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Exposure to Conflict and Violence across Contexts: Relations to Adjustment among Palestinian Children

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Abstract

Despite extensive literatures on the impact on children of exposure to violence in families, neighborhoods, and peer groups, there has been relatively little effort evaluating their cumulative impact. There also has been less attention to the effects of exposure to political conflict and violence. We collected data from a representative sample of 600 Palestinian youths (three age cohorts: 8, 11, and 14 years old) to evaluate the relation of exposure to political conflict and violence, and violence in the family, community, and school, to post-traumatic stress symptoms (PTS) and aggressive behavior. Results highlight the additive effects of exposure to political conflict and violence, suggesting that interventionists should consider the full spectrum of sources of environmental risk for PTS symptoms and aggressive behavior.

Broadly speaking, exposure to violence in the social environment is a serious and significant risk factor for the development of psychopathology in children and adolescents, with studies documenting relations between violence exposure and aggression, depression, anxiety, post-traumatic stress symptoms, and academic difficulties. However, despite longstanding

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developmental theory underscoring the importance of social influences at multiple ecological levels (e.g., Bronfenbrenner, 1979; Sameroff, 1991), studies of youth violence exposure typically have focused on single ecosystems. Although there are extensive literatures on the effects on youths' mental health of family violence (e.g., Boxer, Gullan, & Mahoney, 2009; Kitzmann, Gaylord, Holt, & Kenny, 2003), community violence (e.g., Guerra, Huesmann & Spindler, 2003; Schwartz & Proctor, 2000), and school-based violence (e.g., Flannery et al., 2004), relatively less research has cut across these domains to investigate the cumulative or unique effects of specific forms of violence at multiple ecological levels (see Garbarino & Kastelny, 1996; Mrug, Loosier, & Windle, 2008; Singer et al., 1999).

Further, although studies have been conducted around the world to examine youths' adjustment to ethnic-political violence (see, for example, the 1996 special issue of *Child Development*, volume 67, issue 1), this topic has received little empirical attention in comparison to studies of exposure to violence in neighborhoods, homes, and schools. Yet the scope of this problem is quite broad: In 1996, Ladd and Cairns observed that "large numbers of children are living in societies where ethnic-political violence is a common occurrence – a fact of life" (Ladd & Cairns, 1996, p. 15). Over a decade later, little has changed. Ethnic and political conflicts are raging around the world, often erupting into extreme acts of violence. This has been the case in Israel and Palestine, where since the beginning of the second Intifada in September 2000 until the end of July 2007, at least 5,848 people have been killed as a consequence of ethnic-political violence (United Nations, August 31, 2007). In this study, we investigated the relation of exposure to political violence to psychological adjustment in a representative cross-section of 600 Palestinian children ages 8, 11, and 14. Our goal was threefold: First, we examined the relation between encounters with ethnic-political violence and aggressive behavior and post-traumatic stress symptoms. Second, we considered the unique relation of political violence to adjustment within a broader risk matrix incorporating exposure to school, community, and family violence. Third, we considered whether the relation between exposure to ethnic-political conflict and violence and maladjustment was exacerbated by exposure to violence in other contexts, or alternatively, was moderated by low levels of exposure to violence in other contexts.

Research on the Impact of Exposure to Ethnic-Political Violence

Barber (2008) described the complexities of conceptualizing ethnic-political conflict and violence, including variations in one's degree of exposure to it (e.g., type, duration, frequency, proximity), one's degree of involvement in it (e.g., passive victim, soldier), one's emotional and cognitive processing of the experience, and one's response to it. We conceptualize ethnic-political violence as comprising exposure to forms of violence *sanctioned by different influential political and social bodies based on a history of conflict between ethnic groups*. We argue that the effects of observing or experiencing *ethnic-political violence* are different from the effects of observing or experiencing other kinds of violence (see Dubow, Huesmann, & Boxer, 2009). The impact of violence on a child seems to depend on how normative, accepted, and endorsed that violence is at different levels of the child's social ecology (e.g., the child's family, peer group, larger society) as well as the kinds of attributions the child makes about the violence. These cognitions may be quite different for ethnic-political violence than for non-ethnically motivated community/criminal violence, for example, because the conflict is sanctioned by influential political leaders, is based often on long-term intractable ethnic group conflicts, and is a critical factor influencing the child's identity development (Bar Tal, 2007; Barber, 2008). For example, Barber (2008) traced Palestinian youths' identity development to a history of "personal, harsh, and debasing experiences they had with violence" (p. 306). From childhood on,

