2010

The Effects of Cumulative Risk Experience and Violence Exposure on Children's Prosocial Behaviors

Lauren Aaron
College of William & Mary - Arts & Sciences

Follow this and additional works at: https://scholarworks.wm.edu/etd

Part of the Behavior and Behavior Mechanisms Commons, and the Developmental Psychology Commons

Recommended Citation
https://dx.doi.org/doi:10.21220/s2-mcn2-ta32

This Thesis is brought to you for free and open access by the Theses, Dissertations, & Master Projects at W&M ScholarWorks. It has been accepted for inclusion in Dissertations, Theses, and Masters Projects by an authorized administrator of W&M ScholarWorks. For more information, please contact scholarworks@wm.edu.
APPROVAL PAGE

This Thesis is submitted in partial fulfillment of the requirements for the degree of

Master of Arts

Lauren Aaron

Approved by the Committee, April, 2010

Committee Chair
Assistant Professor Danielle H. Dallaire
The College of William & Mary

Assistant Professor Cheryl L. Dickter
The College of William & Mary

Assistant Professor Todd M. Thrash
The College of William & Mary
Research approved by

Project of Human Subjects Committee

Protocol number(s): PHSC-2008-07-29-5348-dhdall

Date(s) of approval: 7/29/2008 to 7/29/2010
Great advances in understanding how children's maladjustment is influenced by contextual risk factors (e.g., poverty) and violence exposure have been made, yet less is known as to how these factors influence children's positive adjustment (e.g., prosocial behaviors). The current study observed second- through fifth-grade students' prosocial behavior in three tasks which gave students the opportunity to comfort an adult, help an adult, and share with a peer. Children's cumulative contextual risk experience was reported by participating parents, and children reported their exposure to community violence. Results show that age and gender interactively predict children's helping, as do age and violence exposure. Children's sharing was predicted by the interactive effects of age, gender, and violence exposure. These findings show that children's prosocial behavior cannot be predicted solely by their age and gender. The importance of considering children's experience of negative events such as witnessing violence in developing theoretical approaches, as well as research and intervention implications, are discussed.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Acknowledgements</th>
<th>iii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Theories of moral and prosocial reasoning</td>
<td>4</td>
</tr>
<tr>
<td>Hay’s model of prosocial development</td>
<td>8</td>
</tr>
<tr>
<td>Theories of risk in middle childhood</td>
<td>10</td>
</tr>
<tr>
<td>Violence exposure in middle childhood</td>
<td>11</td>
</tr>
<tr>
<td>Vollhardt’s model of altruism born of suffering</td>
<td>13</td>
</tr>
<tr>
<td>Development of prosocial behavior</td>
<td>16</td>
</tr>
<tr>
<td>Age-related changes</td>
<td>16</td>
</tr>
<tr>
<td>Gender-related differences</td>
<td>15</td>
</tr>
<tr>
<td>Methodological differences in measuring children’s prosocial behavior</td>
<td>17</td>
</tr>
<tr>
<td>Effects on contextual risk and violence on children’s adjustment</td>
<td>19</td>
</tr>
<tr>
<td>Increase in maladjustment associated with increase in contextual risk factors</td>
<td>20</td>
</tr>
<tr>
<td>Increase in maladjustment associated with increase in violence exposure</td>
<td>21</td>
</tr>
<tr>
<td>Effects of contextual risk and violence on children’s prosocial behavior</td>
<td>21</td>
</tr>
<tr>
<td>Rationale for the current study</td>
<td>22</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>23</td>
</tr>
<tr>
<td>Method</td>
<td>25</td>
</tr>
<tr>
<td>Participants</td>
<td>25</td>
</tr>
<tr>
<td>Measures</td>
<td>26</td>
</tr>
<tr>
<td>Cumulative contextual risk score</td>
<td>26</td>
</tr>
<tr>
<td>Violence exposure</td>
<td>28</td>
</tr>
<tr>
<td>Prosocial behaviors</td>
<td>28</td>
</tr>
<tr>
<td>Comforting</td>
<td>28</td>
</tr>
<tr>
<td>Helping</td>
<td>29</td>
</tr>
<tr>
<td>Sharing</td>
<td>29</td>
</tr>
<tr>
<td>Procedure</td>
<td>30</td>
</tr>
<tr>
<td>Results</td>
<td>31</td>
</tr>
<tr>
<td>Descriptive statistics</td>
<td>31</td>
</tr>
<tr>
<td>Hypothesis 1</td>
<td>32</td>
</tr>
<tr>
<td>Hypothesis 2</td>
<td>32</td>
</tr>
<tr>
<td>Hypothesis 3</td>
<td>32</td>
</tr>
<tr>
<td>Hypothesis 4</td>
<td>33</td>
</tr>
<tr>
<td>Hypothesis 5</td>
<td>33</td>
</tr>
<tr>
<td>Post hoc power analyses</td>
<td>35</td>
</tr>
<tr>
<td>Discussion</td>
<td>36</td>
</tr>
<tr>
<td>Comforting, helping, and sharing assessments</td>
<td>37</td>
</tr>
<tr>
<td>Cumulative contextual risk experience and prosocial behavior</td>
<td>39</td>
</tr>
<tr>
<td>Children’s comforting behavior</td>
<td>40</td>
</tr>
<tr>
<td>Children’s helping behavior</td>
<td>41</td>
</tr>
<tr>
<td>Children’s sharing behavior</td>
<td>42</td>
</tr>
<tr>
<td>Limitations</td>
<td>43</td>
</tr>
<tr>
<td>Theoretical implications</td>
<td>45</td>
</tr>
</tbody>
</table>
Acknowledgements

Without the guidance and shared knowledge of my advisor, Dr. Danielle Dallaire, I could not have found the work I plan to continue throughout my career. My gratitude goes to her for sharing her viewpoints and time in molding and expanding my interests and this paper.

I would like to express my gratitude to my committee members, Drs. Cheryl Dickter and Todd Thrash, for their time and shared wisdom that helped shape this paper into a more comprehensive thesis. I would also like to thank Dr. Janice Zeman for her willingness to help in this process and to lend an ear and thoughtful advice.

I am deeply grateful to the unequovocal support of my grandparents and my in-laws, who, though not entirely sure what I spent so many hours and holidays working on, supported me none-the-less.

Finally, my love and thanks go to my husband, whose willingness to spell-check, collate, and cross-check references, as well as listening to my fervent arguments about concepts he couldn’t care less about may have saved my sanity.
The Effects of Cumulative Risk Experience and Violence Exposure on Children’s Prosocial Behaviors

Everyday social interactions offer opportunities to behave in ways that are advantageous to others. Such opportunities are present beginning early in life; for example, children as young as six months old begin to behave prosocially by spontaneously sharing with peers (Hay, Nash, & Pederson, 1981). As children get older, observed prosocial behaviors include helping another person in need, attempting to comfort a person in distress, and cooperating in groups. Children’s prosocial behavioral responses are thought to be related to children’s cognitive functioning (Bellanti, Bierman, & the Conduct Problems Prevention Research Group, 2000), and are specifically related to how children make moral judgments and their reasoning about such judgments. Consistent with Piaget’s stage of concrete operations in cognitive development (1954), young children view the world as rigid and rules as inmalleable. As they grow older, they learn that rules of social interactions are abstract and that their appropriateness may depend on the context of the situation (Kohlberg, 1963; Piaget, 1932). Armed with this understanding, older children are better able to analyze the consequences of prosocial opportunities and to decide when and how to act in appropriate prosocial ways (Colby, Kohlberg, Gibbs, & Lieberman, 1983). However, advanced moral and prosocial reasoning abilities do not necessarily equate to more prosocial behavior; older children may use advanced reasoning to decide not to help another person.

The refinement of prosocial decision-making is influenced by several factors in children’s lives and environments. Some modern theorists state that moral reasoning (that is, statements as to what one should do in social situations) differs by gender (Gilligan &
Attanucci, 1988). Gender differences in moral reasoning may explain the mixed empirical findings of gender differences in prosocial behavior, as some studies have found no differences (e.g., Chapman, Zahn-Waxler, Cooperman, & Iannotti, 1987) and others have reported that girls behave prosocially more often (e.g., Carlo, Crockett, Randall, & Roesch, 2007). Exposure to contextual risk factors such as poverty may also influence children’s prosocial behavior. Previous research indicates that children’s experience of adversity in their environment is associated with greater maladjustment (e.g., Burchinal, Roberts, Zeisel, & Rowley, 2008), and several studies have found that such experiences have a negative influence on children’s prosocial behavior as well. Teachers rate children with less educated mothers as less prosocial than peers (Pagani, Boulerice, Tremblay, & Vitaro, 1997), and mothers from poor families report their children as less prosocial than do other mothers (Romano, Tremblay, Boulerice, & Swisher, 2005). Though no studies to date have examined the relation between violence exposure and prosocial behavior, witnessing violence has been associated with less advanced moral reasoning (Ardila-Rey, Killen, & Brenick, 2009). It is possible then that increased violence exposure is associated with less comforting, helping, and sharing behavior.

Though the effects of contextual risk and violence exposure on children’s maladjustment are clear, this is less true for children’s prosocial behavior. The ability to generalize findings about children’s prosocial behavior in the context of violence exposure and contextual risk experience is limited by the samples and methodology employed in past research. Literature concerning prosocial development has largely sampled from populations consisting of White, middle- to upper-class children. Though
studies examining children’s violence exposure and contextual risk experience have sampled from more diverse populations, there is still no clear understanding of how children’s use of prosocial behaviors may be influenced by their experience of contextual risk or violence, nor is it clear how comforting, helping, and sharing behaviors develop in children from high-risk neighborhoods. In addition, previous research in this area has consistently relied on parent, teacher, and child self-reports of behavior. In contrast, observations of children’s prosocial behaviors that occur naturally (e.g., Eisenberg, Guthrie, Cumberland, Murphy, Shepard, Zhou, et al., 2002) or in staged situations (e.g., Richman, Berry, Bittle, & Himan, 1988) are likely more valid measures of these behaviors (Eisenberg, Miller, Shell, McNalley, & Shea, 1991) and are less likely to be influenced by potential biases of parents, teachers, or researchers (Hay & Pawlby, 2003). The purpose of the current study is to examine the effects of age, gender, contextual risk experience, and violence exposure on children’s comforting, helping, and sharing behavior. To better understand the effects of multiple contextual risk experiences for children, as well as to sample from a population likely to witness violent events, the sample of the current study was drawn from an elementary school in a high-crime, low-income neighborhood. Observations of children’s opportunities to behave prosocially toward unknown peers and adult researchers were utilized in lieu of reports of such behaviors, to examine how children comfort, help, and share in everyday situations rather than how people familiar with them believe they would act. The effects of children’s gender will also be examined, in light of theory suggesting that males and females think about moral behavior differently (e.g., Gilligan, 1994).
To understand how environmental factors influence children’s comforting, helping, and sharing, one must first understand how children think about these behaviors and how these thoughts and the behaviors themselves can change with age. The effects of contextual risk experience on children’s adjustment should be also examined, to better understand how such factors can influence children’s social functioning. As such, relevant theories of moral development and prosocial reasoning are reviewed in this thesis, as are theories concerning the influence of violence exposure and contextual risk factors. A review of empirical studies in this vein will also be undertaken, with special consideration given to studies showing how gender and age influence children’s prosocial behavior and how contextual risk factors and violence exposure influence children’s adjustment.

