that were designed for use with five to eight year old British children. A test-retest reliability coefficient of .91 has

been obtained for the PBQ, with three weeks between tests. The inter-rater reliability coefficient for the questionnaire has been moderate at .66. Split-half reliability coefficients for three different samples, however, have ranged from .82 to .85. Moderate validity coefficients (e.g., $r = .56$) have shown that scores of children on the PBQ have been related to their actual classroom behavior.

The version that was used for this study was modified further by Doescher (1986) when she used it as a measurement tool in her thesis that explored the prosocial behavior displayed by pre-school children who attend the Child Development Center at Oregon State University. She adapted the mod-PBQ so that the questions would pertain to preschool children because the original version was designed for school-age children. She undertook a validity study to determine if the mod-PBQ score would be related to scores on the other prosocial tests she used in her study. She found that only the teachers' ratings of children's Total Prosocial Behavior ($r = .36, p < .01$) and Sharing Subscale ($r = .31, p < .05$) scores were significantly related to children's Verbal Sharing scores obtained from the Sharing Situational Test. All other correlation coefficients expressing the relationship between the mod-PBQ and Situational Test scores were found to be non-significant.

Procedure

Before the measures were administered a certain amount of training was necessary to ensure that they were administered correctly. The administration of the measures also followed a certain sequence.

Training

Before the HOME was administered several training sessions were conducted with the other two home visitors. The goal of the first session was to familiarize the home visitors with each of the items and their administration procedure. A succinct description of each item on the inventory was given and explained until each home visitor understood the nature of the items. Each home visitor was given a copy of the descriptions of each item, that are found in the HOME administration manual, to further review and refer to. After this in depth look at the inventory, the items that need to be prompted by the home visitor and can not be left purely to observation were pointed out. These items were included in a worksheet, which was reviewed in depth during two other training sessions.

All three home visitors participated in a trial home visit with a family whose child was a past participant in the OHSPP program. One visitor interviewed the mother while using the worksheet as a guide and recording device for her answers. While the HOME was being administered, one of the visitors was participating in an activity with the children and the other visitor was observing. After the home visit, all of the visitors filled out their own HOME scoring sheets. The information

obtained through the interview and recorded on the worksheet was made available to all. Each visitor answered the questions based upon her own observation.

The other measures used did not require training because they are self-report measures with clear instructions written on them. The home visitor was told to explain the instructions to the parent and answer any questions that might come up when administering the Children's Behavior Questionnaire: Short Form and the Family Events Checklist. A Spanish-speaking translator accompanied the home visitor on the visits with the Spanish speaking families. The Family Events Checklist was translated into Spanish to ease understanding.

Sequence of Measure Administration

The HOME and the Family Events Checklist were administered on the third home visit for both the Center and Garfield groups. The Children's Behavior Questionnaire: Short Form was administered on the fourth home visit to both groups. The teachers completed the Modified Prosocial Questionnaire after the child had received the third home visit and before the child received the fourth home visit to maintain consistency in time of completion. The research study was explained and the parent's were given the option to sign the consent form, (see Appendix F), during the fourth visit for the Garfield based group and during the sixth visit for the Center based group. This visit was the last visit with each family for the school year. Even though the Center and Garfield groups had varying numbers of home visits the administration of measures was consistently given

during the same home visit for both groups. The consent form was given on the last home visit with each family to maintain consistency.

Chapter 4

RESULTS

The purpose of this exploratory study was to examine the role that the factors' temperament, home environment, and family stress play in the production of prosocial behavior by low-income pre-school children. Each of these factors was explored in depth in their relation to prosocial behavior by examining the sub-scales of each of the measures.

The first step in the analysis was a correlation matrix that explored how the total self-regulatory temperament score, home environment score, total stress score, and prosocial behavior score were correlated. The next step was a multiple linear regression analysis that assessed which of the three variables, including (1) self-regulatory temperament score, (2) total home environment score, and (3) total stress score contributed most to explaining the variance present in the total prosocial behavior score in this low-income pre-school age population. Because the initial regression did not demonstrate a significant relationship between any of the independent variables and the dependent variable, the analysis was expanded to include the sub-scales of each of the measures. Eventually the regression model was narrowed to include only the variables that explained a significant amount of the variance displayed in the prosocial behavior score.

Multicollinearity of the independent variables was checked for the regression analyses by computing the variance inflation factors. The results of these analyses will be explained in reference to each analysis.

Initial Analysis

The means and standard deviations for the variables', total prosocial behavior, self-regulatory temperament, total home environment score, and total stress scores are represented in Table 4.1. The total prosocial behavior score $\underline{M} = 35.48$, $\underline{SD} = 6.73$ was above the mean in the range of possible scores, which is $M = 30$, but the standard deviation placed it above or below the mean depending on the direction that it deviated. The self-regulatory temperament score $\underline{M} = 51.22$, $\underline{SD} = 7.92$ was above the mean in the range of possible scores for this temperament type, which is $\underline{M} = 40$. Even when the standard deviation was taken into consideration the score was still above the mean. The total home environment score $\underline{M} = 39.14$, $\underline{SD} = 10.23$ placed the score in the middle half (30-45) according to the scoring criteria for the Early Childhood Home Inventory. The standard deviation was large enough to elevate the score to the upper fourth (46-55) and to lower the score to the lower fourth (0-29) depending on the direction of the score deviation. The total stress score $\underline{M} = 33.08$, $\underline{SD} = 11.62$ fell below the mean score for the scale, which is $\underline{M} = 47.5$. Even when the standard deviation was taken into account the score still fell below the mean stress score indicating that this sample reported low amounts of stress.

Table 4.1

Descriptive statistics for the total prosocial behavior score, self-regulatory temperament score, total home environment score, and total stress score (n=35)

Variables	Mean	SD
Total prosocial behavior score	35.48	6.73
Self-regulatory temperament score	51.22	7.92
Total home environment score	39.14	10.23
Total stress score	33.08	11.62

Table 4.2 represents the Pearson correlation coefficients for these variables.

The total stress score and the total prosocial behavior score tended to be significantly and negatively correlated ($p < .10$). The other two variables, total home environment score and total self-regulatory temperament score, were not significantly related to the total prosocial behavior score. The total home environment score and the self-regulatory temperament score tended to be significantly and negatively correlated with each other ($p < .10$). The total home environment score was also significantly and negatively correlated with the total stress score ($p < .01$). The total stress score and the self-regulatory temperament score tended to be significantly and negatively correlated ($p < .10$). No other significant relationships were found. A multicollinearity analysis of the variables determined that the independent variables were multicollinear. Subsequent analyses were not affected by multicollinearity because these variables were not used due to

Table 4.2

Correlation coefficients for total prosocial behavior score, self-regulatory temperament score, total home environment score, and total stress score

1. Total prosocial behavior score	2. Total self-regulatory temperament score	3. Total home environment score	4. Total stress score
1	1.00		
2	.100	1.00	
3	.083	-.244 ⁺	1.00
4	-.243 ⁺	-.247 ⁺	-.497 ^{**}

^{**} $p < .01$ ^{*} $p < .05$ ⁺ $p < .10$

the fact that the regression analysis revealed that they were not significantly related to the total prosocial behavior score.

The next step in the analysis was a multiple linear regression analysis to determine which of the three independent variables including, total self-regulatory temperament score, total home environment score, and total stress score, explained the most variance in the dependent variable total prosocial behavior score. Table 4.3 illuminates these results.

The overall regression model was not significant, only explaining 6% of the variance in the prosocial behavior score. The individual contributions of the self-regulatory temperament, total home environment, and total stress scores did not make significant contributions either. Because the results of this initial regression

analysis involving the total scores were not significant, subsequent regression analyses were conducted using the sub-scales of each of the total scores as predictors.

Table 4.3

Results of regression analysis using total self-regulatory temperament score, total home environment score, and total stress score as predictors for total prosocial behavior score

Independent variables	Total prosocial behavior score	
	<u>b</u>	β
Self-regulatory temperament score	.002.517	.030
Total home environment score	-.002.29	- .035
Total stress score	-.146	-.253
R^2		.061

Sub-Scale Analyses

The next step in the analysis was to explore the sub-scales of each of the measures as predictors. This exploratory analysis resulted in further understanding of the relationships present between the variables.