Barber described “compelling meaning systems” that influenced identity development: “history, as it grounded the struggle in its past iterations; politics, as it gave substance to the nationalistic goals of the struggle; culture, as it collected all segments of the society together in a duty-bound resistance to perceived violations of dignity and rights ... the Palestinians knew, and valued, who they were because of the abundant information that defined them” (p. 306).

Following Slone et al. (1999), we focus on the following specific types of ethnic-political conflict and violence in the Israeli-Palestinian conflict: loss of, or injury to, a friend or family member; non-violent events that disrupt one’s life (e.g., spending prolonged periods of time in a security shelter); self or significant others participating in political demonstrations; witnessing actual violence; and witnessing media portrayals of violence.

Several studies have demonstrated the damaging psychosocial effects on youth of exposure to war, terrorism, and ethnic-political violence (La Greca, Silverman, Vernberg, & Roberts, 2002; Leavitt & Fox, 1996) among children from a number of different regions of the world including Iraq (Dyregov, Gjestad, & Raundalen, 2002), Palestine (Thabet, Abed, & Vostanis, 2004), Israel (Punamäki, 1996), Bosnia (Geltman, Augustyn, Barnett, Klass, & Groves, 2000), Lebanon (Macksoud & Aber, 1996), and Rwanda (Dyregov, Gupta, Gjestad, & Mukanoheli, 2000). Such studies have shown that exposure to the extreme forms of violence exhibited during such events, and the constant threat of losing loved ones or being killed, are associated contemporaneously and longitudinally with a variety of indicators of maladjustment including post-traumatic stress symptoms, anxiety, and depression.

Ongoing ethnic-political violence provides a context in which children may be exposed to any number of specific violent acts as both witnesses and victims. Children growing up in those contexts may feel as though their safety is constantly jeopardized; their daily routines might consistently be disrupted; and they might live in constant fear regarding the safety of their families and friends. Not surprisingly, the vast majority of research on the effects of exposure to ethnic-political violence has focused on outcomes such as psychopathology (e.g., Al-Krenawi, Graham, & Sehwail, 2002; Barber, 2001; Garbarino & Kastelny, 1996; Macksoud & Aber, 1996; Punamäki et al., 2001; Rousseau, Drapeau, & Platt, 1999; Sagy, 2002; Slone, Lobel, & Gilat, 1999). Qouta, Punamäki, and El Sarraj (2008) noted that researchers are most often concerned with effects on post-traumatic stress symptoms because exposure to ethnic-political violence interferes with the child’s cognitive and emotional processing of those experiences, which can lead to intrusive memories of the events, avoidance of stimuli associated with the events, and hypervigilance. In addition, exposure to ethnic-political conflict and violence appears to be linked to the development of aggressive behavior. Qouta and El Sarraj (1992) found that of the children they studied during the First Intifada in Gaza, 38% developed aggressive behavior. Barber (2008) reported that significant numbers of Palestinian and Bosnian adolescents exposed to political violence agreed with the statement, “I am more violent.” Social-cognitive information processing models (e.g., Crick & Dodge, 1994; Huesmann, 1998) posit that violence exposure affects aggressive behavior through the development aggressive-supporting scripts and world and self-schemas, and cognitive and emotional desensitization to violence. Specifically, researchers have theorized that emotional desensitization (i.e., reduced or flattened affective arousal in response to violence) might act in concert with aggression-supporting cognition to stimulate aggressive behavior (see Carnagey, Anderson, & Bushman, 2007; Huesmann & Kirwil, 2007). For example, studies have demonstrated that children exposed to very high levels of violence in their communities show elevated aggression in the absence of emotional distress, or “pathologic adaptation” (Ng-Mak, Salzinger, Feldman, & Steuve, 2004). Such reactions might be facilitated by the gradual desensitization to and normalization of violence in the social ecology, particularly in an

environment overshadowed by ongoing, extreme ethnic-political conflict and violence. This theorizing applies equally well to the effects of ethno-political violence, community violence, school violence, and family violence.