**Theories of Moral and Prosocial Reasoning**

The pioneer of theories concerning children’s morality, Jean Piaget, is best known for his cognitive approach to development. In his seminal book, *The Moral Judgment of the Child* (1932), Piaget described children’s thoughts about moral issues as first rigid and absolute, and proposed that, as children grow older, they view moral issues as relative and context-dependent. Young children believe that what is “right” is what is put forth by authority figures (e.g., parents, teachers). Their moral judgments are based on whether or not punishment would be expected, and right and wrong is based solely on the consequences of one’s actions. Between the ages of seven and ten years old, as children spend more time interacting with peers, Piaget believed that they begin to alter their moral judgments. Children’s interactions in games such as marbles can illustrate these changes. Piaget suggested that children learn to play marbles with different rules, and
when peers get together to play, there may be more than one set of rules considered right. Through such experiences, children learn that rules are not concrete. Although certain rules are universally fair or not fair, playing fairly can mean more than one thing. Such realizations help transition children from thinking in terms of moral realism (e.g., there is a right way to behave) to thinking in terms of moral relativism (e.g., there could be several right ways to behave). For example, when asked if a child who purposely breaks one toy is naughtier than a child who accidentally breaks several toys, younger children state that the child breaking multiple toys is naughtier, which suggests that these children focus on the end result of an action rather than intent. Older children, however, state that the child who purposely breaks one toy is the naughty one. According to Piaget, all children achieve this level of autonomous morality around age 12.

Piaget’s theory of moral judgment set the stage for inquiry into individuals’ reasoning in moral situations. There is little evidence, however, that increased peer interaction is related to moral development, and Piaget’s methodology has been challenged. Piaget’s theory also assumes adult (that is, fully developed) moral judgment abilities before or by adolescence, and does not consider possible development in adolescence or adulthood.

In contrast, Kohlberg proposed a series of levels of “moral thought,” which represent how individuals reason about morally-ambiguous situations (Kohlberg, 1963). Kohlberg analyzed the responses of boys aged 7 to 16 to such hypothetical situations and found six response patterns, which corresponded to boys’ age (Kohlberg, 1963). Young children’s reasoning centered on avoidance of punishment with no mention of right or wrong, whereas older children and preadolescents use more advanced reasoning focusing
on an action being right or good. Adolescents, however, can accept the possibility of more than one right answer existing in morally-ambiguous situations. They recognize that social norms can conflict, and they attempt to come to a rational decision between these norms. These youth define right and wrong in terms of institutional rules they believe are rational, such as laws aimed toward the greater good. Some older youth and adults judge the morality of the law and weigh its consequences against moral principles, but fewer than ten percent of adolescents in Kohlberg’s research used this high level of moral reasoning (Kohlberg, 1963).

Although Kohlberg’s theory of moral reasoning has been accepted by many researchers and empirically validated in several studies (Boom, Wouters, & Keller, 2007; Dawson, 2002), it has also been criticized as non-generalizable to certain groups. In particular, Gilligan (1994) argued that males and females develop and use moral reasoning differently and that Kohlberg’s theory ignored these differences. Gilligan noted that when Kohlberg’s dilemmas were given to women, their responses are reported as less morally-advanced than those given by men (Gilligan, Kohlberg, Lerner, & Belenky, 1971). Gilligan believed that women’s reasoning expresses conflict between male values of justice and law (i.e., what is right is what is best for all) and female values of interpersonal relationships (i.e., what is right is what is best for those close to oneself). As higher levels of Kohlberg’s theory revolve around universal rights, advancement is defined as recognizing that the feminine view of morality is inadequate and replacing it with the masculine view of justice.

Gilligan’s “ethic of caring” for women is based on her interviews with teenage and adult women facing decisions about unwanted pregnancies. She does not ascribe age
periods to her stages, nor does any of her related work sample from child populations. No known research has been published examining how children use Gilligan’s ethic of caring.

levels at different ages, and the few studies that have adapted her ethic of caring in child samples have not found gender differences (Garrod, Beal, Jaeger, Thomas, Davis, Leiser, et al., 2003; Walker, 1989). However, Gilligan was the first to propose that moral development may occur along more than one path, leaving open the possibility of other paths along which children (and adults) develop moral reasoning. Gilligan also proposed that women’s advancement through levels of moral reasoning was fueled by changes within the self, rather than by cognitive advances, therefore opening the possibility of more than a single factor having an influence on moral reasoning.

Another criticism of Kohlberg’s theory focused on the dilemmas presented to children. Eisenberg (1986) stated that Kohlberg’s dilemmas were unrealistic and that individuals are regularly faced with more benign, realistic situations in real life. These prosocial situations force one to choose between personal advantage and another’s welfare. An example would be a child who is headed to a birthday party when they pass another child with a twisted ankle. Eisenberg asked children to identify what they thought the first child should do (i.e., help or not help) and why. Children’s reasoning about such situations are self-focused at first, centering on what the target child will get out of helping or not helping. More advanced responses focus on the way society expects one to act, and some adolescents take the perspective of the hurt child in their reasoning, showing empathetic concern.

As with Kohlberg’s stages of moral reasoning, adults who use higher-order stages in Eisenberg’s theory of prosocial moral judgment report engaging in more prosocial
behavior than those using lower-level judgment (Eisenberg et al., 1991). However, concordant reports of moral reasoning and prosocial behavior may be, responses to Eisenberg’s prosocial dilemmas only give us insight into what individuals at different stages think people *should* do, not how these individuals actually behave. Though Eisenberg’s dilemmas have been adapted to prompt children to imagine they are the story protagonist and ask what the participating child would do (e.g., Jackson & Tisak, 2001), it is still possible that children will act differently than their reasoning responses indicate. It is quite possible that children who use lower levels of reasoning (e.g., self-focused reasoning) in such a situation may actually help (if helping brings benefit to the child), and therefore advancement through levels of moral or prosocial reasoning cannot be relied upon to predict behavior.

**Hay’s Model of Prosocial Development**

The theories reviewed thus far differ by their use of particular vignettes and explanations as to how children’s cognitions about moral and prosocial actions change, but they do not examine how or why children’s prosocial behavior towards others develops. Hay (1994) has developed a theory of prosocial development for toddlers. This model posits that children do not begin behaving prosocially until the second year of life, that prosocial behavior declines with age, and that prosocial behavior becomes increasingly differentiated by gender of the child, in that children are more likely to behave prosocially toward a same-sex peer.

Hay’s claim that children do not use prosocial behavior until age two is contradictory to several published studies and requires an examination of what we call prosocial behavior. Behavior benefiting others has been seen in children as young as
eight months old, the most common behavior being sharing (Hay, 1979). However, if sharing is defined solely as the giving of something to another person, it is likely that behaviors that are in some way self-serving would be classified as sharing (e.g., sharing materials for a group project). In order to reduce the possibility of measuring behaviors that are not prosocially motivated, it is essential to measure a behavior in which the disadvantage to the participant is clear.

Perhaps the most controversial aspect of Hay’s theory is that observed prosocial behavior declines with age, which goes directly against widely-held assumptions that older children are more prosocial than younger peers. If older children have advanced cognitive abilities, which should help them make social decisions, one would expect to see more prosocial behavior in older children. Instead, Hay states that children learn to better differentiate between opportunities in which they could aid another person, and to rely on social norms as to when it is best to be prosocial. Indeed, being continuously prosocial could also be seen as maladaptively codependent (Hay, Castle, Davies, Demetriou, & Stimson, 1999). Increased understanding of social norms (such as reciprocity, which states that you should aid someone who has aided you) could also account for a decrease in prosocial behaviors through childhood. For example, a child who has learned that one should help those who have or would help them may think twice before helping a child who is known to be aggressive and unhelpful.

Finally, Hay’s theory of prosocial development states that gender differences exist in children’s prosocial behaviors, and that these differences increase with age. Gender role socialization is thought to play a role in these differences, as girls are expected by parents and teachers to be nurturing and caring of others, and boys are discouraged from
responding too empathetically. Hay’s theory has been applied mostly to studies of children’s sharing behavior. However, it may be necessary to examine the role of gender role socialization on the development of different types of prosocial behavior. For example, if boys show more helping behavior and less comforting behavior with age and girls show the opposite relation, it may be best to examine these two behaviors separately rather than as an aggregate measure of prosocial behavior.

Hay’s theory of prosocial development was created with toddler’s behaviors in mind, and Hay herself suggested that the tenets of her theory may not be applicable beyond the early childhood years. However, Hay’s theory remains the sole theory of prosocial behavior development to date, and it possible that its tenets may be extended to behavior observed in middle childhood. However, how well this theory predicts prosocial behavior beyond the toddler years has yet to be assessed.

Theories of Risk in Middle Childhood

Risk experience is a general term used to refer to an individual’s exposure to a myriad of aversive factors. Children can be considered at-risk due to poor health factors (e.g., premature birth or malnutrition), familial situations (e.g., living with an abusive parent or in a high-conflict family), or even personality factors (e.g., having a difficult temperament). These children are at risk for a variety of problematic outcomes, including school dropout, poor peer relations, and antisocial behavior. In the current study, the focus is on children’s experience of contextual risk factors in their home environment. Contextual risk refers to factors in one’s life that collectively place an individual at risk for maladjustment (Moore, Vandivere, & Redd, 2006). Examples of such factors include
having a mother who did not complete high school and living in poverty; such environments are considered poor contexts for development.

Experience of contextual risk is thought to interfere with optimal social and emotional development. Many studies have shown that these experiences are not necessarily additive, that is, the total effect of several contextual risk factors is greater than expected if maladjustment increased linearly with each additional factor (Appleyard, Egeland, van Dulman, & Sroufe, 2005). In early research using this approach, Rutter (1979) explored the extent to which the total number of contextual risk factors children experienced explained their adjustment better than any individual factor. Children do not experience contextual risk factors individually, Rutter argued. Instead, several factors often co-exist in a child’s environment and the individual influences may not be discernible. For example, a child whose family lives in poverty is more likely to live in a poor neighborhood and to be exposed to more violence and crime than affluent peers, and this child may also go to an overcrowded, understaffed school. Stating that living in poverty leads to maladjustment ignores how these inter-related experiences influence children’s functioning.

**Violence Exposure in Middle Childhood**

Exposure to violent events in childhood is associated with later violence and other maladjustment (e.g., Zinzow, Ruggiero, Hanson, Smith, Saunders, & Kilpatrick, 2009). According to social learning theory (Bandura, 1978), if individuals repeatedly view certain behaviors as a means to a positive end, they will imitate and adapt those behaviors in their own lives. In the case of violence exposure, social learning theory suggests that children who see others use violence in a way that leads to positive outcomes (for
example, gang members who gain respect through violent acts) will learn that the use of violence is advantageous and will imitate such behavior.

It is not difficult to adapt this explanation to the current study. Children exposed to violence in the community may view violent behavior as an appropriate social response (Shahinfar, Kuperschmidt, & Matza, 2001). If violence is the acceptable response to social interactions, it is possible that these children will view prosocial responses (e.g., comforting, helping, sharing) as less favorable than children not exposed to community violence. Prosocial responses may even be discouraged by peers and viewed as the “weak” response to some social situations. For example, a child who helps a teacher may be called the teacher’s pet. Young children who view the favorable outcomes of using violence and the potentially stigmatization of being prosocial (especially towards “others”, such as teachers or out-group members) likely learn to use violence as a social tool at the expense of more prosocial responses.