Temperament Sub-Scales

The first sub-scale scores explored in relation to prosocial behavior were the Children's Behavior Questionnaire: Short Form sub-scale's of self-regulatory temperament, negative reactive temperament, and positive reactive temperament. Table 4.4 displays the means and standard deviations for the temperament sub-scale variables. The $\bar{M} = 43.5$ and the possible scores range from 10-70 for this measure. The score for self-regulatory temperament was above the mean, negative reactive temperament was below the mean, and positive reactive temperament was above the mean. These means suggested that this sample was high in self-regulatory temperament and positive reactive temperament and low in negative reactive temperament. Self-regulatory temperament's standard deviation was large enough to cause the score to drop slightly below the average if the score deviated in that direction. The standard deviation for negative reactive temperament was large enough to cause the score to rise above the average if it deviated in that direction. The standard deviation for positive reactive temperament did not change the score if it deviates in either direction.

Table 4.5 displays the correlation matrix that revealed that none of the temperament sub-scale scores were significantly correlated with the total prosocial behavior score. Negative reactive temperament was significantly and negatively correlated with self-regulatory temperament ($p < .05$) and positive reactive temperament was significantly and positively correlated with self-regulatory temperament ($p < .05$), however. A multicollinearity analysis revealed that all of

the temperament sub-scales were multicollinear. These sub-scales were not used in subsequent analyses because they were not significantly related to the total prosocial behavior score, so multicollinearity did not present an issue in the final analysis.

Table 4.4

Demographic statistics for the independent variables' self-regulatory temperament, negative reactive temperament, and positive reactive temperament (n = 35)

Variables	Mean	SD
Self-regulatory temperament	51.22	7.92
Negative reactive temperament	39.97	10.02
Positive reactive temperament	64.08	3.79

Table 4.6 displays the regression analysis with self-regulatory, negative reactive, and positive reactive temperaments as predictors for the total prosocial behavior score. The overall regression explained only 4% of the variance present in prosocial behavior and was not significant. None of the regressions with the individual temperament scores yielded significance either.

Home Environment Sub-Scales

Next the sub-scale variables of the Early Childhood Home Inventory, the physical environment, emotional environment, and learning environment, were

explored through a Pearson correlation analysis and a multiple linear regression (Brooks-Gunn et al., 1995). Table 4.7 displays the means and standard deviations for the home environment sub-scale variables.

Table 4.5

Correlation coefficients for total prosocial behavior score, self-regulatory temperament, negative reactive temperament, and positive reactive temperament

	1.Total prosocial behavior score	2.Self-regulatory temperament	3.Negative reactive temperament	4.Positive reactive temperament
1	1.00			
2	.100	1.00		
3	-.188	-.309*	1.00	
4	.031	.277*	-.124	1.00

* $p < .05$

The mean score for the physical environment was above the $\underline{M} = 3.5$ in the possible score range from 0-7. The mean score for the emotional environment was also above the $\underline{M} = 3.5$ in the possible score range from 0-7. The mean score for the learning environment was above the $\underline{M} = 16$ in the possible score range from 0-32 as well. The standard deviation was large enough, however, for both the emotional environment and the learning environment to place the score below the mean if it

deviates in that direction. The fact that these means are above the possible means implies that this sample had above average home environments.

Table 4.6

Results of regression analysis using self-regulatory temperament, negative reactive temperament, and positive reactive temperament to predict the total prosocial behavior score

Independent variables	Total prosocial behavior score	
	<u>b</u>	β
Self-regulatory temperament	.004.071	.048
Negative reactive temperament	-.117	-.173
Positive reactive temperament	-.0007.443	-.004
R^2	.037	

Table 4.8 reveals the correlation, which indicated that the physical environment sub-scale was significantly and positively correlated ($p < .05$) with prosocial behavior. Emotional environment and learning environment were not significantly correlated with prosocial behavior.

The emotional environment sub-scale and the learning environment sub-scale were significantly and positively correlated with each other ($p < .01$). A multicollinearity analysis of all of the Home Inventory sub-scales concurrently suggested that these two sub-scales were multicollinear as well. The sub-scales,

learning environment and emotional environment, were not used in subsequent analyses because they were not significantly related to the total prosocial behavior score, so multicollinearity did not present an issue in the final analysis anyway.

Table 4.7

Demographic statistics for the independent variables' physical environment, emotional environment, and learning environment (n = 35)

Variables	Mean	SD
Physical environment	5.37	1.40
Emotional environment	4.86	1.70
Learning environment	21.40	8.28

Table 4.8

Correlation coefficients for total prosocial behavior score, physical environment, emotional environment, and learning environment

	1.Total prosocial behavior score	2.Physical environment	3.Emotional environment	4. Learning environment
1	1.00			
2	.321*	1.00		
3	-.043	-.014	1.00	
4	.077	.028	.615**	1.00

** p < .01 * p < .05

Table 4.9 displays the regression analysis in which the overall regression explained 12% of the variance, but was not significant. The regression also revealed that the physical environment sub-scale tended to significantly and positively ($p < .10$) explain the variance present in the total prosocial behavior score. This result meant that as the child's physical environment score increased the child's prosocial behavior increased. The other two variables did not significantly contribute to the variance in the total prosocial behavior score.

Table 4.9

Results of regression analysis using physical environment, emotional environment, and learning environment to predict total prosocial behavior score

Independent variables	Total prosocial behavior score	
	<u>b</u>	β
Physical environment	1.52 ⁺	.315 ⁺
Emotional environment	-.510	- .129
Learning environment	.120	.148
R^2		.118

⁺ $p < .10$

Stress Sub-Scales

The last sub-scale analysis involved the sub-scales of the Family Events Checklist, which were financial difficulties, child problems, and interpersonal tension (Fisher et al., 1998). Table 4.10 reveals the means and standard deviations for the stress sub-scale variables. The financial difficulties sub-scale mean was below the $\underline{M} = 15$ in the possible range of scores from 6-24. The mean for the child problems sub-scale was below the $\underline{M} = 10$ in the possible range of scores from 4-16. The mean for the interpersonal tension sub-scale was below the $M = 22.5$ in the possible range of scores from 9-36. The standard deviation for the financial difficulties sub-scale was large enough to cause the score to rise above the mean when the score deviated in that direction. Based on these mean scores, the sample's stress level was below the mean level across all three categories.

Table 4.10

Demographic statistics for the independent variables' financial difficulties, child problems, and interpersonal tension (n = 35)

Variables	Mean	SD
Financial difficulties	10.94	4.76
Child problems	6.06	3.55
Interpersonal tension	15.71	4.62

The Pearson Correlation, displayed in table 4.11, revealed that financial difficulties was significantly and negatively correlated with the total prosocial behavior score ($p < .01$). The other two variables were not significantly correlated with the total prosocial behavior score. The financial difficulties sub-scale was significantly and positively correlated with child problems ($p < .01$) and interpersonal tension ($p < .01$), and the child problems sub-scale was significantly and positively correlated with interpersonal tension ($p < .05$). A test of multicollinearity was conducted which showed that these variables were multicollinear, which might explain why the overall regression analysis was significant even though the independent betas only showed the financial difficulties sub-scale to be significantly related to the total prosocial behavior score.

Table 4.11

Correlation coefficients for total prosocial behavior score, financial difficulties, child problems, and interpersonal tension

	1.Total prosocial behavior score	2.Financial difficulties	3.Child problems	4.Interpersonal tension
1	1.00			
2	-.372**	1.00		
3	-.128	.720**	1.00	
4	-.206	.706**	.674*	1.00

** $p < .01$ * $p < .05$

Table 4.12 displays the regression analysis involving the three Family Events Checklist sub-scale scores. The regression involving these three predictors explained 18% of the variance present in the prosocial behavior variable and tended to be significant ($p < .10$). The sub-scale, financial difficulties, significantly and negatively ($p < .05$) contributed toward explaining the variance of the total prosocial behavior score. This relationship indicated that as the stress due to financial difficulties increased the child displayed less prosocial behavior. The other two sub-scales were not significant in their contribution to prosocial behavior.