However, substantial portions (up to 67%) of children exposed to ethnic-political violence might not, in fact, show any clinical symptoms (Sack, Clarke, & Seeley, 1996). Cairns and Dawes (1996) thus noted the distinct lack of research on subclinical conditions in children from politically violent environments. In the present investigation, we focus on two different outcome measures: symptoms of post-traumatic stress and aggressive behavior. We treat these outcomes as continuous variables rather than through dichotomized indicators of psychiatric diagnosis in order to consider a broader range of association between exposure and adjustment.

Research on the Impact of Other Forms of Violence in the Social Environment

The effects of violence exposure (i.e., *witnessing* and/or being *victimized* by violent acts at home, at school, and in the community) on child and adolescent psychosocial functioning have been intensely investigated (for reviews, see Appel & Holden, 1998; Holden, Geffner, & Jouriles, 1998; Kitzmann et al., 2003; Lynch, 2003; Osofsky, 1997; Trickett, Duran, & Horn, 2003). As the literature base is extensive, only a selection of studies is presented here. Studies have shown that exposure to physical violence is associated with a variety of negative adjustment outcomes including depression, anxiety, post-traumatic stress symptoms, academic problems, and aggression (e.g., Guerra et al., 2003; Hanish & Guerra, 2000; Mahoney, Donnelly, Boxer, & Lewis, 2003; Martinez & Richters, 1993; Nansel et al., 2001; Osofsky, 1997; Schwartz & Proctor, 2000; Slovak & Singer, 2001). Although direct victimization by violence might have a more detrimental effect than witnessing of violence (e.g., Mahoney et al., 2003), studies have shown unique and substantial effects of many different types of witnessing (Singer et al., 1999) and witnessing violence is far more prevalent than is violent victimization (Mrug et al., 2008). In the present study, we focus on the relation of witnessing different forms of violence to children's behavioral outcomes.

There has been surprisingly little effort dedicated to exploring the converging impact of multiple contexts of witnessing violence on adjustment, and consequently little theoretical guidance concerning whether multiple forms of witnessing should produce additive or interactive effects on children's adjustment. According to Bronfenbrenner's (1979) developmental model, children should be affected by violence present at multiple levels of their social ecology; relatedly, cumulative risk models imply that increased risk from multiple unique sources should be associated in a linear fashion with psychopathology (e.g., Rutter, 1979; Sameroff, 2000). These theoretical views imply that exposure to violence across many social domains simultaneously – family, neighborhood, peer group, and the broader political context – should have a greater negative impact on adjustment in comparison to exposure in only one or two domains, and that this relation might be linear and additive in nature. Given the general stress framework within which research on exposure to violence often has been conducted (see Trickett et al., 2003), an additive model might be most effective for explaining the presence of post-traumatic stress symptoms in relation to multiple context exposure. Still, Singer et al. (1999) surveyed over 2,000 7–15 year-old children and found that physical aggression was related to witnessing violence in the home, school, and neighborhood.

Recently, Mrug et al. (2008) surveyed 601 early adolescents (average age = 13 years old; 78% African American) to examine main as well as interactive effects of exposure to violence in three contexts (home, neighborhood, school) on several measures of

internalizing and externalizing symptoms. Exposure to violence at school and home were the most consistent predictors of symptoms. In addition, the authors found that the level of neighborhood violence moderated the relation between the levels of school and home violence and some symptom measures. For example, the relation between exposure to violence in the home and internalizing symptoms was stronger at *lower levels* of exposure to neighborhood violence. The authors speculated that a desensitization effect accounted for these results; that is, if high levels of violence are the norm in a community, “it takes higher levels of violence at home and at school to produce negative emotional and behavioral changes” (p. 80).