Exposure to violence may also influence intrapersonal factors associated with social development. A qualitative examination of incarcerated mothers showed that nearly all women in that sample reported that their children had been exposed to familial or community violence (DeHart & Altshuler, 2009). Several of these women also indicated that their children’s social interactions were altered after witnessing violence—some mothers stated that their children learned violence as an appropriate social tool from watching the mothers’ partners behave violently, while others stated that viewing violence in the home led their children to be unempathetic to others’ pain.

Past research also suggests that violence exposure can alter how children think about social situations (Ardila-Rey et al., 2009). Children in Columbia, a country known
for its violent riots, were presented with situations in which someone committed a moral
transgression (e.g., not sharing a toy). Children who had been exposed to violence stated
that moral transgressions should be dealt with by retaliation and aggression (e.g.,
snatching the toy, hitting the other child); children not exposed to violence were more
likely to suggest prosocial reactions (e.g., asking nicely to use the toy). These differences
remained over the effects of age, suggesting that exposure to violence can significantly
alter the normal progression of moral reasoning. This also suggests that violence
exposure may influence children’s prosocial behavior, a proposal to be tested in the
current study.

**Vollhardt’s Model of Altruism Born of Suffering**

As contextual risk and violence exposure are associated with increased
maladjustment, the opposite is thought to be true for positive adjustment (i.e., increased
risk is associated with *decreased* positive adjustment). The possibility of contextual risk
experience leading to increased adjustment in some individuals has not been the focus of
much past research. In fact, studies that have found increases in adjustment relative to
increased contextual risk factors have explained the relation as due to changes in living
situations during war (Raboteg-Saric, Zuzul, & Kerestes, 1994) or higher expectations of
emotional maturity in single-parent homes (Richman et al., 1988). That individuals
exposed to risk factors such as poverty and violence are also likely to exhibit
delinquency, poor academic achievement, and other maladjustment is largely intuitive;
that is, the more bad things that happen to you, the less likely you are to be a well-
adjusted, functioning member of society. Similarly, a well-functioning member of society
must be helpful and prosocial, and risk experience and violence exposure are thought to decrease such behaviors.

It has been noted, however, that some individuals who experience traumatic situations such as rape or violence exposure spend time helping others. For example, a woman who was abused or raped may found a women’s advocacy group. In 2009, Vollhardt put forth a model demonstrating that some individuals who are subjected to negative experiences are more likely to be altruistic and prosocial than others who have not had such experiences. In contrast to theories of resilience, this model states that some individuals are actually more prosocial towards others because of their negative experiences, rather than in spite of them. Vollhardt identifies several factors that may be responsible for increased prosocial behavior, including increased ability to take the perspective of people with similar experiences, use of prosocial behaviors as a means of coping, and attempts to find meaning in life.

Although advances in role-taking abilities have been discussed in relation to children’s moral reasoning, the potential effects of contextual risk experience and violence exposure on children’s ability to take others’ perspectives have been unexamined. It is possible to interpret Vollhardt’s model so that children may use more advanced forms of perspective-taking when given the opportunity to aid another person with similar experiences. Such results have been found with adults’ perspective-taking abilities (Epley, Keysar, van Boven, & Gilovich, 2004) and prosocial behaviors (Barnett, Tetreault, & Masbad, 1987). However, Vollhardt’s theory is aimed at understanding the attitudes and behaviors of adults and did not specifically address how children’s cognitive development may be altered by exposure to contextual risk and violence. If applied to
social development, it may be that children who normally do not consider other perspectives may do so in certain (i.e., high-risk) situations, and that this increase in context-based perspective-taking is associated with more prosocial behavior. Though he did not specifically address this possibility, Kohlberg (1963) stated that individuals’ moral reasoning can differ between scenarios, and it may be that exposure to contextual risk and violence is one mechanism through which individuals’ moral reasoning and related behavior could change.

Midlarsky (1991) has argued that aiding another person can be used as a coping mechanism because prosocial behavior may distract from one’s troubles, increase self-esteem, elevate mood, and increase self-efficacy. These factors increase after helping another person (Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001; Millar, Millar, & Tesser, 1988). Vollhardt identifies desire to find meaning in life and to believe in a just world as a mechanism through which prosocial behavior and negative experiences may be positively related. By behaving in ways that are advantageous to others (especially others similar to oneself), a person who has been exposed to negative experiences may come to believe that they have helped restore “balance” in the world.

Vollhardt’s model was aimed primarily at groups exposed to life-changing events, which are usually identifiable by group or cultural divides (e.g., experience of a cultural group of war; survivors of rape) or location (e.g., experience of the 9/11 attacks in New York City). This model does not include contextual risk factors such as having a teenage mother or a criminally-involved parent. Such factors affect children by shaping the environment in which they live and with which they interact. It is unlikely that individuals who have experienced a contextual risk factor such as living in a single-
parent home would consider themselves a survivor and strongly identify with others from single-parent homes. However, experience of several contextual risk factors may lead individuals to consider themselves victims of circumstance. Additionally, exposure to chronic community violence may also lead to greater group affiliation and therefore more prosocial behavior with people like oneself.

**Development of Prosocial Behavior**

Studies examining how children’s prosocial behavior differs by age and gender have employed a multitude of methods, ranging from subjective reports by parents, teachers, peers, and children themselves, to naturalistic observations of children with their peers and parents, to staged observations by researchers. This wide range of methodologies has led to mixed results in respect to age and gender differences.

**Age-related changes.** Reporters of children’s prosocial behaviors and attitudes have rated younger children as more prosocial than older children (e.g., Carlo et al., 2007), which appears counter-intuitive. The questionnaires and subscales used in some such studies were created to measure empathy and altruistic behavior (see below), and are correlated with measures of observed prosocial behaviors in children (Eisenberg, Guthrie, Murphy, Shepard, Cumberland, & Carlo, 1999). However, defining reports of empathy or altruism as prosocial behavior may be misleading, as studies that use observational techniques report that older children engage in more prosocial behaviors than younger children (e.g., Garner, Dunsmore, & Southam-Gerrow, 2008). These age-related discrepancies in the literature suggest that subjective reports of prosocial behavior may not accurately reflect children’s actual behavior, and may be reports of other attitudes or behaviors. Prosocial behavior is socially-desirable, and children whose parents report
highly internalized value of prosocial behavior are reported by their teachers as more prosocial (Hastings, McShane, Parker, & Ladha, 2007). This suggesting that parents (and possibly teachers) may be motivated to view certain children as more prosocial than an objective observer.

**Gender-related differences.** Gender socialization theory suggests that parents, teachers, and peers expect and encourage greater other-oriented behavior in girls than in boys (Leaper, 2002). As prosocial behavior is defined as behavior that has no clear advantage for the actor and benefits another person (Eisenberg, 1982), one would expect that girls would behave more prosocially in a variety of situations. Most studies that have relied on reports of children’s prosocial behaviors have revealed differences favoring girls. In contrast, studies utilizing observations of prosocial behavior report that there are no discernible gender differences (e.g., Chapman et al., 1987). Observational measures of prosocial behavior may allow for more clear understanding of how boys and girls use prosocial behaviors without potential gender expectations on the part of the reporters.

**Methodological differences in measuring children’s prosocial behavior.** Some studies have utilized questionnaires with items that are clearly indicative of prosocial behavior, that is, actions that benefit others with no apparent advantage for the actor. Such measures have items such as “I have done volunteer work for a charity” (Self-Report Altruism Scale; Rushton, Chrisjohn, & Fekken, 1981) or “I have done someone a favor or lent someone money” (Primary Prevention Awareness, Attitudes and Usage Scale, prosocial subscale; Swisher, Shute, & Bibeau, 1984), both actions require giving something up (i.e., time or money). Others have used questionnaires designed to measure empathy or altruism and have defined their results as prosocial behavior. However, scales
designed to measure altruism or empathy have items such as, “This child is a leader, and can tell others what should be done but is not too bossy” (Teacher Report, prosocial subscale; Coie, Terry, Underwood, & Dodge, 1990), “This child is considerate of other people’s feelings” (Strengths & Difficulties Questionnaire, prosocial subscale; Goodman, 1997), and “This child shows sympathy” (Social Behavior Questionnaire; Tremblay, Loeber, Gagnon, Charlebois, Larivee, & LeBlanc, 1991). As discussed above, these reported measures have been found to predict more prosocial behavior in younger children as compared to older children, and most report that girls engage in prosocial behavior more often than boys. Discrepancies between reporters within studies also have been found (Eisenberg et al., 2002; Scourfield et al., 2004), suggesting potential reporter biases.

Conversely, studies relying on observational measures have found different age and gender effects. These studies include observations of three to six year old children with same gender peers (Garner, Dunsmore, & Southam-Gerrow, 2008), of 2-10 year old Kenyan children in their community (de Guzman, Edwards, & Carlo, 2005), of 5-12 year old children with distressed others (Chapman et al., 1987), and six- to ten-year old children volunteering to donate money (Knight, Johnson, Carlo, & Eisenberg, 1994). Such studies have reported that older children are more prosocial than younger children, and no gender differences have been observed.

Most studies that have either used staged manipulations or that have recorded spontaneous prosocial behaviors have collected data about more than one type of prosocial behavior. Hastings and colleagues observed children’s helping behaviors towards an unknown adult and their comforting behaviors towards their mother, but
labeled these behaviors collectively as “concerned” actions (Hastings, Rubin, & DeRose, 2005); Garner and colleagues observed children in peer groups and counted any spontaneous or requested prosocial act, including helping, comforting, and sharing (Garner et al., 2008); de Guzman and colleagues observed behaviors of Kenyan children in their community and tallied any behavior that was nurturing, prosocial-dominant (i.e., attempting to change a person’s behavior to help them), or responsible (such as chores; de Guzman et al., 2005). What the results of these studies do not tell us is if there were age or gender differences by the type of prosocial behavior, as different behaviors are lumped together under the same terms. Types of prosocial behaviors can be seen as either nurturing (e.g., comforting or sympathetic behaviors) or chivalrous (e.g., helping or sharing behaviors). Girls may be socialized to be nurturing (showing more comforting or concerned behavior) and boys to be action-based in their prosocial behavior (helping to pick up dropped things, fix a problem, etc.). By examining the frequency of observed behaviors separately, we may better understand if and how age and gender truly influence children’s comforting, helping, and sharing in absence of reporter expectations or biases.

Effects of Contextual Risk and Violence on Children’s Adjustment

Children’s adjustment can be influenced by personal factors, such as age and gender, in that these factors can explain some of the variance in outcomes such as school achievement, delinquency, and internalizing disorders. To better understand antecedents of children’s adjustment, one must also consider aspects of children’s environments that may influence their functioning. Two such environmental aspects are children’s experience of contextual risk factors and their exposure to violent and criminal activity.
These factors have been shown to influence functioning in multiple areas of children’s lives, including social adjustment.