Table 4.12

Results of regression analysis using financial difficulties, child problems, and interpersonal tension to predict the total prosocial behavior score

Independent variables	Total prosocial behavior score	
	<u>b</u>	β
Financial difficulties	-.834*	-.589*
Child problems	.537	.284
Interpersonal tension	.002812	.019
R^2	.179 ⁺	

* $p < .05$ ⁺ $p < .10$

Final Analysis

The last step in the analysis was to form the best possible model to predict prosocial behavior based upon the results from the previous regressions. The two significant sub-scales, physical environment and financial difficulties, were explored in relation to prosocial behavior through a Pearson's correlation and a multiple linear regression analysis.

Table 4.13 displays the correlation matrix between the physical environment, financial difficulties, and prosocial behavior. This correlation revealed that the physical environment and prosocial behavior were significantly and positively correlated ($p < .05$) and that financial difficulties and prosocial behavior were significantly and negatively correlated ($p < .10$). Physical environment and financial difficulties were not significantly correlated. The variables were also not multicollinear.

The multiple linear regression analysis in table 4.14 revealed that the overall regression including physical environment and financial difficulties as predictors was significant ($p < .05$) and explained 20% of the variance in the total prosocial behavior score. Financial difficulties tended to significantly and negatively contribute to children's prosocial behavior scores ($p < .10$) and physical environment almost reached this level ($p = .12$), in its tendency to positively contribute to children's prosocial behavior scores.

Table 4.13

Correlation coefficients for total prosocial behavior score, physical environment, and financial difficulties

1. Total prosocial behavior score	2. Physical environment	3. Financial difficulties
1	1.00	
2	.321*	1.00
3	-.372**	1.00

** $p < .01$ * $p < .05$

Table 4.14

Results of regression analysis using physical environment and financial difficulties to predict the total prosocial behavior score

Independent variables	Total prosocial behavior score	
	b	β
Physical environment	1.242	.257
Financial difficulties	-.453 ⁺	-.320 ⁺
R^2		.202*

* $p < .05$ ⁺ $p < .10$

Summary

Several analyses were used to explore the relation between the independent variables' home environment, family stress level, child temperament and the dependent variable prosocial behavior. This analysis was expanded to include an exploration of the sub-scales for each of the independent variables, which allowed for a more in depth analysis.

The results of the initial analysis, which included the total scores of the independent variables, yielded one significant correlation, the total stress score was significantly negatively correlated with the total prosocial behavior score, but the regression analysis did not yield significant results. The non-significant nature of this first regression analysis lead to an analysis of the sub-scales, which yielded significance.

The first analysis of the Children's Behavior Questionnaire: Short Form sub-scales determined that none of the temperament sub-scales including, self-regulatory, negative reactive, and positive reactive temperament, were significantly related to prosocial behavior. The next analysis involving the Early Childhood Home Inventory sub-scales did not yield significant results overall, but the physical environment sub-scale tended to contribute significantly and positively to prosocial behavior. The analysis involving the Family Events Checklist sub-scales yielded significant results overall, and specifically, the financial difficulties sub-scale was determined to be significantly and negatively related to prosocial behavior.

The financial difficulties sub-scale and the physical environment sub-scale became part of the final regression analysis, which explained a significant amount of the variance present in prosocial behavior. The final regression analysis determined that financial difficulties tended to negatively contribute to children's prosocial behavior, and the physical environment almost reached this level in positively contributing to children's prosocial behavior as well. Overall, these results revealed that financial difficulties and the physical environment may be significant predictors in the prosocial behavior displayed by pre-school age low-income children. Perhaps, a larger sample might help to determine whether such relationships between the variables exist by increasing the statistical power.

Chapter 5

DISCUSSION

A combination microsystem, mesosystem, exosystem, and macrosystem person-process context model was applied to understanding the relationship between the prosocial behavior demonstrated by low-income pre-school age children and their temperament, home environment, and family stress level (Bronfenbrenner, 1977; Bronfenbrenner, 1986; & Bronfenbrenner & Crouter, 1983). Each of these variables was explored in detail. The findings of this study indicated that the home environment sub-scale, physical environment, and the stress sub-scale, financial difficulties, appeared to significantly contribute to the prosocial behavior displayed by low-income pre-school age children. This implied that the process variable (prosocial behavior) was being impacted by the context variables' (physical environment and financial difficulties) but not by the person variable (temperament).

The Relationship between Temperament and Prosocial Behavior

The results of the analyses including the temperament scores (self-regulatory temperament, negative reactive temperament, and positive reactive temperament) did not demonstrate that temperament played a significant role in impacting prosocial behavior in this low-income pre-school age population. Only a limited number of studies to date have explored the connection between

temperament and prosocial behavior (Eisenberg et al., 1996; Denham, 1986; Lennon & Eisenberg, 1987; O'Connor & Cuevas, 1982; & Stanhope et al., 1987). These studies have come to varying conclusion about which type of temperament plays the biggest role in shaping prosocial behavior, but they have all implied that temperament does play a role in general, which was not supported by the results of this study.

The sample size could have been one reason for these results. Based upon the correlation with all three temperament types and prosocial behavior, negative reactive temperament was almost up to a level where it would indicate a tendency toward significance. With a larger sample size it would be possible to determine whether or not temperament really does play a role in determining prosocial behavior in a low-income pre-school age population.

The Relationship between the Home Environment and Prosocial Behavior

The total home environment score did not contribute significantly to the display of prosocial behavior, but the sub-scale physical environment score tended to make a significant contribution when examined in the context of the other environmental sub-scales (emotional environment and learning environment). The physical environment tended to significantly and positively contribute to prosocial behavior, which implied that if the “building appears safe and free of hazards”, the “outside play environment appears safe”, the “interior of the apartment is not dark or perceptually monotonous”, the “neighborhood is aesthetically pleasing”, the

“house has 100 square feet of living space per person”, the “rooms are not overcrowded with furniture”, and the “house is reasonably clean and minimally cluttered”, then the child would display more prosocial behavior. When the physical environment variable was examined along with the other significant variable stress due to financial difficulties, it only almost reached a tendency toward significance, even though the overall regression was significant in its impact upon prosocial behavior. These results indicate that the physical environment does not have as strong an impact upon prosocial behavior as the stress due to financial difficulties does.

Enthusiasm for researching the home environment did not gain momentum until the 1960's and within this realm of study the physical environment has been the most neglected area (Bradley, 1993). No studies to date have explored the specific effects of the physical environment on the prosocial behavior displayed by low-income pre-school age children. Homel & Burns (1989) did find evidence in their study that the physical environment did impact emotional and social adjustment and concluded that more emphasis needs to be placed on this aspect of environmental effects. The results of the current study also suggest that this area needs to become more of a research focus.

Past research has predominantly focused on, and found results supporting, the fact that the emotional and learning aspects of the home environment play a role in shaping the academic and behavioral adjustment of low-income pre-school age children (Dubow & Ippolito, 1994 & Bradley, 1993). Dubow & Ippolito's (1994)

study focused specifically on a low-income population like the current study has, but the children were elementary age. These studies were not focused on how these environmental variables were linked to the production of prosocial behavior, so this could explain why the current study found more support for the physical environment variable.

Gibson's (1986) Ecological Theory of Visual Perception offers a theoretical explanation for why the findings of this study demonstrated that the physical aspect of the home environment impacted the display of prosocial behavior in low-income pre-school age children. According to this theory, the way that children learn about their environment is through perception. This perception is inherent within them and leads them to discover and explore their environments. Environments are perceived and learned differently based on what they afford (provide, offer, or furnish) the perceiver. Based on the principles of Gibson's theory it would be expected that the affordances present in the physical environment would effect children's perception, learning, and behavior within that environment. This theory would explain the relationship between the physical environment and prosocial behavior as being directly related to the affordances present in the home environment. Therefore, supporting the positive relationship between these two variables, which implies that as the number of affordances increase in the physical environment the amount of prosocial behavior displayed will increase as well.

Study of the home environment is a new field that warrants much more exploration. The results of this study suggest that the physical environment plays

the largest home environmental role in impacting the amount of prosocial behavior demonstrated by low-income pre-school age children.