Given theoretical views on the development of aggressive behavior, one might expect to observe what could be termed protective effects in the examination of multiple contexts of witnessing violence. That is, contemporary theory on aggression holds that the learning and habitual maintenance of aggression is most likely when aggressive behavior can be observed across multiple social domains (e.g., home, school, community; see Guerra & Huesmann, 2004; Huesmann, 1998). Thus the *absence* of violence in most domains might be protective against the negative impact of violence in one domain. Alternatively, witnessing violence across multiple contexts might produce a nonlinear effect on outcomes such that each additional context of exposure multiplicatively increases the tendency for poor outcomes.

Only a few studies that have examined exposure to violence across multiple contexts included exposure to ethnic-political violence. Garbarino and Kostelny (1996) examined family-level risk variables (i.e., physical violence directed at the child; marital violence; verbal aggression; maternal depression and perceived incompetence) along with ethnic-politically violent Intifada events in their checklist of cumulative risks for Palestinian children. Those researchers found that clinical levels of behavioral pathology were most likely to be exhibited by children who had experienced both sets of risks. Relatedly, Haj-Yahia and Abdo-Kaloti (2003) observed a significant correlation between family violence (inter-parental as well as parent-to-child) and political stressors (including injuries resulting from politically violent events). It is likely that exposure to multiple contexts of violence affects other processes that contribute to adjustment. Thus, it is important to examine exposure to violence across multiple contexts to understand the processes that might erode potential protective factors.

The Present Study

Our data are based on a representative sample of 600 children (200 in each of three age groups: 8, 11, and 14 years of age) in Palestine. First we present descriptive statistics of the children’s exposure to conflict and violence across contexts (i.e., political, community, family, and school) and indices of their adjustment (i.e., symptoms of post-traumatic stress and aggression). Second, we examine correlations of the exposure to conflict and violence variables with the adjustment indices. Next, we examine the joint contributions of exposure to violence across contexts in predicting adjustment. We expect that exposure to conflict and violence across contexts make unique contributions to predicting symptoms of post-traumatic stress symptoms and aggression among these children. We expect to find unique effects of exposure to ethnic-political conflict and violence, independent of the effects of exposure to conflict and violence in the other contexts. Finally, we predict that the relation between exposure to ethnic-political conflict and violence and maladjustment is exacerbated by exposure to violence in other contexts, or alternatively, is moderated by low levels of exposure to violence in other contexts. We also examine sex and age differences in exposure to violence and rates of aggressive behavior and post-traumatic stress symptoms, as well as the potential moderating effects of sex and age on the relation between violence exposure and adjustment outcomes. Following Rutter, Caspi, and Moffitt (2003), we anticipated

differential sensitivity by sex to violence exposure and sex differences in rates of adjustment problems. Consistent with views advanced by many scholars (e.g., Steinberg & Avenevoli, 2000), we expected to observe differential vulnerabilities by age to experiences with violence and the expression of adjustment problems.

Method

Sampling Procedures

The data are part of the initial wave of an ongoing longitudinal study of the effects of exposure to conflict and violence on mental health on three cohorts (ages 8, 11, and 14) of youths growing up in the Middle East. The data reported here focus on the initial wave of data collected on the Palestinian sample, a representative sample of 600 children: 200 8-year olds (101 girls, 99 boys), 200 11-year olds (100 girls, 100 boys) and 200 14-year olds (100 girls, 100 boys) and one of their parents (98% were mothers).

On the basis of census maps of the West Bank and Gaza provided by the Palestinian Central Bureau of Statistics, residential areas were sampled proportionally to achieve a representative sample of the general population. First, Palestinian areas were divided into two areas: West Bank (64% of the sample) and Gaza Strip (36% of the sample), and counting areas were divided according to size. One hundred counting areas were selected randomly. In each counting area, a sample was selected whereby six children would be interviewed, three males and three females divided equally over the three ages under examination. Houses in each counting area were divided to allow random selection of 6 homes. In the first home, an interview could be conducted with any one of the six types of children needed; if there was more than one child who fit the description, one was selected using Kish Household Tables. In the second house, the age/gender type of child selected in the previous house would be excluded and so the choices would become five, rather than six, and so on. The total number of families that declined to be part of the sample was 61; the rejection rate was therefore 10%. Staff from the Palestinian Center for Policy and Survey Research conducted the sampling and then the interviews.