**Increase in maladjustment associated with increase in contextual risk factors.**

Since the publication of Sameroff and colleague’s seminal study linking increased cumulative risk experience and children’s intelligence (Sameroff, Seifer, Baldwin, & Baldwin, 1993), several studies have utilized the multiple risk model to examine the influence of a variety of risk factors on children’s maladjustment. Kliewer and colleagues measured African-American children’s experience of ten sociodemographic (e.g., low caregiver education, having a teen parent) and psychosocial factors (e.g., everyday stressors, negative life events) in relation to physiological stress measures. They found an increase in stress hormone levels in children with multiple risk factors (Kliewer, Reid-Quinones, Shields, & Foutz, 2009). Burchinal and colleagues measured similar sociodemographic and psychosocial risk factors in a sample of African-American children and found that children high in risk factors at age 12 months had lower academic scores and were rated by teachers as having fewer social skills and more problem behaviors at age 4 (Burchinal, Roberts, Zeisel, Hennon, & Hooper, 2006). Appleyard and colleagues assessed psychosocial factors (e.g., child maltreatment, negative life events), and found that children exposed to multiple risk factors early in childhood were reported as having more externalizing problems at age 16 (Appleyard et al., 2005). These studies and others have shown that exposure to multiple risk factors in childhood is generally associated with current or later maladjustment, though the definition of cumulative risk or maladjustment varies.
Increase in maladjustment associated with increase in violence exposure.

Although the study of the effects of cumulative risk exposure on children's maladjustment is widely varied as to the measures employed, the same is not true for studies of children's exposure to violence. Such studies have relied on validated self-reports of community and personal violence exposure, such as the Traumatic Events Screening Instrument for Children (Ribbe, 1996), the Survey of Exposure to Community Violence (Richters & Saltzman, 1990), and the Violence Exposure Scale for Children (VEX-R; Fox & Leavitt, 1995). Increases in self-reported witnessed violence has been associated with higher parent-reported conduct problems (Mrug & Windle, 2009; Salzinger, Rosario, Feldman, & Ng-Mak, 2008), self-reported delinquent behavior (Mrug & Windle, 2009; Salzinger et al., 2008), peer-reported aggression (Salzinger et al., 2008), and self-reported emotional distress (Raviv, Raviv, Shimoni, Fox, & Leavitt, 1999). The reported increase of anti-social behavior in children exposed to violence (an experience which is by definition anti-social) leads one to expect the opposite relation with prosocial behavior. That is, children exposed to violence and criminal activity should behave less prosocially than their peers.

Effects of Contextual Risk and Violence on Children's Prosocial Behavior

Extensive past research has been conducted concerning children's risk experience and maladjustment, yet relatively little work has investigated relations between contextual risk, violence exposure, and children's positive adjustment. Understanding the trajectories of maladjustment is clearly important, but focusing only on antisocial behaviors limits our understanding of the effects of contextual risk and violence exposure on children's overall social functioning. Prosocial behavior and how it is influenced by
contextual risk factors has been examined only marginally, with the majority of research focusing on the influence of one factor. Violence exposure and its effect on prosocial behavior has yet to be assessed.

The few studies that have examined associations between contextual risk experience and children's prosocial behavior have been limited to self- or parent-reported measures. Children of divorced families (Dunn et al., 1998) and of families of low socioeconomic status (Romano et al., 2005) are reported by their mothers to be less prosocial than peers. However, Raboteg-Saric and colleagues found that Croatian children were reported by teachers as more prosocial to peers after exposure to war violence in comparison to ratings prior to exposure, regardless of age-related changes (Raboteg-Saric et al., 1994). The authors suggested that their findings were due to higher group cohesion among these children, which led them to be more prosocial with their peers. The one study to date examining children's experience of cumulative risk factors in relation to prosocial behavior has also used self-reports of behavior, and found no differences by contextual risk experience (Flouri & Kallis, 2007). Researchers have yet to examine how children's observed prosocial behaviors may be influenced by cumulative contextual risk experience or by any measure of violence exposure. Understanding how contextual risk and violence exposure influence children's observed prosocial behavior is essential, because knowing only how such factors influence maladjustment and reported prosocial behavior only tells part of the story.

Rationale for the Current Study

The review of relevant literature describes theories and empirical research of moral and prosocial reasoning, prosocial behavior, and contextual risk and violence
exposure. Great advances have been made in understanding how children think about moral and prosocial dilemmas and how behavior is influenced by contextual risk and violence experience, but how children use prosocial behaviors and how these behaviors develop in light of cumulative contextual risk experience and violence exposure is less well understood. The purpose of the current study is to address some of the gaps highlighted in the empirical literature review, using the reviewed theories as guidelines. The prosocial development of high-risk children will be examined, as past research has primarily sampled from middle-class populations. Observations of comforting, helping, and sharing towards peers and adults will be utilized to further examine age and gender discrepancies stated in past research. The effects of cumulative contextual risk and violence exposure on these behaviors will be examined, as no studies to date have investigated how these factors influence children’s observed prosocial behaviors. As the aforementioned factors do not exist exclusive of one another, possible interactions between our variables of interest (i.e., age, gender, violence exposure, and cumulative contextual risk experience) will also be examined. Interactive effects of violence exposure and contextual risk on children’s prosocial behavior has yet to be examined, according to the available literature.

Hypotheses

In light of the reviewed theoretical and empirical literature, the following five hypotheses were developed.

**Hypothesis 1: Increase in comforting, helping, and sharing with age.** Studies relying on observations of children’s behavior to examine age differences in prosocial behavior have found that older children exhibit prosocial behaviors more frequently than
do younger peers. As such, older children are expected to comfort, help, and share more often than younger children.

**Hypothesis 2: Gender differences in comforting, helping, and sharing.** Comforting, helping, and sharing may be different types of prosocial behaviors, and will therefore be examined separated, rather than as an aggregate. It is expected that girls will comfort, help, and share more frequently than boys.

**Hypothesis 3: Decrease in comforting, helping, and sharing with increased exposure to contextual risk.** It is expected that children exposed to cumulative contextual risk will engage in fewer displays of comforting, helping, and sharing than their peers, as contextual risk is not thought to constitute suffering as defined by Vollhardt.

**Hypothesis 4: Increase in comforting, helping, and sharing with increased exposure to violence.** Conversely, as would be predicted from the model of altruism born of suffering, it is expected that children exposed to violent and criminal activity will comfort, help, and share more frequently than peers. Though past literature has repeated linked violence exposure with more maladjustment, a different relation is expected for children’s prosocial behavior.

**Hypothesis 5: Interactive effects of age, gender, cumulative contextual risk experience and violence exposure in comforting, helping, and sharing.** The effects of age, gender, and contextual risk and violence exposure are expected to influence children’s prosocial behaviors interactively. Therefore, it is hypothesized that children’s comforting, helping, and sharing will be best understood by the joint effects of these factors. For example, it may be that age is associated with more comforting, but that also
examining the effects of violence exposure shows that it is only the children exposed to violence who comfort more with age.

Method

Participants

Participants were recruited from an elementary school in a southeastern urban area. The school was specially selected for this project due to several factors. First, the neighborhoods served by this school house low-income families. As many as 35% of individuals in this area live below the poverty line (U.S. Census Bureau, 2007). These neighborhoods also have the highest crime rate in the city. Selection of such a school for the current study is ideal, as risk factors such as family poverty and exposure to criminal activity will be examined. Second, the school was selected due to the uniqueness of its curriculum and structure. The school follows a magnet program curriculum, operates on a year-round schedule, and holds a longer school day than a traditional elementary school (eight as compared to six hours long). Students participate in mandatory tennis lessons, are issued uniforms, and are subject to regular uniform inspections by military personnel. Many students live in the immediate neighborhoods, making it more likely that the sample will be of a high-risk population of children.

Participating children ($n = 248$) were recruited from second ($n = 78$), third ($n = 60$), fourth ($n = 64$), and fifth ($n = 46$) grade classrooms. Children’s gender was obtained from school records, and 39% of children were male ($n = 96$). All participating children were non-White, with 92% of children reporting their race as African-American, 7% as biracial or of multiple ethnicities, and 1% as other races. Children’s parents were asked to report their child’s date of birth, allowing for the calculation of age in months. For
children without parent data, school records were used to determine date of birth. Children were on average 113.93 months ($SD = 12.18$; approximately 9.5 years) old. More demographic information on participating children is presented in Table 1.

Parents of these children were also asked to participate. Approximately half (52%) of participating children had a parent who completed and returned questionnaires ($n = 128$). Of participating parents, 4% were male ($n = 5$). The majority (87%) of participating parents were children's mothers ($n = 111$). More demographic information on participating parents (e.g., educational attainment) is included below and in Table 1.

**Measures**

**Cumulative contextual risk score.** Parents who participated in the current study completed a demographic questionnaire (see Appendix A), which was used to create a measure of children's cumulative contextual risk experience. As only half of parents returned questionnaires, the items described in this subsection refer only to the 128 children for whom these data were available.

Parents were asked to report the composition of their family. They reported the number of children under the age of 18 living in the family's home. Children whose parents reported having four or more minor children in the home were assigned a 1, and those who live in a home with three or fewer minor children were assigned a 0. The mean number of children in the home was 2.73 ($SD = 1.25$), and 25% of children lived in a home with four or more children ($n = 41$). Parents also reported the number of adults living in the home. Children were assigned a 1 if they lived with only one adult and a 0 if more than one adult lived in the home. More than half (59%) of children lived in a single-parent home ($n = 71$).
Parents also reported the child’s mother age and the age of their oldest child. These reports allowed calculation of the age of the mother at the birth of her first child. Children whose mother were age 18 or over at the birth of her first child were assigned a 0 for teenage parenthood and a 1 if the mother was under the age of 18 at the birth of her oldest child. The average age of mothers at the birth of their first child was 21.24 (SD = 5.09), and 20% of mothers were teenagers at the birth of their first child (n = 24).

Parents reported if either of the child’s parents had been incarcerated since the birth of the target child. Children were assigned a 1 if either or both of their parents had ever been incarcerated and a 0 if neither parent had ever been incarcerated: More than half (52%) of children had a parent who had been incarcerated in jail or prison (n = 64). Parents also reported if the participating child had witnessed the arrest or sentencing of either parent. Children were assigned a 1 if they had witnessed the arrest or sentencing of a parent and a 0 if they had not witnessed these events. Less than three percent of children had witnessed the arrest or sentencing of a parent (n = 6).

Parents reported their educational attainment and the family’s total annual income. Children whose parents reported not completing high school or obtaining their General Education Degree (GED) were assigned a 1 and children whose parents reported completing high school or obtaining a GED were assigned a 0. Twelve percent of parents had not completed high school or obtained their GED (n = 16). Children whose parents reported a household income of $20,000 or more per year were assigned a 0, and children whose parents reported earning less than $20,000 per year were assigned a 1. Nearly half (46%) of children’s families earned less than $20,000 per year (n = 57).
A cumulative risk score was created using these seven factors. The dichotomous variables were summed to create a cumulative contextual risk score, which could range from 0 (indicating a lack of contextual risk experience) to 7 (indicating a full range of contextual risk experience). The mean number of contextual risk factors experienced by children with available data was 3.30 ($SD = 1.44$), and the total number of contextual risks reported by parents ranged from one to six.

**Violence exposure.** The VEX-R (Fox & Leavitt, 1995) was administered to child participants. The VEX-R consists of 12 items which ask the child’s exposure to different forms of violence (see Appendix B). Children are asked to report how often they have seen each event in real life, and possible responses were *never* (0), *once* (1), *a few times* (2), and *lots of times* (3). Children’s responses to these items are summed to create an index of their exposure to violent incidents. Total VEX-R scores could range from 0 (indicating lack of exposure to these events) to 36 (indicating high exposure to these events); the average score reported by children was 18.50 ($SD = 6.93$). Internal consistency of this measure was relatively high (Cronbach’s alpha of .78), considering that experience of one violent or criminal event does not necessarily determine what other events a child will experience, and the VEX-R has shown concurrent validity (Raviv et al., 2001)

**Prosocial behaviors.** Children were interviewed individually by a researcher trained in three prosocial behavior observations. Each observation was separated during the interview by the administration of questionnaires.