The Relationship between Family Stress and Prosocial Behavior

Although the simple correlation analysis involving the total stress score and prosocial behavior was significant, subsequent correlational and regression analyses of the sub-scale stress scores (financial difficulties, child problems, and interpersonal tension) revealed that only financial difficulties contributed significantly to prosocial behavior. This relationship between financial difficulties and prosocial behavior was negative, implying that as family stress due to financial difficulties increased, the amount of prosocial behavior displayed by the child decreased. Furthermore, when financial difficulties was included in a subsequent regression analysis with the only other significant variable physical environment, its' tendency toward significance continued in the role it played in the production of prosocial behavior. These results imply that the stress due to financial difficulties, in comparison to the other variables explored, tended to play a stronger role in decreasing the production of prosocial behavior demonstrated by the low-income pre-school age children in this study.

Past research has found mixed results on the relationship between poverty and prosocial behavior (Eisenberg & Mussen, 1989 & Eisenberg & Fabes, 1998). Some studies have found evidence to support the fact that higher income children (Berkowitz, 1968; Doland & Adelberg, 1967; Payne, 1980; Ramsey, 1988; &

Raviv & Bar Tal, 1981), lower income children (Knight, 1982 & Ugurel-Semin, 1952), and neither (Dreman & Greenbaum, 1973) display more prosocial behavior. The results of the current study suggest that as the amount of family stress due to financial difficulties increases the amount of prosocial behavior displayed by the child decreases, therefore supporting the research that has concluded that higher income children display more prosocial behavior.

Much research has demonstrated a predictive relationship between high amounts of stress and children's adjustment and display of behavior problems (McLoyd, 1998; Sanler & Block, 1979; Smith & Carlson, 1997; Sterling et al., 1985; & Wertlieb et al., 1987). McLoyd (1998) posited that one mediator of socioeconomic disadvantage and the child's socio-emotional functioning was exposure to acute and chronic stressors. The current study also supports the idea that stress may play a role in mediating socioeconomic disadvantage and behavior, in this case prosocial behavior. All of the children who were part of the current study were part of socio-economically disadvantaged families and financial stress presented itself as the variable that most significantly impacted the display of prosocial behavior by these children. This study has narrowed the relationship between socio-economic status, financial stress, and prosocial behavior by holding the variable of socio-economic status constant across the sample. However, the fact that financial stress was the stress variable with the largest impact might be a product of the fact that the study did hold the low-income socio-economic status constant because all of these families were experiencing financial stress. The

relationship demonstrated to exist between these variables was consistent with McLoyd's (1998) conclusion about the role that stress plays in the production of behavior.

Earlier studies have demonstrated that exposure to family stress leads to an increase in the prosocial behavior demonstrated toward family members, but not towards peers (Eisenberg & Fabes, 1998). The prosocial behavior measured in this study was indicative of that displayed toward peers in the classroom, not at home. This could be one explanation for why the results showed a decrease in prosocial behavior in relation to stress level. Further studies would benefit from measuring the prosocial behavior demonstrated in the home, as well, to clarify the relationship between family stress and the prosocial behavior demonstrated in the home versus that demonstrated among peers.

Cummings et al.'s (1984) study revealed that the prosocial behavior demonstrated during inter-parental conflict increased with age. An age variable would be important to include in further studies. An increased sample size would aid in the analysis of these additional variables as well by adding to the statistical power.

Overall, the current study has revealed that as family stress due to financial stress increased the prosocial behavior demonstrated by low-income pre-school age children in the classroom decreased. This finding is supported by some of the past literature on the topic and not supported by others. It serves most importantly to

add to the small base of literature focused specifically on how family stress impacts upon prosocial behavior.

Summary

When analyzed in the context of the person-process-context model, the results of this study imply that the environment played more of a role than biology played in shaping prosocial behavior (Bronfenbrenner, 1997; Bronfenbrenner, 1986; & Bronfenbrenner & Crouter, 1983). Specifically, the context variables' physical environment and family stress due to financial difficulties, played more of a role than the person variable, temperament, in determining whether or not the process, prosocial behavior, was displayed by low-income pre-school age children. Perhaps, the fact that temperament made no significant impact on prosocial behavior was because children's self-regulatory and positive reactive temperament scores tended to pile up at the upper end of the scale, while negative reactive temperament scores tended to pile up at the lower end of the scale. The fact that the temperament theory utilized had somewhat more of an environmental focus than other more strictly biological temperament theories might have been another reason that temperament appeared to have less of an impact than the other two variables. Whatever the case, environmental variables appeared to make a significant impact on children's prosocial behavior. Certain factors may have played a role in impacting these results. These factors will be discussed at length in the next section.

Limitations and Direction for Future Research

Although the results of this study provided important implications regarding child development and behavior, certain limitations were encountered which suggested directions for future research. Steps were taken in this study to lessen the impact of these limitations and acknowledgement of them aids in further eliminating and easing their limiting impacts.

One limitation was the fact that two of the measures, The Children's Behavior Questionnaire: Short Form and The Family Events Checklist, were so newly developed that they had not been tested to determine whether they were internally consistent measures. Before any data analysis took place in this study both measures were tested and the testing revealed that they were internally consistent. The Family Events Checklist was highly internally consistent, while the Children's Behavior Questionnaire: Short Form was only moderately so. Perhaps this could be one explanation for why the temperament variable was not significant in its impact upon prosocial behavior. Conducting an alpha test of reliability for these measures was an important component of this study that has in itself aided future research.

One limitation present in this study was the issue of multicollinearity. Several of the sub-scales were correlated with each other. The variables that were part of the final analysis were not multicollinear, however, so multicollinearity did not impact the final conclusions that were drawn. Further studies should work to reduce this problem.

Another limitation was the fact that the Oregon Head Start Pre-kindergarten Program (OHSPP) was centered at two different schools and the classrooms at these schools started at different times in the year. In order to combat this problem, all of the measures were collected during the same home visit to normalize the collection process. For example, all of the Family Events Checklists were collected on the third home visit for both groups. The programs are also based upon the same principles and are, therefore, very similar in nature. From now on the classrooms will all begin on the same day, so future researchers will not be presented with this problem. The year that this study was conducted was a transition year for the program, which is now established.

The small sample size was a large limitation present in this study. This was because it limited (1) the statistical power and, therefore, the number of variables that could be explored, (2) the significance level of the variables' which showed trends toward significance, and (3) the generalizability of the findings. Only three independent variables could be explored in their relation to the dependent variable in each regression analysis in order to maintain the power at the highest level possible. When power is not maintained at a high level than the ability to detect effects is inhibited. Several separate analyses had to be conducted in order to maximize the power of the results. Variables that were demographic in nature in this study, such as age and ethnicity could not be explored further due to the limited sample size. The analysis yielded several instances when the relationships between variables showed a significant trend that might have been increased to the next

level if the sample size was increased. Finally, because of the limited sample size it was difficult to generalize the results from this study to other populations, but the results do suggest their importance in this study. Further studies should increase the sample size in order to gain more information about the results that were gained by this small-scale study.

Another limitation was the fact that the measures used were paper pencil in nature. This limited the amount of information that could be gained about the children from the people who were completing them. For example, the fact that the parent completed the Children's Behavior Questionnaire: Short Form possibly biased the responses. However, there are positive aspects of the paper-pencil measure such as the uniformity of its measurement ability, which was why this type of measure was employed in the current study. Future studies, therefore, should combine paper pencil measurement techniques with qualitative techniques, especially because the home visit venue is already established.

Another issue regards the generalizability of the results across cultures. The study sample was very diverse, which helped to increase this. However, it was during measure administration when this issue presented itself due to the possible cultural bias that existed in the measures. Using both qualitative and quantitative measures can be a way that future studies can help to combat this problem. The home visit venue did help with this because the home visitors knew the families well, and could use this knowledge when answering the questions on the measures. Steps were taken to eliminate cultural bias, but it was difficult to completely

eliminate this problem and future studies should work to do this further. A Spanish-speaking translator was present on the visits with the Spanish-speaking families in order to ease understanding of the measures, since these families for the most part spoke only Spanish and no English. The home visitor served as an interpreter for the families who spoke languages other than Spanish, since most of these families were proficient in English as well as their native language. Future studies should have translators for other languages as well.