Consent and Interview Procedures

The research protocol was approved by the University of Michigan's Institutional Review Board (Behavioral Sciences). Potential participants were told that the study concerned the effects of ethnic-political conflict on children and their families, assessments would take approximately one hour, and one parent and one child would be asked to participate. The voluntary and confidential nature of the study was emphasized. Written parent consent and child assent were obtained, which included a description of the study, the fact that participation was voluntary and could be ended at any time, and that participation would remain confidential. The family was compensated at the rate of \$25 for the one-hour interview. The interviews of the parent/child were conducted in the families' homes separately and privately; the interviewers read the surveys to the respondents, who indicated their answers which were then recorded by the interviewer. Interviewers worked in pairs; one interviewed the parent and one interviewed the child.

Measures

Demographic information—Parents responded to standard questions to assess demographic characteristics (e.g., age, gender, religious affiliation). To assess indices of socioeconomic status, parent education was coded as follows: 1 = illiterate to 10 = doctorate or law degree. For income, parents were asked, "The average Palestinian income is \$564/month. Is your income: 1 = below average to 5 = way above average." The income question was worded in this manner rather than as a direct request for a family's income level

because it is standard practice to word the income question in this manner in Palestine, according to the Palestinian Center for Population and Survey Research (the organization that conducted the interviews).

Exposure to Political Conflict and Violence—Parents of 8-year olds reported on their children’s exposure to political conflict and violence, whereas 11- and 14-year old children provided self-reports of their exposure to political conflict and violence.¹ The exposure to political conflict and violence scale includes 24 items adapted from Slone et al. (1999) ($\alpha=.79$ for parent report; $\alpha=.79$ for self-report). Respondents indicated the extent to which the child experienced the event in the past year along a 4-point scale (0 = never to 3 = many times). The 24 items comprise the following domains of political conflict and violence events: loss of, or injury to, a friend or family member (5 items, $\alpha=.58$ for parent report, $\alpha=.53$ for self-report; e.g., “Has a friend or acquaintance of yours been injured as a result of political or military violence?”); non-violent events (6 items, $\alpha=.43$ for parent report, $\alpha=.50$ for self-report; e.g., “How often have you spent a prolonged period of time in a security shelter or under curfew?”); self or significant others participated in political demonstrations (3 items, $\alpha=.52$ for parent report, $\alpha=.67$ for self-report; e.g., “How often have you known someone who was involved in a violent political demonstration?”); witnessed actual violence (4 items, $\alpha=.48$ for parent report, $\alpha=.52$ for self report; e.g., “How often have you seen right in front of you Palestinians being held hostage, tortured, or abused by Israelis?”); and witnessed media portrayals of violence (6 items, $\alpha=.83$ for parent report, $\alpha=.72$ for self-report; e.g., “How often have you seen video clips or photographs of injured or martyred Palestinians on stretchers or the ground because of an Israeli attack?”). Because of the significant correlations among the five domains of exposure to political conflict/violence (r s ranged from .18–.56, median $r = .32$), we used a total score that reflects the average of the responses to all 24 items.

Exposure to Community Violence—The exposure to community violence scale includes 4 items taken from Attar, Guerra, and Tolan (1994) and Barber (1999) ($\alpha=.54$)². Although the original measure included more items, we deleted items that were not specific enough to distinguish between non-ethnic “community or neighborhood violence” and ethnic-political conflict/violence (e.g., “How often have you had to hide someplace because of gunfire in your neighborhood?”; “How often have you been afraid to go outside, or have your parents made you stay inside, because of violence in you neighborhood?”). Thus, our items assessing “community violence” are not confounded with violence in the community that is clearly ethnic-political violence. Children responded to each item indicating the extent to which they experienced each event in the past year along a 4-point scale (0 = never to 3 = many times). Sample items included: “How often has someone in your family been robbed or attacked by another Palestinian?” “How often have you seen or heard a violent