**Comforting.** After administering several questionnaires, the comforting behavior task was conducted (see Appendix C). This task was used in a study of empathy in twins.
(Zahn-Waxler, Robinson, & Emde, 1992). The researcher retrieved questionnaires from a
briefcase, and the lid of the briefcase fell on her hand. The researcher expressed pain
through low to moderate vocalizations and pained facial expressions for 15 seconds, after
which the researcher lessened her expression of pain for another 15 seconds. The
researcher noted whether the child attempted to comfort or soothe the researcher or if the
child was unresponsive to the researcher’s distress.

**Helping.** The helping observation was based on Iannotti’s 1985 helping behavior
assessment (see Appendix D). The researcher broke her pencil while recording the child’s
answer to a question, and retrieved another from a box of pencils. While pulling out a
new pencil from the box, the researcher dropped several pencils on the floor in the view
of the child. The researcher continued to record the child’s answer for 20 seconds, in
which time the child had the opportunity to pick up the fallen pencils. If the child had not
picked up the pencils after 20 seconds, the researcher spent another 20 seconds picking
up the pencils. The child’s behavior to the dropping of the pencils was recorded as either
the absence of helping behavior (e.g., picking up the pencils) or as helping the researcher.

**Sharing.** The final prosocial behavior observation was administered at the end of
the interview (see Appendix E) and was based on a similar assessment used by Radke-
Yarrow, Zahn-Waxler, and Chapman (1983). Children were thanked for their
participation and told they will receive a prize. As the researcher retrieved the prize from
the briefcase, she stated that there are only two prizes left. The researcher then explained
that the prize the child does not pick would be given to the next child interviewed. Two
prizes were set in front of the child during this explanation—one prize was a colorful
pencil and an activity book (i.e., a coloring book featuring popular cartoon characters on
the cover), the other prize was a plain pencil and a plain writing tablet. The child was allowed to pick the prize they would like, during which time the researcher checked the interview schedule. When the child told the researcher which prize he or she wanted, the researcher asked the child to wait briefly, and finished checking the interview schedule. The researcher then said that there was enough time before the next interview to retrieve more prizes from her car. The child was told that he or she may have both prizes, and as the child was leaving the interview, the researcher told the child that she was going to purchase more prizes, and asked which prize they liked better. Children’s initial choice of prizes (“fun” prize versus “plain” prize) and their preferred choice of prize were recorded.

**Procedure**

Children were recruited by sending home information about the project and consent letters to return to their child’s teacher. A total of 407 consents were sent home to 21 classrooms, and 297 (73%) were returned. Parents of these children were asked to give consent for their participation, their children’s participation, both, or neither. Of the 297 consents returned, 248 parents (84%) consented to their children’s participation. Research assistants interviewed children individually after the child gave his or her written assent. Each interview took place in a semi-private area, such as a quiet office or corner of a room, and lasted between 20 minutes and one hour. Interviews consisted of the completion of several questionnaires, interspersed with two behavioral assessments, and ended with a sharing assessment.

Parents were mailed questionnaire packets, and were offered $20 gift cards for completing and returning the packets. Parents were also given the option to complete
questionnaires online. As only about half of participating children had corresponding parent data ($n = 128$), children whose parents participated were compared on several assessments to children whose parents did not participate. The current study is part of a larger battery of assessments, and children’s depressive symptoms (Children’s Depression Index; Kovacs, 1992), anxiety symptoms (Multidimension Anxiety Scale for Children; March, Parker, Sullivan, Stallings, & Connors, 1997), and peer-reported aggression, as well as age, gender, and violence exposure, did not differ significantly between children with available parent data and children whose parents did not participate.

**Results**

In this section, the effects of age and gender on children’s comforting, helping, and sharing behavior are presented first. Whether comforting, helping, and sharing were influenced by cumulative risk experience and violence exposure in the expected directions (i.e., cumulative risk predicting a decrease in prosocial behavior; violence exposure predicting an increase in prosocial behavior) was then assessed. Finally, potential interactions between age, gender, and cumulative contextual risk experience and between age, gender, and violence exposure to predict comforting, helping, and sharing were explored.

**Descriptive Statistics**

Descriptive information about the sample is presented in Table 1, which includes demographic information such as child age and gender, further information about the cumulative risk score and violence exposure scale, and frequency rates of children’s comforting, helping, and sharing behaviors. Preliminary relations between variables of
interest were explored through correlation analyses of these variables and are presented in Table 2. Gender differences were also examined by independent samples t-tests, in which males’ and females’ self-reported violence exposure were compared, and no differences were found (see Table 4).

**Hypothesis 1: Increase in Comforting, Helping, and Sharing with Age**

Independent-samples t-tests were conducted to examine if children who comforted, helped, and shared differed in age from children who did not comfort, help, or share. As seen in Table 2, no age differences were found. Therefore, Hypothesis 1 was not supported.

**Hypothesis 2: Gender Differences in Comforting, Helping, and Sharing**

Chi-square analyses were conducted to examine if boys comforted, helped, or shared at different rates than girls. As seen in Table 4, boys and girls comforted and helped at similar rates. Boys, however, shared with a peer more often than girls, $\chi^2 (1) = 5.69, p < .05$, Cramer’s $V = .17$. Partial support for Hypothesis 2 was found, in that gender did influence children’s sharing behavior.

**Hypothesis 3: Decrease in Comforting, Helping, and Sharing with Increased Exposure to Contextual Risk**

To examine if children’s comforting, helping, and sharing behavior was negatively influenced by cumulative contextual risk experience, independent-samples t-tests were conducted. Children who engaged in comforting, helping, or sharing behaviors did not differ from peers in terms of cumulative contextual risk experience (see Table 3). Hypothesis 3, which stated that children exposed to cumulative contextual risk would comfort, help, and share less often than their peers, was therefore not supported. In light
of extensive past research showing that maladjustment (or in the case of the current study, reduced adjustment) is most pronounced in children with four or more sociodemographic risk factors (Sameroff et al., 1993), Figure 1 depicts children’s helping, comforting, and sharing behavior across levels of cumulative risk.

**Hypothesis 4: Increase in Comforting, Helping, and Sharing with Increased Exposure to Violence**

Differences in violence exposure in children who comforted, helped, or shared from children who did not were examined in a series of independent-samples $t$-tests. Children who comforted, helped, or shared did not report higher levels of violence exposure than their peers (see Table 3). This null finding does not support Hypothesis 4, which predicted an increase in comforting, helping, and sharing with greater exposure to violence.

**Hypothesis 5: Interactive effects of Age, Gender, Cumulative Contextual Risk Experience and Violence Exposure in Comforting, Helping, and Sharing**

Binary logistic regression analyses were conducted to examine how independent variables of interest (i.e., age, gender, cumulative contextual risk experience) interactively predicted children’s behaviors. Interaction terms were created by standardizing independent variables and multiplying two or more of these variables together (e.g., an interaction between age and gender could be examined using the product of the standardized variables for age and gender). The standardized independent variables of interest were entered in the first block of the binary logistic regression to account for their individual effects on the dependent variable, two-way interaction terms
were entered in the second block and the three-way interaction term was entered in the third and final block of the binary logistic regression.

**Comforting.** Children’s comforting behavior was not predicted by any interactions between age, gender, and violence exposure (see Table 5).

**Helping.** Children’s helping behavior was predicted by the joint effects of age and gender (Wald (1) = 3.90, \( p < .05 \), Nagelkerke’s \( R^2 = .04 \); see Table 5). To better understand the influences of age and gender, this two-way interaction was plotted according to standards set forth by Dawson and Richter (2006). An interaction plotter allows for visual plots in which the relation between helping behavior and gender is depicted as a function of age. In Figure 2, it can be seen that older males helped the researcher more than younger males, but that older females helped less than younger females.

Children’s helping behavior was also predicted by the joint effects of age and violence exposure (Wald (1) = 8.52, \( p < .05 \), Nagelkerke’s \( R^2 = .06 \); see Table 5). In Figure 3, it can be seen that older children not exposed to violence helped the researcher more than younger children not exposed to violence. However, in children exposed to violence, older children helped less than younger children.

**Sharing.** Children’s sharing was predicted by the interactive effects of age, gender, and violence exposure (Wald (1) = 4.09, \( p < .05 \), Nagelkerke’s \( R^2 = .12 \)). Figure 4 aids in explaining this three-way interaction. Children exposed to low amounts of violence showed a slight increase in sharing with age and children exposed to high amounts of violence differed in their sharing behavior with age when also examined by gender. Younger boys exposed to violence shared almost twice as often as younger girls
exposed to violence (18% versus 11%). In older children, however, 40% of older girls shared while few of the older boys shared.

Though part of the fifth hypothesis predicted that children’s comforting, helping, and sharing behavior would be predicted by interactive effects of children’s age, gender, and cumulative risk experience, the sample size of these analyses was substantially reduced. The minimum sample size suggested for binary logistic regression can be computed using the following simple formula: \( n = 10k / p \), in which \( k \) represents the number of covariates in the regression equation and \( p \) represents the response rate of the population (Peduzzi, Concato, Kemper, Holford, & Feinstein). The expected response rate for children’s comforting, helping, and sharing in this population is unknown; thus, the rate of chance responding (.50) was used. The number of covariates in the desired regression equation was 7, and therefore the necessary sample size for these analyses was 140 \((10 * 7 / .50)\). Due to parent attrition, the available sample was limited to 128. Therefore, binary logistic regression analyses were not conducted to determine interactive effects of children’s age, gender, and cumulative risk experience on comforting, helping, and sharing.

**Post-Hoc Power Analyses**

To aid in the interpretation of the presented results, analyses were performed to determine the power that these analyses had to determine effects in the population. G*Power 3 statistical software was used, which allows for post hoc analysis of power in a variety of statistical tests, including binary logistic regression (Faul, Erdfelder, Buchner, & Lang, 2009). The binary logistic regression analyses conducted in the current study (that is, the analyses predicting children’s prosocial behaviors by their age, gender, and
exposure to violence) had the following power to detect effects: for comforting, .15; helping, .53; and sharing, .79. As .80 is generally considered the acceptable level of power, the analysis predicting children’s sharing behavior is the only one which has enough power to detect a meaningful effect.

Discussion

The current study examined how children’s comforting, helping, and sharing behavior developed in high-risk environments. Age and gender effects on these behaviors were examined, as were the effects of cumulative risk experience and exposure to violence. Of special interest was how these factors jointly influence children’s comforting, helping, and sharing behaviors, as these potential interactions have not been a focus of previous research. Though some of the stated hypotheses were not supported, children’s helping behavior was found to be influenced both by the joint effects of age and gender and by the joint effects of age and violence exposure. The interactive effects of age, gender, and violence exposure predicted sharing with a peer. Surprisingly, children’s comforting behavior toward the researcher was not predicted by any of these factors, nor did cumulative risk experience influence children’s comforting, helping, or sharing.

In this section, the relations between and constructs underlying the behavioral assessments will be discussed, as will the main findings of the current study. The possible reasons behind the lack of differences found in helping and sharing behaviors due to contextual risk, as well as the overall null findings with children’s comforting behavior, will be examined. Finally, the importance of these findings will be discussed in light of
reviewed theory, as well as possible avenues for future research and for programs aimed at improving children’s social competencies.