Implications

The number of children being raised in poverty is increasing, especially in the United States, and research has suggested that children who are raised in poverty are more at risk for developing behavior problems (Dubow & Ippolito, 1994, Eisenberg & Fabes, 1998, & McLoyd, 1998). In an attempt to learn how to prevent behavior problems in low-income children this study focused on the factors that lead to the promotion of positive aspects of behavior, specifically prosocial behavior. The factors explored were the child's temperament, home environment, and family stress level. Each of these factors was explored in depth according to several sub-categories. The results of this study have implications for anyone who comes in contact with pre-school age children and is responsible for shaping their behavior, such as teachers, parents, and home visitors.

This study has demonstrated that the factors' physical aspects of the home environment and family stress due to financial difficulties may play important roles

in shaping the prosocial behavior displayed by pre-school age low-income children. Among these two factors stress due to financial difficulties was more strongly related to prosocial behavior. This relationship was negative which implied that as the financial stress in the family increased the prosocial behavior demonstrated by the child decreased.

The obvious root of the problem, which is stress due to financial difficulties, is the financial difficulties themselves. Poverty has many impacts upon the child's environment that ultimately impact the child and this finding brings to light the implications that poverty has for children's behavior. Programs like the Oregon Head Start Pre-kindergarten Program (OHSPP) serve to aid low-income families in many ways. Examples of ways that programs, such as this, can aid families in coping with financial difficulties are by suggesting financial management programs or by helping parents build their financial decision making skills. Helping families cope with the impacts of financial difficulties in the best way possible can help lead to an increase in prosocial behavior in low-income children. The impacts, of family stress due to financial difficulties on children's prosocial behavior brought to light by the results of this study, support the need for programs such as OHSPP. These programs serve to educate and provide support to families, with the goal of building positive environments for children to develop in.

The findings regarding the physical aspect of the home environment's positive relationship with prosocial behavior have implications as well and also provide support for the implementation of programs such as OHSPP. Awareness is

an important implication of this finding because study of the physical environment has been so limited in the past and, therefore, its relationship to prosocial behavior has not been brought to light. Once teachers, parents, and home visitors are made aware of its implications they will be more apt to focus directly on the physical aspects of the home environment.

The specific nature of the items measured by the Early Childhood Home Inventory allow direct intervention in aspects of the home environment. Instead of only being provided with a general idea of the way that the home environment impacts the child, teachers, parents, and home visitors, are provided with a specific picture of the child's home environment and know exactly which areas to target for intervention (Caldwell & Bradley, 1984). In the case of the physical environment, specific areas would be targeted as areas that the home visitor could discuss with the parent. For example, if the child's environment is dark and monotonous, the home visitor could educate the parent about the implications that this may have for the child's behavior. The home visitor can make the parents aware of how to access resources in the community that will help supplement the home environment as well. The OHSP program is a wonderful venue through which to provide this sort of education and intervention.

Overall, the findings present in this study support the idea that the environment, specifically the physical aspect of the home environment and family stress due to financial difficulties, has important impacts on the prosocial behavior demonstrated by low-income pre-school age children. These findings have

implications that can be used and implemented through programs serving to aid low-income children and families. Therefore, if programs such as OHSPP target and are aware of the impacts of family stress due to financial difficulties and the physical aspect of the home environment, these efforts will have great implications for the prosocial nature of low-income pre-school age children and society in general.

BIBLIOGRAPHY

Adams, C.D., Hillman, N. & Gaydos, G.R. (1994) . Behavioral difficulties in toddlers: impact of sociocultural and biological risk factors. Journal of Clinical Child Psychology, 23, 373-381.

Bar-Tal, D., Nadler, A., & Blechman, N. (1980) . The relationship between Israeli children's helping behavior and their perception of parents' socialization practices. The Journal of Social Psychology, 111, 159-167.

Berkowitz, L. (1968) . Responsibility, reciprocity, and social distance in help-giving: an experimental investigation of english social class differences. Journal of Experimental Social Psychology, 4, 46-63.

Bradley, R.H., Caldwell, B.M., & Elardo, R. (1977) . Home environment, social status, and mental test performance. Journal of Educational Psychology, 69 (6), 697-701.

Bradley, R.H., Caldwell, B.M., & Elardo, R. (1979) . Home environment and cognitive development in the first 2 years: a cross-lagged panel analysis. Developmental Psychology, 15 (3), 246-250.

Bradley, R.H., Caldwell, B.M., Rock, S.L., Ramey, C.T., Barnard, K.E., Gray, C., Gottfried, A.W., Siegel, L., & Johnson, D.L. (1989) . Home environment and cognitive development in the first 3 years of life: a collaborative study involving six sites and three ethnic groups in north america. Developmental Psychology, 25, 217-235.

Bradley, R.H. (1993) . Children's home environments, health, behavior, and intervention efforts: a review using the home inventory as a marker measure. Genetic, Social, and General Psychology Monographs, 119 (4), 439-490.

Bronfenbrenner, U. (1977) . Toward an experimental ecology of human development. American Psychologist, July, 513-531.

Bronfenbrenner, U. (1986) . Ecology of the family as a context for human development: research perspectives. Developmental Psychology, 22 (6), 723-742.

Bronfenbrenner, U. & Crouter, A.C. (1983) . The evolution of environmental models in developmental research. Carmicheal's Manual of Child Psychology, 358-402.

Brooks-Gunn, J., Klebanov, P.K., & Liaw, F. (1995) . The learning, physical, and emotional environment of the home in the context of poverty: the infant health and development program. Children and Youth Services Review, 17, 251-276.

Bryant, B.K. & Crockenberg, S.B. (1980) . Correlates and dimensions of prosocial behavior: a study of female siblings with their mothers. Child Development, 51, 529-544.

Caldwell, B.M. & Bradley, R.H. (1984) . Home observation for measurement of the environment (revised, ed.). Little Rock, AR: University of Arkansas at little Rock.

Call, K.T., Mortimer, J.T. & Shanahan, M.J. (1995) . Helpfulness and the development of competence in adolescence. Child Development, 66, 129-138.

Caplan, M.Z. & Hay, D.F. (1989) . Preschoolers' responses to peers' distress and beliefs about bystander intervention. Journal of Child Psychology and Psychiatry, 36 (2), 231-242.

Cummings, M.E., Zahn-Waxler, C. & Radke-Yarrow, M. (1981) . Young children's responses to expressions of anger and affection by others in the family. Child Development, 52, 1274-1282.

Cummings, M.E., Zahn-Waxler, C., Radke-Yarrow, M. (1984) . Developmental changes in children's reactions to anger in the home. Journal of Child Psychology and Psychiatry, 25 (1), 63-74.

Cummings, J.S., Pellegrini, D.S., Notarius, C.I., Cummings, M. (1989) . Children's response to angry adult behavior as a function of marital distress and history of interparent hostility. Child Development, 60, 1035-1043.

Cummings, M.E. & Smith, D. (1993) . The impact of anger between adults on siblings' emotions and social behavior. Journal of Child Psychology and Psychiatry, 34 (8), 1425-1433.

Denham, S.A. (1986) . Social cognition, prosocial behavior, and emotion in preschoolers: contextual validation. Child Development, 57, 194-201.

Derryberry, D. & Rothbart, M.K. (1988) . Journal of Personality and Social Psychology, 55 (6), 958-966.

Derryberry, D. & Rothbart, M.K. (1997) . Reactive and effortful processes in the organization of temperament. Development and Psychopathology, 9, 633-652.

Dodge, K.A., Pettit, G.S., & Bates, J.E. (1994) . Socialization mediators of the relation between socioeconomic status and child conduct problems. Child Development, 65, 649-665.

Doescher, S.M. (1986) . Impact of prosocial classroom and home learning programs on preschool children's prosocial behavior. Unpublished doctoral thesis: Oregon State University.

Doland, D.J. & Adelberg, K. (1967) . The learning of sharing behavior. Child Development, 38, 695-700.

Dreman, E.B. & Greenbaum, C.W. (1973) . Altruism or reciprocity: sharing behavior in Israeli kindergarten children. Child Development, 44, 61-68.