¹Parents of 8 year-olds provided reports of their children’s exposure to ethnic-political conflict, but older children (11 and 14 year-olds) provided self-reports. We followed this strategy for two reasons. First, our Institutional Review Board had concerns about the 8 year-olds’ emotional reactions to reporting on their exposure to this type of conflict and violence. Second, given the time constraints of the interviews with young children, having parents report on these 24 items decreased the length of the interview for 8 year-olds. We computed several analyses to address the extent to which this was problematic. First, we examined whether reports of exposure to ethnic-political conflict and violence increased with age, as has been found in other research. Indeed, even though parents provided the reports for 8 year-olds and 11 and 14 year old children provided self reports, we found the expected significant increases in exposure between each age level. Next, we re-ran the regression analyses controlling for reporter, and found exactly the same results in the significance of our beta weights for exposure to conflict and violence across contexts. Finally, exposure to ethnic-political conflict and violence did not interact significantly with age in predicting either post-traumatic stress symptoms or aggression.

²Although the alphas for witnessing community violence are low by conventional standards, it should be emphasized that as event checklists these measures should not be expected to produce high internal reliability. The alpha coefficient assumes some underlying individual difference characteristic producing item covariation. There is not necessarily a basis for expecting that exposure to one form of violence in the community will increase the likelihood of exposure to another form of violence in the community (see, e.g., Netland, 2001).

argument between your neighbors?” Because the measure was positively skewed, we applied a log transformation.

Exposure to School Conflict and Violence—The exposure to school conflict and violence scale includes 3 items taken from Attar et al. (1994) ($\alpha=.67$). Children responded to each item indicating the extent to which they experienced each event in the past year along a 4-point scale (0 = never to 3 = many times). Sample items included: “How often have you seen violent physical fights between other kids at school or before or after school?” “How often have you seen a kid attacking another kid to take something from them at school or before or after school?” Because the measure was negatively skewed, we computed a reverse-score and then applied a log transformation.

Exposure to Inter-adult Family Conflict and Violence—We used a single item adapted from Attar et al. (1994) to which children responded along a 4-point scale (0 = never to 3 = many times): “How often have you seen or heard a violent argument between your adult relatives?”

Children’s adjustment

1) Symptoms of post-traumatic stress—Children completed 9 items ($\alpha=.70$) from the *Child Post Traumatic Stress Symptoms Index* (Pynoos, Frederick, & Nader, 1987). The items follow the criteria listed in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000) for post traumatic stress disorder. The scale was administered immediately after the exposure to conflict and violence items, using the following instructions: “I will read to you a list of the feelings and thoughts that kids might have when they have seen or heard about very bad, scary, violent, or dangerous things like we just asked you about. Tell me how often you had these feelings and thoughts in the past month. Tell me if you had these thoughts or feelings never, hardly ever, sometimes, or a lot.” We chose three items from each of three symptom subscales: re-experiencing the event (e.g., “You have upsetting thoughts, pictures, or sounds of what happened come into your mind when you do not want them to.”); avoidance of stimuli associated with the event (e.g., “You try not to talk about, think about, or have feelings about what happened.”); and increased arousal (e.g., “When something reminds you of what happened, you have strong feelings in your body like heart beating fast, head aches, or stomach aches.”). The measure has been used with children ages 6–16, and has been administered youth in the Middle East (e.g., Thabet et al., 2004; Wolmer, Laor, Gershon, Mayes, & Cohen, 2000).

2) Aggression—Three measures were used to assess children’s aggression:

- a. A modified version of the *Peer Nomination of Aggression Inventory* (Eron, Walder, & Lefkowitz, 1971) was administered as a self-report measure for children. The 10 items ($\alpha=.80$) are based on the original peer-rated index of general aggressive behavior. Children provided ratings on a 4-point scale ranging from 0= “Never” to 3= “Almost always” on items measuring *verbal* aggression (e.g., “How often do you say mean things?”), *physical* aggression (e.g., “How often do you push or shove other people/kids?”), *indirect* aggression (e.g., “How often do you make up stories and lies to get others into trouble?”), and *acquisitive* aggression (e.g., “How often do you take others’ things without asking?”). Because the measure was positively skewed, we applied a log transformation.
- b. Children were administered the 4 item ($\alpha=.57$) *Severe Physical Aggression scale* (Huesmann, Eron, Lefkowitz, & Walder, 1984; Lefkowitz, Eron, Walder, & Huesmann, 1977). Respondents indicated how often in the last year they had engaged in each behavior in the past year along a 4-point scale (0 = never to 3 = 5 or

more times). Sample items were: “How often have you punched or beaten someone?” and “How often have you choked someone?” Because the measure was positively skewed, we applied a log transformation.