**Comforting, Helping, and Sharing Assessments**

The present study assessed children’s use of comforting, helping, and sharing in situations that occur in everyday life: comforting an adult in mild distress, helping an adult pick up dropped items, and sharing limited resources with peers. Past research has utilized similar measures, but some studies have defined their results as children’s prosocial behavior, without mention of the unique attributes and influences on each behavioral assessment (e.g., Eisenberg, Wolchik, Goldberg, & Engel, 2003). The current study found that children’s comforting, helping, and sharing were distinct tasks. The relation between comforting and helping an adult, though statistically significant, was of a small effect ($r = .15$). Sharing with peers was unrelated to either of the other two tasks. Researchers should note the loose associations between these behavior assessments, as this finding replicates previous literature (e.g., Eisenberg et al., 1999) and suggests that measures of multiple tasks are required to best understand the varied behaviors considered prosocial. Additionally, the comforting, helping, and sharing tasks are standardized assessments unlikely to be influenced by reporter bias, and the “real-life” scenarios in the school setting may be more valid than those in the laboratory.

These tasks all require behavior aimed at another person yet each is unique and taps into different aspects of prosocial behavior. Only one-third of children comforted an adult; this low rate of responding may be partially explained by the nature of the task. Children were not expected (and could not) do anything to alleviate the researcher’s distress, and could only ask if she was okay. This verbal expression of empathy or
concern may seem less appropriate to a young child when the distressed individual is not only an adult, but an unfamiliar one. Conversely, helping, the task in which most children participated (78%, \( n = 91 \)), may be the most socially-appropriate and desirable of the three. Children are taught at a young age that if someone drops something, you should help them pick it up, and children in this sample have likely seen an adult be helped in the past.

Helping pick up dropped items may also be influenced by a lack of behavioral inhibition (or the ability to control impulsive, reactive behaviors), rather than a desire to aid another person. Children in the present study who helped the researcher did so immediately in almost all cases, with only 3% of children helping after the initial 20 seconds. Their behavior may have been similar had the pencils simply fallen off the table, rather than been dropped by someone. If so, this would suggest that helping was a behavioral response, rather than a prosocial act. Teacher-rated prosocial behavior is predicted by children’s inhibitory abilities, in that children unable to withhold impulsive responding to a task were rated by teachers as being less prosocial with peers (Mitchell, 2006). The helping task in the current study may be especially sensitive to behavioral inhibition tendencies of children, a hypothesis that should be examined in future research, in order to truly understand the motivation behind children’s helping pick up dropped pencils.

The sharing task was unique in that benefit would be given to a schoolmate rather than an adult, which may account for this task being unrelated to the other two. Children in the current study lived in a low-income area, and it may have been that the “good” prize was of great value to these students, and that sharing was more disadvantageous
than expected. The nature of the task, however, makes it difficult to use a “good” prize of little enough value that it would not be coveted while still maintaining superiority over the “bad” prize. Zarbatany and colleagues measured children’s sharing at a less personal, yet still salient level by telling classrooms of students that the class had a certain amount of money to spend which could be used for the class or donated to needy children (Zarbatany, Hartmann, & Gelfand, 1985). In this task, children would not reap the benefit of having something valuable themselves, yet sharing with others would still require giving something up, a useful alternative for future studies.

**Cumulative Contextual Risk Experience and Prosocial Behavior**

The negative effects of cumulative contextual risk experience on children’s adjustment have been widely documented (e.g., Burchinal et al., 2008). It was therefore surprising that the current study found no effect of cumulative contextual risk on children’s comforting, helping, and sharing behavior, but limitations of the study may help explain this null finding. Exposure to contextual risk factors such as having a single or low-educated parent may be less salient, personal experiences than witnessing actual violence. Violence exposure forces children to process and deal with the experience, whereas contextual risk is not an experience that children must deal with directly (Margolin, Vickerman, Ramos, Serano, Gordis, Iturralde, et al., 2009). The findings of the current study show that, at least in this high-risk sample, contextual risk experience does not constitute suffering in a way which would lead to increased prosocial behavior, nor does contextual risk negatively influence prosocial behavior.

The reduced sample size for these analyses is a major limitation of the current study. Contextual risk information was collected from children’s parents, only half of
whom participated. It is possible that a larger study (or one with less parent attrition) could have detected a relation between cumulative contextual risk experience and children’s comforting, helping, and sharing behaviors. Additionally, a very small number of parents reported their children’s exposure to many (i.e., six or seven, of seven possible) risk factors (7%, n = 6). Perhaps the effects of cumulative contextual risk experience on comforting, helping, and sharing is only apparent in children exposed to many risk factors. Conversely, use of a low-income, high-crime neighborhood for recruitment in this study may have led to this null finding. Children in middle- or upper-class neighborhoods may be more sensitive to the effects of multiple contextual risk factors, rather than being entirely protected from them. This possibility has not yet been examined, but research in how these children (as a particular population of interest rather than a sample of convenience) are influenced by contextual risk is a growing area in the developmental literature (see Luthar, 2003).

If the null findings concerning contextual risk and children’s observed prosocial behaviors are replicated in other, larger samples, they could be interpreted as evidence that children’s prosocial behaviors (i.e., helping, sharing) develop along separate pathways than does children’s antisocial behavior (i.e., aggressive or violent acts). This was found in past research utilizing self-reports of adolescents’ prosocial and antisocial behavior (Flouri & Kallis, 2007). Taken together, these findings would suggest that social behavior can not be conceptualized as a continuum, one end of which is aggressive or antisocial behavior and the other prosocial behavior (as has been suggested, e.g., Rushton, Fulker, Neale, Nias, & Eysenck, 1986).
That children’s comforting behavior was robust to the effects of age, gender, and violence exposure is worth discussion. As stated previously, the comforting task was conceptually different from the helping and sharing tasks, as it requires showing concern rather than an action. This task is most likely a measure of empathetic expression—that is, children who felt empathy for the distressed researcher are expected to be the ones who responded to this task. Research into violence exposure has only begun to examine the effects it has on empathy, though frequent use of violent video games has been linked to less reported empathy (Barnett, Vitaglione, Harper, Quackenbush, Steadman, & Valdez, 1997). Research has not of yet examined how contextual risk experience or exposure to real-life violence may influence empathy, which would help us better understand why children’s comforting behavior did not differ by these factors.

**Children’s Helping Behavior**

Children’s helping behavior was predicted by the joint effects of age and gender. Older boys helped pick up dropped pencils more often than younger boys, whereas older girls helped the researcher less often than did younger girls. Gender socialization theory would suggest that as girls are continually exposed to expectations by teachers and parents to be helpful (Leaper, 2002), they should show more helping behavior when they are older, yet this relation was not seen in the current study. Hay (1994) states that children will behave less prosocially as they age, due to advanced cognitive abilities which allow them to “pick and choose” situations in which they use these behaviors. As girls show greater cognitive advances in middle childhood compared to boys (Willingham & Cole, 1997), this theory may help explain why older girls were less likely
to help the researcher pick up pencils than either younger girls or than boys their own age.

Helping was also predicted by the joint effects of age and violence exposure. Older children not exposed to violence helped more often than younger children not exposed to violence, and older children exposed to violence helped less than younger children exposed to violence. The relation between helping behavior and age in children not exposed to violence may be the normal effect of age on helping (as found in past studies of observed prosocial behavior, e.g., Chapman et al., 1987). This main effect may not have appeared in preliminary analyses due to violence exposure’s differential effects on children’s helping with age. The impact of violence exposure is thought to increase with time (and therefore age). If these older children have seen violence used repeatedly as a means to a positive end, a non-violent reaction such as helping may be less likely. Violence exposure has been shown to alter children’s moral reasoning (Ardila-Rey et al., 2009), yet the current study is the first to show how violence influences children’s actual prosocial behavior.

**Children’s Sharing Behavior**

Children’s sharing with a peer was predicted by the joint effects of age, gender, and violence exposure. This complex interaction is discussed first by the differences found in boys, then by those in girls. Older boys exposed to violence shared more than younger boys exposed to violence. Boys have been shown to be more susceptible to the effects of violence exposure than girls (Hanson, Borntrager, Self-Brown, Kilpatrick, Saunders, Resnick, et al., 2008). As violence exposure is thought to be accumulative, older boys exposed to violence may have witnessed these (or other) violent events more
often than younger male peers, simply as a result of living in the neighborhood longer.

The effects of violence exposure on children’s maladjustment are well known (e.g., Salzinger et al., 2008). The results of the current study extend this previous knowledge, as it seems that older boys exposed to violence not only may be more antisocial (e.g., Mrug & Windle, 2009), but are less likely to be prosocial (that is, share) as well.

Girls, on the other hand, who were not exposed to violence showed little difference in sharing associated with age, though older females exposed to violence shared four times as often as younger girls exposed to violence. These findings suggest that violence exposure influences the behavior of boys and girls in different and somewhat unexpected ways. Girls are generally expected by parents and teachers to be more other-oriented than boys, and it is possible that girls living in high-violence neighborhoods have even stronger expectations put upon them by adults. As such, older girls (presumably those with the most socialization experience) in this population would be those showing the most concern for others, which would help explain why older girls exposed to violence shared with a peer more often than any other group.

**Limitations**

The present study adds to the sparse literature concerning aversive influences on children’s prosocial behaviors, yet several factors limit the generalizability of these results. Though the findings concerning children’s violence exposure is compelling, further examination of the level at which children are exposed to violent events is necessary. Violence exposure at the community level (e.g., fighting on the school playground or within the neighborhood) and at the family level (i.e., domestic violence) may have different influences on children’s social functioning. The current study relied
on a report of violence exposure that did not make this differentiation, thus precluding examination of multiple exposure levels. In addition, victimization may influence use of comforting, helping, and sharing behaviors differently than does mere exposure. Such a difference has been found in delinquency and school connectedness of children who witnessed violence and those who directly experienced it (Mrug & Windle, 2009), which opens the possibility of differences in other areas of social functioning.

As previously stated, the examination of contextual risk experience on children’s comforting, helping, and sharing behaviors was limited by the subsample of children for whom these data were available. Children whose parents chose not to participate may live in families marked by more contextual risk than the children whose parents provided these data. Future studies interested in children’s cumulative contextual risk sampling from a similar population could attempt to gather some of this information from child participants.

Demographic differences between children and the researchers whom they could comfort or help should be noted. Research staff consisted primarily of college-aged, White females, whereas the sample was entirely non-White. The results may be influenced by social expectations of these children to behave a certain way not only around authority figures, but also to individuals of a different race. Children’s behavior (for example, sharing) toward someone of their in-group may be influenced by the benefactor, that is, if the person is “like me”. Children may also believe they should aid an individual older than themselves, as they have likely had the opportunity to help a teacher in the past and may have been chastised if they chose to not help. Though
researchers were not introduced as teachers or authority figures, children may have felt they should comply with unspoken expectations, such as that to help.

Finally, the size of the effects found in the current study, as well as the power of the analyses to detect these effects, must be scrutinized. The largest effect found was that of the interactive effects of age, gender, and violence exposure on children's sharing (Nagelkerke's $R^2 = .12$), and this was a small effect (according to standards put forth by Cohen, 1988). This was also, however, the only analysis with high enough power to detect such an effect. The relations found between age and gender and between age and violence exposure to predict helping were very small (Nagelkerke's $R^2 = .04$ and .06, respectively), and there was little power to detect these effects as well. Though these results do add to the previous literature in helping us to understand how children's prosocial behavior is influenced, it remains unclear what other factors may have had larger influences on the frequency of these behaviors.