Dubow, E.F. & Ippolito, M.F. (1994) . Effects of poverty and quality of the home environment on changes in the academic and behavioral adjustment of elementary school-age children. Journal of Clinical Child Psychology, 23, 401-412.

Duncan, G.J., Brooks-Gunn, J., & Klebanov, P.K. (1994) . Economic deprivation and early childhood development. Child Development, 65, 296-318.

Eisenberg, N. & Mussen, P.H. (1989) . The roots of prosocial behavior in children. Cambridge University Press.

Eisenberg, N., Fabes, R.A., Karbon, M., Murphy, B.C., Wosinski, M., Polazzi, L., Carlo, G., & Juhnke, C. (1996) . The relations of children's dispositional prosocial behavior to emotionality, regulation, and social functioning. Child Development, 67, 974-992.

Eisenberg, N., Fabes, R.A., Carlo, G., Speer, A.L., Switzer, G., Karbon, M., & Troyer, D. (1993) . The relations of empathy-related emotions and maternal practices to children's comforting behavior. Journal of Experimental Child Psychology, 55, 131-150.

Eisenberg, N., Fabes, R.A., Bernzweig, J., Karbon, M., Poulin, R., & Hanish, L. (1993) . The relations of emotionality and regulation to preschooler's social skills and sociometric status. Child Development, 64, 1418-1438.

Eisenberg, N., Fabes, R.A., Shepard, S.A., Murphy, B.C., Guthrie, I.K., Jones, S., Friedman, J., Poulin, R., & Maszk, P. (1997) . Contemporaneous and longitudinal prediction of children's social functioning from regulation and emotionality. Child Development, 68 (4), 642-664.

Eisenberg, N. & Fabes, R.A. (1998) . Prosocial Development. In P.H. Mussen (Series Ed.) & W. Damon & N. Eisenberg (vol. Eds.) , Handbook of child psychology: Vol. 3. Social, Emotional, and Personality Development (5th ed., pp. 701-778) . New York: Wiley & Sons, Inc.

Eisenberg-Berg, N. & Lennon, R. (1980) . Altruism and the assessment of empathy in the preschool years. Child Development, 51, 552-557.

Fischer, P.A., Fagot, B.I., & Leve, C.S. (1998) . Assessment of family stress across low-, medium-, and high-risk samples using the family events checklist. Family Relations, 47, 215-219.

Gottfried, A.E., Fleming, J.S., & Gottfried, A.W. (1998) . Role of cognitively stimulating home environment in children's academic intrinsic motivation: a longitudinal study. Child Development, 69 (5), 1148-1460.

Gibson, J.J. (1986) . The ecological approach to visual perception visual perception. Hillsdale, NJ: Lawrence Erlbaum. (original work published 1979).

Hay, D.F. (1979) . Cooperative interactions and sharing between young children and their parents. Developmental Psychology, 15 (6), 647-653.

Hay, D.F. (1994) . Prosocial development. Journal of Child Psychology and Psychiatry, 35 (1), 29-71.

Homel, R. & Burns, A. (1989) . Environmental quality and wellbeing of children. Social Indicators Research Journal, 21,133-158.

Jimerson, S., Egeland, B., & Teo, A. (1999) . A longitudinal study of achievement trajectories: factors associated with change. Journal of Educational Psychology, 91, 116-126.

Knight, G.P. (1982) . Cooperative-competitive, social orientation: interactions of birth order with sex and economic class. Child Development, 53, 664-667.

Kochanska, G., Murray, K., Jacques, T.Y., Koenig, A.L., & Vandegeest, K.A. (1996) . Child Development, 67, 490-507.

Kochanska, G., Murray, K., & Coy, K.C. (1997) . Inhibitory control as a contributor to conscience in childhood: from toddler to early school age. Child Development, 68 (2), 263-277.

Lennon, R. & Eisenberg (1987) . Emotional displays associated with preschoolers' prosocial behavior. Child Development, 58, 992-1000.

McLoyd, V.C. (1998) . Socioeconomic disadvantage and child development. American Psychologist, 53 (2), 185-204.

McLoyd, V.C. (1998) . Children in poverty: development, public policy, and practice. In P.H. Mussen (Series Ed.) & W. Damon, I.E. Siegel, & K.A. Renninger (vol. Eds.), Handbook of child psychology: Vol. 4. Child Psychology in Practice (5th ed., pp. 135-210) . New York: Wiley & Sons, Inc.

Oregon Department of Education (1998) . 1998 Poverty Guidelines: Memorandum number 185-1997-98 from C. Gregory McMurdo: Salem, OR: Oregon Department of Education.

Patterson, C.J., Kupersmith, J.B., & Vaden, N.A. (1990) . Income level, gender, ethnicity, and household composition as predictors of children's school-based competence. Child Development, 61, 485-494.

Payne, F.D. (1980) . Children's prosocial conduct in structural situations and as viewed by others: consistency, convergence and the relationships with the person variables. Child Development, 51, 1252-1259.

Pettit, G.S., Bates, J.E., & Dodge, K.A. (1997) . Supportive parenting, ecological context, and children's adjustment: a seven-year longitudinal study. Child Development, 68 (5), 908-923.

Radke-Yarrow, M., Zahn-Waxler, C., Barrett, D., Darby, J., King, R., Pickett, M., & Smith, J. (1976) . Dimensions and correlates of prosocial behavior in young children. Child Development, 47, 118-125.

Radke-Yarrow, M., Scott, P.M., & Zahn Waxler, C. (1973) . Learning concern for others. Developmental Psychology, 8 (2), 240-260.

Ramsey, P.G. (1988) . Social skills and peer status: a comparison of two socioeconomic groups. Merrill-Palmer Quarterly, 34 (2), 185-202.

Raviv, A. & Bar-Tal, D. (1981) . Demographic correlates of adolescents' helping behavior. Journal of Youth and Adolescence, 10, 45-53.

Rheingold, H. (1982) . Little children's participation in the work of adults, a nascent prosocial behavior. Child Development, 53, 114-125.

Rothbart, M.K. & Ahadi, S.A. (1994) . Temperament and the development of personality. Journal of Abnormal Psychology, 103 (1), 55-66.

Rothbart, M.K., Ahadi, S.A., & Hershey, K.L. (1994) . Temperament and social behavior in childhood. Merrill-Palmer Quarterly, 40 (1), 21-39.

Rothbart, M.K., Ahadi, S., Hershey, K.L., & Fischer, P. (in press) . Investigations of temperament at 3-7 years: the children's behavior questionnaire. 1-57.

Rothbart, M.K. & Bates, J.E. (1998) . Temperament. In P.H. Mussen (Series Ed.) & W. Damon & N. Eisenberg (vol. Eds.) , Handbook of child psychology: Vol. 3. Social, Emotional, and Personality Development (5th ed., pp. 105-176) . New York: Wiley & Sons, Inc.

Sandler, I.N. & Block, M. (1979) . American Journal of Community Psychology, 7 (4), 425-440.

Shaw, D.S., Winslow, E.B., Owens, E.B., & Hood, N. (1998) . Young children's adjustment to chronic family adversity: a longitudinal study of low-income families. Journal of the American Academy of Child and Adolescent Psychiatry, 37 (5), 545-554.

Stanhope, L., Bell, R.Q., & Parker-Cohen, N.Y. (1987) . Developmental Psychology, 23 (3), 347-353.

Sterling, S., Cowen, E.L., Weissberg, R.P., Lotyczewski, B.S., & Boike, M. (1985) . Recent stressful life events and young children's school adjustment. American Journal of Community Psychology, 13 (1), 87-98.

Smith, C. & Carlson, B.E. (1997) . Stress, coping, and resilience in children and youth. Social Services Review, 71 (2), 231-257.

Turner, P.H. & Harris, M.B. (1984) . Parental attitudes and preschool children's social competence. The Journal of Genetic Psychology, 144, 105-113.

Ugurel-Semin, R. (1952) . Moral behavior and moral judgement of children. Journal of Abnormal and Social Psychology, 47, 463-474.

Weir, K. & Duveen, G. (1981) . Further development and validation of the prosocial behavior questionnaire for use by teachers. Journal of Child Psychology and Psychiatry, 22, 357-374.