- c. Parents reported on their children’s aggression using the 20-item aggression scale ($\alpha=.89$) from the Child Behavior Checklist (Achenbach & Edelbrock, 1983). Parents rated the extent to which their child displayed each problem within the past 6 months (e.g., “argues a lot,” “threatens people,” “gets in many fights”) on a 3-point scale (i.e., 0= “Not true (as far as you know),” 1= “Somewhat or sometimes true,” and 2= “Very true or often true”). Because the measure was positively skewed, we applied a log transformation.

Using the AMOS 7.0 program, we applied latent variable modeling to estimate a score for aggressive behavior integrating information across self and parent reports (see Boxer, Huesmann, Bushman, O’Brien, & Mocerri, 2009). The AMOS program estimates the measurement parameters that best represent the correlations among the variables making up the composite ($df = 0$). The program subsequently generates via regression imputation new variables for the latent factor scores. The computed composite was based on the following factor score weights: $.004 \times \text{parent-reported child behavior checklist-aggression} + .037 \times \text{self-reported general aggression} + .075 \times \text{self-reported severe physical aggression}$. Because our purpose was solely to derive a reliable cross-informant composite, we did not constrain any parameters as the function of subgroups within the overall sample. As shown below in Table 1, sex and age differences on the latent factor score were apparent in predictable directions (boys more aggressive than girls; adolescents more aggressive than children).

Results

Descriptive Statistics

Demographics—One hundred percent of the parents reported their religion as Muslim and 99% were married. One-third of the parents reported having at least a high school degree; and 47% reported their incomes as below the Palestinian average, 33% reported it as average, and 20% reported it as above average. Parents reported that on average, there were 4.89 ($SD = 1.86$) children in the home. These statistics are representative of the general population of Palestinians based on the 2007 census (Palestinian Central Bureau of Statistics, 2008).

Exposure to violence—Most of the children were exposed to conflict and violence across contexts at least once during the past year. In terms of exposure to political conflict and violence, 61% experienced a loss of, or injury to, a friend or family member; 73% experienced a non-violent event; 88% indicated that the self or significant others participated in political demonstrations; 73% witnessed actual violence; and 99% witnessed media portrayals of political violence. In terms of exposure to conflict and violence in other contexts, at least once in the past year, 91% reported having witnessed violence at school, 89% reported having witnessed violence in the community, and 68% saw or heard a violent argument between their adult relatives.

Post-traumatic stress symptoms—Over 20% of the children indicated that they experienced 6 of the 9 items “a lot” (the highest point on the scale); over one-third of the children indicated they experienced 8 of the 9 items “sometimes” or “a lot.”

Aggressive behavior—On the Children’s Behavior Checklist, parents of 27% of the children indicated that on average the items were “somewhat true” or “very true” of their children; on the modified self-report version of the *Peer Nomination of Aggression*

Inventory, 22% of the children indicated that on average they engaged in the behaviors at least “sometimes”; and on the *Severe Physical Aggression* measure, 33% indicated that on average they engaged in the behaviors at least once in the past year.

Sex and Age Differences

Table 1 shows the means and standard deviations of the key variables, and ANOVA results for sex and age differences in the variables. Significant ANOVA results for age were followed with post-hoc contrasts among the three age levels. As this table shows, boys were exposed to significantly higher levels of total ethnic-political, community, and school conflict and violence than were girls; however, they were no sex differences in exposure to inter-adult family conflict/violence. Boys also displayed significantly higher levels of aggression than did girls. However, girls reported higher levels of symptoms of post-traumatic stress than did boys.

In terms of age differences, Table 1 shows that 14-year-old children reported higher levels of exposure to conflict/violence than 8-year-olds across all contexts with 11-year-olds generally in the middle. Although there were no age differences in symptoms of post-traumatic stress, the 11 and 14 year-olds exhibited higher levels of aggression than the 8 year-olds.