**Theoretical Implications**

In light of the mixed findings of the current study, examination of how these results expand on some of the reviewed theoretical work is prudent. In particular, the moral development theories of Kohlberg and Gilligan, as well as Vollhardt's model of altruism born of suffering, warrant consideration in light of these findings.

Application of Kohlberg's theory to the current study's findings requires a closer examination of how he believed children's reasoning changes from one stage to the next. Kohlberg did not view development as an artifact of maturation (1968); instead, he believed that experiences, not mere passage of time, were responsible for the cognitive changes associated with advances in moral thinking. Experience fuels advancement from
one stage of moral thought to the next. Girls are thought to advance through cognitive development more quickly and earlier than do boys (Willingham & Cole, 1997), and it is possible that this could explain the differences between boys and girls’ sharing in the context of violence. Older boys exposed to violence did not share with peers, and it is possible that these experiences had stunted their moral development, keeping them in lower, more self-centered stages. Older girls exposed to violence, in comparison, shared more frequently, suggesting that Kohlberg’s theory may be ignoring gender differences in moral thinking, as suggested by Gilligan (1994). Additionally, the fact that girls and boys helped differently in respect to age shows further support for gender differences in moral thinking—age differences were only found with respect to gender or violence exposure, further evidence that Kohlberg should take personal and experiential factors into account.

Gilligan (1994) suggested that girls may think very differently about the world than do boys. Girls are thought to be more concerned with relationships than the greater good or justice expectations, and would be expected to respond more towards the needs of peers than those of strangers. This fits well with the findings that older girls helped the researcher less than boys and than younger girls, while sharing more often with another child than their peers (when exposed to violence). Older boys’ helping may be seen as response to a belief that one should help anyone needing it, and their higher rate of responding as compared to younger boys fits well with Kohlberg’s expectations. Violence exposure seems to intensify this relation, and the results of the current study suggest that exposure to these elements is associated with increased in-group concern for older girls.
Vollhardt’s theory states that altruism born of suffering, though seen in groups, occurs at the individual level. Alterations in cognition, that is, changes in how people process their experiences, lead a person to behave prosocially after suffering, rather than antisocially. Girls are thought to be more cognitively-advanced than boys during middle childhood and adolescence (Willingham & Cole, 1997); perhaps the older boys exposed to violence in this sample had not achieved similar levels of cognitive abilities as their female peers. What Vollhardt did not take into consideration are the effects of maturation and experience (that is, age) on the ability for a person to decide that they will behave differently than they have seen modeled in the past. As traumatic experiences are not limited to adulthood, Vollhardt’s theory should be expanded to include the different ways children may exhibit altruism born of suffering.

**Research Implications**

The present study holds several important considerations for future research. As noted, levels of violence exposure should be differentiated in future studies. The current study also highlights the importance of examining multiple indicators of prosocial behavior separately, rather than relying on single measures or aggregating multiple observations. Had the current study used the aggregated sum of the comforting, helping and sharing tasks, the analyses presented in the Results section would be statistically insignificant. Therefore, past research that has used aggregated measures of prosocial behavior may be missing a relation that exists within individual behaviors. Further examination of the benefactor of the action (i.e., adults versus peers, same race or gender versus different race or gender, etc.) is also necessary to better understand with whom these children prefer to comfort, help, or share.
Researchers interested in extending the present study may wish to examine how or if these children reason about moral or prosocial situations. Ardila-Rey and colleagues assessed children’s responding to peers’ hypothetical moral transgressions (2009), yet use of more traditional moral and prosocial reasoning dilemmas (such as those developed by Kohlberg, 1963, and Eisenberg & Roth, 1980) may help explain if children think differently about what the appropriate behavior is after exposure to such negative events. The effects of these experiences on how children think about prosocial behavior could then be assessed.

The intentions of children who helped in the current study were not clear; children responded to the dropped pencils in a way that could be considered reactive, but this possibility could not be examined with the coding system used. For example, there may be motivational differences in children who helped immediately (that is, jumping up to get the dropped pencils as soon as they fell) and children who made conscious decisions to help the researcher. This could be examined by adding two measures to a future study, assessing children’s inhibitory control though a task requiring inhibition of a response (e.g., the Go/No Go Task) and by recording the time between the dropping of the pencils and the child’s action toward them. Though children’s helping behavior was coded as either happening in either the first 20 seconds after the pencils dropped or in the 30 seconds during which the researcher picked up pencils, there may be differences in the onset of the behavior [e.g., immediately (that is, reactively) or after a few seconds (suggesting the child processed the situation)]. With this information, future studies could examine the relation between children’s response time and their ability to control impulsive behavior, which would help us understand if children are truly helping.
Intervention Implications

Exposure to violence and children’s prosocial behavior have both been the center of intervention efforts in schools. However, intervention efforts rarely focus on both these aspects within the same program. Programs that focus on children’s violence exposure aim to reduce maladjustment, but the focus is often on decreasing unwanted behavior rather than increasing desired behavior. Prosocial training programs are implemented to increase helpful, other-concerned behavior, but do not take into consideration children’s experiences at home or in the community. Children exposed to violence are thought to learn such behavior from witnessing it as a means to positive ends (Bandura, 1978). Learning alternative means of getting what one wants from social interactions may be key for prosocial training programs in high-violence areas. Additionally, any programs intending to reduce the effects of violence exposure on children’s prosocial behavior also need to take children’s age and gender into consideration. Boys and girls helped and shared differently at different ages in this study, and it is quite possible that they would react differently to programs directed at increasing prosocial behavior and decreasing antisocial behavior. Finally, many programs aimed at improving peer relations within violence-exposed schools focus on older children than those examined in this study. These results, however, show that early intervention may be key to positive changes.

One program that may be especially useful for this population is Aggression Replacement Training (ART; Goldstein & Glick, 1994). Developed for children with aggression or conduct problems, ART operates under the assumption that these children have deficient social skills and have developed fighting and other aggressive reactions as a result of modeling. One aspect of ART teaches trainees to focus on others’ perspectives
in dyadic interactions, and though ART was not developed to increase prosocial responding in children, its participants engage in more prosocial behavior after the program than prior (Gibbs, Basinger, & Fuller, 1992). This increase in prosocial behavior may be due to the nature of the program, as ART teaches impulse control techniques (e.g., counting to ten before acting), which suggests that the increase prosocial behavior may be more thoughtful and other-focused than impulsive and reactive.

Conclusions

The current study found that children’s helping and sharing behaviors are not only influenced by their age and gender, but also by their exposure to violent events (though in different ways). Helping an adult was predicted by children’s age and gender: older boys helped more than younger boys, but older girls helped less than younger girls. Helping was also predicted by the joint effects of age and violence exposure: older children exposed to violence helped less than younger peers, though children not exposed to violence showed the opposite relation between age and helping. Sharing with a peer was predicted by the interactive effects of age, gender, and violence, so that older children exposed to violence showed extreme differences in sharing by gender (girls shared at high rates, boys did not share). Comforting behavior was not influenced by age, gender, or violence exposure, nor did cumulative contextual risk have an effect on prosocial behavior.

Opportunities for prosocial behaviors are ever present, and use of these behaviors is necessary to navigate social interactions, especially in middle childhood and early adolescence. The current study shows the multifaceted, possibly detrimental effects of violence exposure on some children’s helping and sharing behaviors, behaviors that aid
children in beginning and maintaining peer relationships. Cumulative contextual risk did not influence children’s comforting, helping, or sharing behaviors, but future research may be able to detect such a relation if it truly exists by employing larger samples, collecting some contextual risk information from other sources (e.g., child participants or schools), and more aggressive recruitment for parents (for example, during follow-up phone calls to see if parents received their questionnaire packets, basic contextual risk information, such as if they are a single parent, could be collected). Though further research into how violence exposure and other negative experiences influence children’s prosocial behavior is needed, the current study suggests that the development of these behaviors are sensitive to both personal and experiential factors.
References


Bellanti, C. J., Bierman, K. L., & the Conduct Problems Prevention Research Group. (2000). Disentangling the impact of low cognitive ability and inattention on social


analysis. *Journal of Clinical Epidemiology, 49*, 1373-1379. doi: 10.1016/S0895-4356(96)00236-3


Table 1

*Descriptive Statistics.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>M (SD)</th>
<th>Percentage (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s age</td>
<td>8.94 (1.08)</td>
<td></td>
</tr>
<tr>
<td>Child’s gender</td>
<td></td>
<td>39 (n = 96)</td>
</tr>
<tr>
<td>Risk score</td>
<td>3.30 (1.44)</td>
<td></td>
</tr>
<tr>
<td>Ethnic minority</td>
<td></td>
<td>100 (n = 248)</td>
</tr>
<tr>
<td>Number of children at home</td>
<td>2.73 (1.25)</td>
<td></td>
</tr>
<tr>
<td>Teenaged mother</td>
<td></td>
<td>20 (n = 24)</td>
</tr>
<tr>
<td>Incarcerated parent</td>
<td></td>
<td>52 (n = 64)</td>
</tr>
<tr>
<td>Witness arrest or sentencing</td>
<td></td>
<td>3 (n = 6)</td>
</tr>
<tr>
<td>Parent did not complete high school</td>
<td></td>
<td>12 (n = 16)</td>
</tr>
<tr>
<td>Family poverty</td>
<td></td>
<td>46 (n = 57)</td>
</tr>
<tr>
<td>VEX-R</td>
<td>18.50 (6.93)</td>
<td></td>
</tr>
<tr>
<td>Comforted researcher</td>
<td></td>
<td>31 (n = 76)</td>
</tr>
<tr>
<td>Helped pick up pencils</td>
<td></td>
<td>78 (n = 91)</td>
</tr>
<tr>
<td>Shared with unknown peer</td>
<td></td>
<td>20 (n = 42)</td>
</tr>
</tbody>
</table>