Wertlieb, D., Weigel, C., Springer, T., Feldstein, M. (1987) . Temperament as a moderator of children's stressful experiences. American Journal of Orthopsychiatry, 57 (2), 234-245.

Zahn-Waxler, C. & Radke-Yarrow, M. (1979) . Child rearing and children's prosocial actions toward victims of distress. Child Development, 50, 319-330.

Zahn-Waxler, C., Radke-Yarrow, M., Wagner, E., & Chapman, M. (1992) . Development of concern for others. Developmental Psychology, 28 (1), 126-136.

Appendices

Appendix A: 1998 federal poverty guideline

**1998 Poverty Guidelines for the 48 Contiguous States
and the District of Columbia**

Size of family unit	Poverty guideline
1	8,050
2	10,850
3	13,650
4	16,450
5	19,250
6	22,050
7	24,850
8	27,650

* Oregon Department of Education (1998)

Appendix B: Children's behavior questionnaire: short form

Today's Date _____

Instructions: Please read carefully before starting:

Please read each statement and decide whether it is a "true" or "untrue" description of your child's reaction within the past six months. Use the following scale to indicate how well each statement describes your child. If you can not answer one of the items because you have never seen your child in that situation, then circle (NA) not applicable.

1	2	3	4	5	6	7	NA
extremely	quite	slightly	neither	slightly	quite	extremely	NA
untrue	untrue	untrue	true or untrue	true	true	true	not applicable

My Child:

1. Laughs a lot at jokes and silly happenings.
1 2 3 4 5 6 7 NA
2. Can lower his/her voice when asked to do so.
1 2 3 4 5 6 7 NA
3. Likes going down slides and other adventurous activities.
1 2 3 4 5 6 7 NA
4. Is afraid of elevators.
1 2 3 4 5 6 7 NA
5. Smiles and laughs during play with parents.
1 2 3 4 5 6 7 NA
6. Gets angry when told s/he has to go to bed.
1 2 3 4 5 6 7 NA
7. When picking up toys or other jobs, usually keeps at the task until it's done.
1 2 3 4 5 6 7 NA
8. Has an easy time leaving play to come to dinner.
1 2 3 4 5 6 7 NA
9. Enjoys activities such as being chased, spun around by the arms, etc.
1 2 3 4 5 6 7 NA
10. Is afraid of the dark.
1 2 3 4 5 6 7 NA
11. When drawing or coloring in a book, shows strong concentration.
1 2 3 4 5 6 7 NA
12. Gets mad when even mildly criticized.
1 2 3 4 5 6 7 NA

13. Smiles a lot at people s/he likes.	1	2	3	4	5	6	7	NA
14. Is afraid of loud noises.	1	2	3	4	5	6	7	NA
15. When practicing an activity, has an easy time keeping her/his mind on it.	1	2	3	4	5	6	7	NA
16. Can wait before entering into new activities if s/he is asked to.	1	2	3	4	5	6	7	NA
17. Smiles when looking at a picture book.	1	2	3	4	5	6	7	NA
18. Shows great excitement when opening a present.	1	2	3	4	5	6	7	NA
19. When angry about something s/he tends to stay upset for ten minutes or longer.	1	2	3	4	5	6	7	NA
20. Has a strong desire for certain kinds of foods.	1	2	3	4	5	6	7	NA
21. Is very frightened by nightmares.	1	2	3	4	5	6	7	NA
22. Can easily stop an activity when s/he is told "no".	1	2	3	4	5	6	7	NA
23. Is able to keep concentrating on an activity when there are distracting noises.	1	2	3	4	5	6	7	NA
24. Has temper tantrums when s/he doesn't get what s/he wants.	1	2	3	4	5	6	7	NA
25. Sometimes smiles or giggles when playing by her/himself.	1	2	3	4	5	6	7	NA
26. Is afraid of burglars and the "boogie man".	1	2	3	4	5	6	7	NA
27. Is usually able to resist temptation when told s/he is not supposed to do something.	1	2	3	4	5	6	7	NA
28. Gets mad when s/he can't find something s/he wants to play with.	1	2	3	4	5	6	7	NA
29. Enjoys exciting and suspenseful TV shows.	1	2	3	4	5	6	7	NA
30. When s/he is concentrating on something, it is hard to get her/his attention.	1	2	3	4	5	6	7	NA

Appendix C: Early childhood home inventory

EARLY CHILDHOOD HOME INVENTORY Bettye M. Caldwell and Robert H. Bradley

Family name _____ Date _____ Visitor _____

Child's name _____ Birthdate _____ Age _____ Sex _____

Caregiver for visit _____ Relationship to child _____

Other persons present during visit _____

Family composition _____
(persons living in household, including sex and age of children)

Family ethnicity _____ Language spoken _____ Maternal education _____ Paternal education _____

Is mother employed? _____ Type of work when employed _____

Is father employed? _____ Type of work when employed _____

Address _____ Phone _____

Current child care arrangements _____

Summarize past year's arrangements _____

SUMMARY

Subscale	Score	Lowest Fourth	Middle Half	Upper Fourth
I. LEARNING MATERIAL		0 - 2	3 - 9	10 - 11
II. LANGUAGE STIMULATION		0 - 4	5 - 6	7
III. PHYSICAL ENVIRONMENT		0 - 3	4 - 6	7
IV. RESPONSIVITY		0 - 3	4 - 5	6 - 7
V. ACADEMIC STIMULATION		0 - 2	3 - 4	5
VI. MODELING		0 - 1	2 - 3	4 - 5
VII. VARIETY		0 - 4	5 - 7	8 - 9
VIII. ACCEPTANCE		0 - 2	3	4
TOTAL SCORE		0 - 29	30 - 45	46 - 55

For rapid profiling of a family, place an X in the box that corresponds to the raw score.

Early Childhood HOME

Place a plus (+) or minus (-) in the box alongside each item if the behavior is observed during the visit or if the parent reports that the conditions or events are characteristic of the home environment. Enter the subtotal and the total on the front side of the Record Sheet.

I. LEARNING MATERIALS	24. Rooms are not overcrowded with furniture.	
1. Child has toys which teach colors, sizes, and shapes.	25. House is reasonably clean and minimally cluttered.	
2. Child has three or more puzzles.	IV. RESPONSIVITY	
3. Child has record player or tape recorder and at least 5 children's records or tapes.	26. Parent holds child close 10-15 minutes per day.	
4. Child has toys or games permitting free expression.	27. Parent converses with child at least twice during visit.	
5. Child has toys or games requiring refined movements.	28. Parent answers child's questions or requests verbally.	
6. Child has toys or games which help teach numbers.	29. Parent usually responds verbally to child's speech.	
7. Child has at least 10 children's books.	30. Parent praises child's qualities twice during visit.	
8. At least 10 books are visible in the apartment or home.	31. Parent caresses, kisses, or cuddles child during visit.	
9. Family buys and reads a daily newspaper.	32. Parent helps child demonstrate some achievement during visit.	
10. Family subscribes to at least one magazine.	V. ACADEMIC STIMULATION	
11. Child is encouraged to learn shapes.	33. Child is encouraged to learn colors.	
II. LANGUAGE STIMULATION	34. Child is encouraged to learn patterned speech.	
12. Child has toys that help teach the names of animals.	35. Child is encouraged to learn spatial relationships.	
13. Child is encouraged to learn the alphabet.	36. Child is encouraged to learn numbers.	
14. Parent teaches child simple verbal manners (please, thank you, I'm sorry).	37. Child is encouraged to learn to read a few words.	
15. Parent uses correct grammar and pronunciation.	VI. MODELING	
16. Parent encourages child to talk and takes time to listen.	38. Some delay of food gratification is expected.	
17. Parent's voice conveys positive feelings about child.	39. TV is used judiciously.	
18. Child is permitted choice in breakfast or lunch menu.	40. Parent introduces Visitor to child.	
III. PHYSICAL ENVIRONMENT	41. Child can express negative feelings without harsh reprisal.	
19. Building appears safe and free of hazards.	42. Child can hit parent without harsh reprisal.	
20. Outside play environment appears safe.	VII. VARIETY	
21. Interior of apartment is not dark or perceptually monotonous.	43. Child has real or toy musical instrument.	
22. Neighborhood is aesthetically pleasing.	44. Child is taken on outing by a family member at least every other week.	
23. House has 100 square feet of living space per person.	45. Child has been on trip more than 50 miles during last year.	