*Note.* VEX-R = Violence Exposure Scale.
Table 2

*Intercorrelations between Variables of Interest.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Gender</td>
<td>-.04</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. Risk score</td>
<td>-.01</td>
<td>-.05</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4. Children in home</td>
<td>.00</td>
<td>.05</td>
<td>.35***</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5. Adults in home</td>
<td>-.11</td>
<td>-.02</td>
<td>-.23*</td>
<td>-.06</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6. Teenaged mother</td>
<td>.00</td>
<td>.09</td>
<td>.52***</td>
<td>.09</td>
<td>-.22*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7. Parental incarceration</td>
<td>.11</td>
<td>-.15†</td>
<td>.63***</td>
<td>-.04</td>
<td>-.14</td>
<td>.24**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8. Witness arrest/sentencing</td>
<td>.03</td>
<td>.07</td>
<td>.14</td>
<td>-.01</td>
<td>-.04</td>
<td>-.12</td>
<td>.22*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9. Parent education</td>
<td>.01</td>
<td>-.10</td>
<td>-.51***</td>
<td>-.05</td>
<td>-.12</td>
<td>-.26**</td>
<td>-.16†</td>
<td>.04</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10. Family income</td>
<td>.06</td>
<td>-.01</td>
<td>-.57***</td>
<td>-.04</td>
<td>.20*</td>
<td>-.14</td>
<td>-.24**</td>
<td>-.04</td>
<td>.49***</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11. VEX-R</td>
<td>-.06</td>
<td>.02</td>
<td>.26**</td>
<td>.24**</td>
<td>-.12</td>
<td>.28**</td>
<td>.03</td>
<td>.02</td>
<td>-.04*</td>
<td>.19*</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12. Comforting</td>
<td>-.04</td>
<td>.10</td>
<td>.09</td>
<td>.03</td>
<td>-.17†</td>
<td>.10</td>
<td>-.02</td>
<td>-.04</td>
<td>-.10</td>
<td>-.12</td>
<td>.05</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>13. Helping</td>
<td>.05</td>
<td>.02</td>
<td>-.02</td>
<td>-.09</td>
<td>-.07</td>
<td>.11</td>
<td>.04</td>
<td>-.06</td>
<td>-.06</td>
<td>-.08</td>
<td>.02</td>
<td>.15*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14. Sharing</td>
<td>.06</td>
<td>-.17*</td>
<td>.04</td>
<td>.07</td>
<td>.05</td>
<td>-.16</td>
<td>.01</td>
<td>.00</td>
<td>-.07</td>
<td>-.08</td>
<td>-.07</td>
<td>.02</td>
<td>-.01</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* VEX-R = Violence Exposure Scale for Children. † p < .10; * p < .05; ** p < .01.
Table 3

Preliminary Analyses to examine the Effects of Independent Variables on Children’s Comforting, Helping, and Sharing Behavior.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Helping task</th>
<th>Comforting task</th>
<th>Sharing task</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
</tr>
<tr>
<td>Variable</td>
<td>Did</td>
<td>Did not</td>
<td>$t$-value (df)</td>
</tr>
<tr>
<td>Age$^a$</td>
<td>113.10 (11.64)</td>
<td>114.27 (12.48)</td>
<td>0.65 (215)</td>
</tr>
<tr>
<td>Risk score</td>
<td>3.44 (1.38)</td>
<td>3.17 (1.49)</td>
<td>-0.92 (105)</td>
</tr>
<tr>
<td>VEX-R</td>
<td>18.96 (6.76)</td>
<td>18.25 (7.01)</td>
<td>-0.72 (236)</td>
</tr>
</tbody>
</table>

Note. All analyses were performed by comparing children who showed the target behavior (i.e., children who helped, comforted, or shared) to children who did not. VEX-R = Violence Exposure Scale. $^a$ Age is reported in months.
Table 4

Descriptive Analyses examining Gender Differences in Independent Variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Males % (n)</th>
<th>M (SD)</th>
<th>Females % (n)</th>
<th>M (SD)</th>
<th>t-value (df)</th>
<th>d</th>
<th>χ-square (df)</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comforted (%)</td>
<td>25 (n = 24)</td>
<td>35 (n = 52)</td>
<td>2.62 (1)</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helped (%)</td>
<td>77 (n = 73)</td>
<td>79 (n = 117)</td>
<td>0.10 (1)</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared (%)</td>
<td>28 (n = 22)</td>
<td>15 (n = 19)</td>
<td>5.69* (1)</td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk score</td>
<td>3.39 (1.37)</td>
<td>3.25 (1.50)</td>
<td>0.49 (110)</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEX-R</td>
<td>18.33 (6.72)</td>
<td>18.60 (7.10)</td>
<td>-0.30 (237)</td>
<td>-.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. VEX-R = Violence Exposure Scale. * p < .05.
Table 5

*Binary Logistic Regression Analyses Predicting Children's Comforting, Helping, and Sharing.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Comforting (n = 211)</th>
<th>Helping (n = 212)</th>
<th>Sharing (n = 182)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
<td>Wald</td>
</tr>
<tr>
<td>Age in months</td>
<td>-0.04</td>
<td>0.16</td>
<td>0.06</td>
</tr>
<tr>
<td>Gender*</td>
<td>0.25</td>
<td>0.16</td>
<td>2.38</td>
</tr>
<tr>
<td>Violence exposure</td>
<td>0.22</td>
<td>0.16</td>
<td>1.93</td>
</tr>
<tr>
<td>Age X Gender</td>
<td>-0.08</td>
<td>0.16</td>
<td>0.21</td>
</tr>
<tr>
<td>Age X Violence exposure</td>
<td>-0.03</td>
<td>0.17</td>
<td>0.04</td>
</tr>
<tr>
<td>Gender X Violence exposure</td>
<td>0.13</td>
<td>0.17</td>
<td>0.62</td>
</tr>
<tr>
<td>Age X Gender X Vio. exp.</td>
<td>0.10</td>
<td>0.18</td>
<td>0.31</td>
</tr>
</tbody>
</table>

*Note.* †p < .10; *p < .05; **p < .01. *Gender was coded as follows: male = 1, female = 2.
Figure 1. The relation of risk accumulation to children's comforting, helping, and sharing behavior.
Figure 2. Interactive effects of age and gender on children’s helping behavior.
Figure 3. Interactive effects of age and violence exposure on children’s helping behavior.
Figure 4. Interactive effects of age, gender, and violence exposure on children’s sharing behavior.
Appendix A

Parent Demographic Sheet

1. Your name: ___________________________
2. What is your relation to this child? ___________________
3. What is the highest grade or level of education you have completed?

<table>
<thead>
<tr>
<th>Grade/Level</th>
<th>Education Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>8th grade or lower</td>
<td>Received Bachelor’s degree</td>
</tr>
<tr>
<td>Some high school</td>
<td>Some education after Bachelor’s degree</td>
</tr>
<tr>
<td>Completed high school</td>
<td>Received Master’s degree</td>
</tr>
<tr>
<td>Some education after high school</td>
<td>Some education after Master’s degree</td>
</tr>
</tbody>
</table>

4. How old are you? _____
5. How many children currently live in the home? _____
6. How old is the oldest child living in the home? _____
7. How old is the youngest child living in the home? _____
8. Besides children, who else lives with the child most of the time? Include yourself if you live with the child

<table>
<thead>
<tr>
<th>Family Member</th>
<th>Other adults: ____________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother</td>
<td>Grandmother</td>
</tr>
<tr>
<td>Father</td>
<td>Grandfather</td>
</tr>
<tr>
<td>Stepmother</td>
<td>Aunt</td>
</tr>
<tr>
<td>Stepmother</td>
<td>Other adults:____________________</td>
</tr>
</tbody>
</table>

9. Thinking about all sources of income in your family, about how much was your family’s income over the past year?

<table>
<thead>
<tr>
<th>Income Range</th>
<th>$80,000 - $90,000</th>
<th>$90,000 - $100,000</th>
<th>$100,000 - $120,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $10,000</td>
<td>$40,000 - $50,000</td>
<td>$50,000 - $60,000</td>
<td>$60,000 - $70,000</td>
</tr>
<tr>
<td>$10,000 - $20,000</td>
<td>$50,000 - $60,000</td>
<td>$60,000 - $70,000</td>
<td>$70,000 - $80,000</td>
</tr>
<tr>
<td>$20,000 - $30,000</td>
<td>$60,000 - $70,000</td>
<td>$70,000 - $80,000</td>
<td>Over $120,000</td>
</tr>
<tr>
<td>$30,000 - $40,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B

Violence Exposure Scale-Revised

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>One time</td>
<td>A few times</td>
<td>Lots of times</td>
</tr>
</tbody>
</table>

1. How many times have you seen a person yell at another person?  
0 1 2 3

2. How many times have you seen a person throw something at another person?  
0 1 2 3

3. How many times have you seen a person push or shove another person really hard?  
0 1 2 3

4. How many times have you seen an angry person chase a scared person?  
0 1 2 3

5. How many times have you seen a person slap another person really hard?  
0 1 2 3

6. How many times have you seen a person beat-up another person?  
0 1 2 3

7. How many times have you seen a person steal stuff from another person?  
0 1 2 3

8. How many times have you seen a person point a knife or a gun at another person?  
0 1 2 3

9. How many times have you seen a person stab another person with a knife?  
0 1 2 3

10. How many times have you seen a person being arrested?  
0 1 2 3

11. How many times have you seen a person dealing drugs?  
0 1 2 3

12. How many times have you seen a kid getting spanked?  
0 1 2 3
Appendix C

Comforting behavior assessment

Take the next set of questionnaires out of briefcase.

When closing briefcase, let lid slam down on one hand.

15 seconds: express pain vocalizations at low to moderate volume, assume pained facial expression; pay attention to time

15 seconds: gradual subsiding of distress; after time is up, child should not be able to observe any expression of pain

Avoid: eye contact with child, to prevent subtle induction of response

ASK QUESTION: Are you involved with any organizations or sports teams?

DO NOT record answer; instead, code response

Assistance in Distress Coding:

0 = absence of efforts to help or comfort victim

1 = presence of efforts to help or comfort victim (get Band-Aid, pats victims)

Comments:
Appendix D

Helping behavior assessment

ASK QUESTION: What do you like to do with your friends?

Break pencil while writing answer. (Make sure child knows pencil tip is broken)

Ask child to flip to next answer sheet, while taking pencil out of box and simultaneously letting the other pencils in the box fall to the ground.

Say “Oops”; start stopwatch

20 seconds: ignore pencils; finish answering question (What do you like to do with your friends?), get ready for next questionnaire, shuffle papers around, make sure questionnaires are in the correct order

30 seconds: retrieve pencils from floor

If child helps, do not thank him/her. Tell child to place pencils in briefcase.

Ask question: What’s your favorite subject in school?

DO NOT record answer, instead code child’s response

Helping Behavior Assessment Score

2 = Child who spontaneously helps during initial 20 seconds

1 = Child who helps during the time when the experimenter is collecting pencils

0 = Child did not help at all

Comments:
Appendix E

Sharing behavior assessment

Tell child that he/she has completed all of the questionnaires.

Retrieve bag of two toys and remind child that he/she will now receive a toy for participating in the study.

Say oh no! There are only two toys left for him/her to choose from.

Look at schedule and say that there is an interview scheduled for immediately after this interview and the toy not chosen will be given to the child who is next. That child will not be able to receive the toy that he/she does take.

Make sure child understands that the toy he/she chooses directly influences which toy the next participant will receive.

When child is making a decision about which toy to take, maintain a neutral expression on your face. If the decision making process is extended, arrange completed questionnaires and place in briefcase (keep yourself busy).

After child makes choice, give him/her the chosen toy and put other one back in briefcase. Put away interview materials, so that there is some time after giving the child the single toy and giving the child the other toy.

Tell the child that he/she may now leave.

Right before child leaves, say that you just remembered that the interview scheduled after this was cancelled.

Give child both toys.

After child has left, record score and any necessary comments.

Sharing Assessment Coding:

0 = Child chooses good toy, leaving bad toy for other child
1 = Child chooses some combination of good pencil, bad notebook
2 = Child chooses bad toys, leaving good gifts for other child

Secondary sharing coding:

“Which did you want the most?” (circle)

1. Madlib OR Notebook
2. Fun pencil OR Plain pencil
Vita

Lauren Aaron attended North Carolina State University from 2003 to 2006 and received a Bachelor of Arts in Psychology in 2006. She entered graduate study at The College of William & Mary in 2008, and received her Master of Arts in Experimental Psychology in May of 2010. Lauren began her work toward a Doctor of Philosophy degree in the Fall of 2010 at the University of California-Riverside.