46. Child has been taken to a museum during past year.	VIII. ACCEPTANCE	
47. Parent encourages child to put away toys without help.	52. Parent does not scold or yell at or derogate child more than once.	
48. Parent uses complex sentence structure and vocabulary	53. Parent does not use physical restraint during visit.	
49. Child's art work is displayed some place in house.	54. Parent neither slaps nor spansks child during visit.	
50. Child eats at least one meal per day with mother (or mother figure) and father (or father figure).	55. No more than one instance of physical punishment occurred during the past week.	
51. Parent lets child choose certain favorite food products or brands at grocery store.		

TOTALS:

I _____ II _____ III _____ IV _____ V _____ VI _____ VII _____ VIII _____

TOTAL _____

Comments _____

HOME BACKGROUND INFORMATION

1. Give some examples of places that you and your child go together

Y N

- ☐ ☐ Grocery Store
- ☐ ☐ Doctor's office or clinic
- ☐ ☐ Your relative's house- last time went _____ how frequently _____
- ☐ ☐ Outing with a family member-last time went _____ how frequently _____
- ☐ ☐ Library-last time went _____ how frequently _____
- ☐ ☐ Museum
- ☐ ☐ Have you traveled outside of Corvallis-how far _____

2. What types of toys and play materials does your child play with?

Y N

- ☐ ☐ Puzzles-how many _____
- ☐ ☐ Books-how many does child have _____
- ☐ ☐ Access to newspaper
- ☐ ☐ Access to magazine
- ☐ ☐ Toys that teach about size
- ☐ ☐ Toys that teach about shape
- ☐ ☐ Toys that teach about color
- ☐ ☐ Toys that teach about numbers
- ☐ ☐ Record, tape player, or video with music-how many records or tapes does child have _____
- ☐ ☐ Toys that permit free expression (playdough, crayons, paint and paper etc.)
- ☐ ☐ Toys that permit refined movement (scissors and paper, crayons, stringing beads etc.)
- ☐ ☐ Toys that teach the name of animals
- ☐ ☐ Toy or real musical instrument

3. Describe a typical day

Y N

- ☐ ☐ Does your whole family eat one meal together each day?
- ☐ ☐ Does child have to wait to eat until mealtimes, or can he/she eat whenever he/she wants to?
- ☐ ☐ Does child choose own lunch, breakfast, or snack?
- ☐ ☐ Does child put away toys him/herself?

4. In general would you say that your child behaves pretty well, or do you have to punish him or her to get him or her to behave?

How many times in a given week do you have to spank him or her? _____
 What other strategies can you try? _____

Appendix D: Family events checklist

FAMILY EVENTS CHECKLIST

For each event that occurred within the last week, please circle

- 1 If the event did not occur.
- 2 If it did occur but had no negative effect on you.
- 3 If it had a slightly negative effect on you, or
- 4 If it had a very negative effect on you.

	1 NO Event did not occur	2 YES an event did occur: But had no negative effect on you	3 YES an event did occur: Had a slightly negative effect on you	4 YES an event did occur: Had a very negative effect on you
1. Tension between two or more family members, not involving you, concerning past or present conflict.	1	2	3	4
2. There was not enough money to buy something important needed for the family, such as food or clothing.	1	2	3	4
3. Looking for a job-made contacts, such as calling, applying, interviewing, etc.	1	2	3	4
4. Conflict or tension between you or any other family member(s).	1	2	3	4
5. Did not have enough money to buy desired, but not absolutely needed item.	1	2	3	4
6. Work situation stressful.	1	2	3	4
7. Someone in the family other than you in a bad mood, unhappy, angry, or depressed.	1	2	3	4
8. Conflict or disagreement with any of your children over schoolwork or homework.	1	2	3	4
9. Paid the bills.	1	2	3	4
10. One or more of your children came home very upset.	1	2	3	4

	1 NO Event did not occur	2 YES an event did occur: But had no negative effect on you	3 YES an event did occur: Had a slightly negative effect on you	4 YES an event did occur: Had a very negative effect on you
11. School contacted you because of child's poor work, bad behavior, tardiness, truancy, or other problem behavior.	1	2	3	4
12. Family member did not do fair share of work around the house.	1	2	3	4
13. You failed to receive expected money or had an unexpected bill.	1	2	3	4
14. Physical fighting between family members.	1	2	3	4
15. Someone criticized you about how you are raising/handling your children.	1	2	3	4
16. Did not have enough money to pay the bills.	1	2	3	4
17. You were overworked at home.	1	2	3	4
18. You felt extremely upset or emotional in general for a day or more.	1	2	3	4
19. Family schedule seriously disrupted for more than a day because of something unexpected.	1	2	3	4

Philip Fisher, Beverly Fagot, and Craig Leve, 1998, *Family Relations*, 47, 215-219

Appendix E: Modified prosocial questionnaire

Name of child:

Sex: (Please circle) M / F

Instructions: Below is a list of 15 statements about children's behavior, which may be shown during the school day. Based on your knowledge about the child, please mark in the appropriate column.

If the child definitely shows the behavior described by the statement, place the mark in the column headed "certainly applies." If the child shows the behavior but to a lesser degree or less often, place the mark under "applies somewhat." If the child rarely or never shows such behavior, place the mark under the column headed "rarely applies."

Although it is difficult, it is important to try and answer each question as objectively and independently as possible. BE SURE TO MARK EACH STATEMENT!

	Rarely Applies	Applies Somewhat	Certainly Applies
1. Will try to help someone who has been hurt.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Gives away an object voluntarily to an adult or another child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Can work easily in a small peer group.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Spontaneously helps pick up objects which another child has dropped. (eg., toys, crayons, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Gives up object when asked by peer or adult.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Rarely Applies	Applies Somewhat	Certainly Applies
6. Will invite bystanders to join in their play.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Offers to help other children who are having difficulty with a task in the classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Allows another child to take his/her materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Will take turns in games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Is efficient in carrying out regular tasks such as helping with clean-up.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Will help others with a task when asked or told by adult or peer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Simultaneously uses materials with others. (eg., glue bottles, scissors, crayons).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Will work together with peers on a common project.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Requests other children to share their materials with him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Will take turns with objects.(eg., both pulls and is pulled in wagon).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix F: Consent form

OSU CHILD DEVELOPMENT CENTER AND OREGON HEAD START PREKINDERGARTEN PROGRAM



Oregon State University
114 Bates Hall-Corvallis, Oregon 97331-5151
Telephone 541-737-2516 Fax 541-737-5579

INFORMED CONSENT

I am conducting a research study for my Master's thesis to assess what factors lead to the production of prosocial (helping, cooperating, and sharing) behavior in pre-school age children. These factors include home environment, weekly family events, and child's temperament (behavioral style), as well as such background information as family composition, parental education level, and ethnicity. Your child's teacher will assess your child's prosocial behavior with the Modified Prosocial Questionnaire and the rest will be assessed with information that you have already provided during home visitation by completing the Family Events Checklist, Children's Behavior Questionnaire: Short Form, and The Early Childhood Home Inventory.

To ensure strict confidentiality and anonymity, the information you have provided will be assigned an ID number. No names will be attached to the information that researchers use and it will be stored in confidential files.

Although you have already signed a Research information Form at the time of your child's enrollment, you are free to choose not to participate in this study. Even after you have made a decision to participate, you are still free to withdraw or terminate your participation from the research project at any time. Your refusal to participate will have no penalty or loss of benefits to which you or your child is otherwise entitled. If you have any questions about this research project, please contact Elizabeth Vale or Linda Burt at 737-2209 or Alan Sugawara at 737-1078. Allowing us to use the information you have provided will make a significant contribution to the field. We greatly appreciate your willingness to participate in this project. Thank you.

My signature below indicates that I have read and that I understand the procedures described above and give my informed and voluntary consent to participate in this study. I understand that I will receive a signed copy of this consent form.

Parent Signature

Date

Home Visitor Signature

Date