Correlations between Exposure to Conflict and Violence and Children’s Adjustment

Table 2 shows the correlations between exposure to conflict and violence and adjustment. There is a consistent pattern of significant but modest correlations between exposure to conflict/violence and adjustment. All eight of the correlations (four contexts of conflict/violence \times 2 adjustment indices) are significant, with r s ranging from .12 to .26 (median $r = .20$).

Examining the Joint Contributions of Exposure to Conflict/Violence across Contexts to Predicting Children’s Adjustment

Two sets of hierarchical regressions were computed to examine the joint contributions of exposure to conflict/violence across contexts to predicting children’s symptoms of post-traumatic stress (Table 3) and to predicting aggression (Table 4). In each regression, we entered demographic variables (child’s sex, child’s age, parent income, average level of parents’ education, and sub-region—West Bank or Gaza) in Step 1. Next, in Step 2, we entered exposure to conflict/violence in each of the four contexts (ethnic-political, community, school, family). Finally, we computed blocks of interaction terms separately in Step 3. Specifically, we re-computed Step 3 three times: a) for the block of interactions of each exposure to conflict/violence variable with sex; b) for the block of interactions of each exposure to conflict/violence variable with age; and c) for the block of interactions of exposure to ethnic-political conflict/violence with each other exposure to conflict/violence variable. In these regression analyses, we followed Aiken and West (1991) and Holmbeck (2002), who recommended centering the individual variables entering into interaction terms prior to computing the multiplicative terms in order to reduce the multicollinearity among the predictor terms. For any significant moderation effect, we computed simple slopes of the regression lines predicting aggression at each level of the moderator.

Predicting symptoms of post-traumatic stress—Table 3 shows that the set of demographic variables entered in Step 1 accounted for significant variance in predicting post-traumatic stress symptoms (7% of the variance; girls and children in Gaza reported higher levels of symptoms). In Step 2, exposure to political conflict/violence, school conflict/violence, and inter-adult family conflict/violence made unique contributions to predicting symptoms of post-traumatic stress while community violence had no independent

effect. The set of exposure to conflict/violence variables accounted for 14% additional variance. In Step 3a, we examined whether sex moderates the effects of the four exposure contexts taken together on post-traumatic stress symptoms. It did not. In Step 3b, we examined whether age moderates the effects of the four exposure contexts taken together on post-traumatic stress symptoms. It did not. In Step 3c, we examined whether there were significant interactive effects on post-traumatic stress symptoms between exposure to ethnic-political conflict/violence and conflict/violence in any of the other contexts taken together. There were not.

Predicting aggression—Table 4 shows that the set of demographic variables entered in Step 1 accounted for a significant portion of the variance in aggression (11% of the variance; boys and older children exhibited higher levels of aggression). In Step 2, exposure to political conflict/violence and community conflict/violence made unique contributions to predicting aggression while school and family violence had no independent effects. The set of exposure to conflict/violence variables accounted for 5% additional variance. In Step 3a, we examined whether sex moderates the effects of the four exposure contexts taken together on aggression. There was a trend toward significance ($p < .10$) for sex moderating the relation between inter-adult family conflict/violence and aggression -- for females, exposure to inter-adult family conflict was significantly related to aggression ($\beta = .20, p < .01$), but not for males. In Step 3b, we examined whether age moderates the effects of the four exposure contexts taken together on aggression. It did not. In Step 3c, we examined whether there were significant interactive effects on aggression between exposure to ethnic-political conflict/violence and conflict/violence in any of the other contexts taken together. There were not.

Discussion

In this investigation, we collected data on the exposure of 600 8 to 14-year-old Palestinian children to political conflict and violence and other violence in different contexts. We also collected data on their post-traumatic stress symptoms and aggressive behavior. Our aims were to evaluate the relation of exposure to political violence to post-traumatic stress (PTS) symptoms and aggressive behavior, and to examine the unique, additive, and interactive effects of exposure to political violence on adjustment within a broader risk matrix that also included exposure to community, family, and school violence.

First, we children in our sample were, not surprisingly, exposed to a large amount and variety of political conflict and violence (e.g., 73% witnessed actual political violence and 99% witnessed political violence through media reports). Exposure to political conflict and violence was a significant predictor of PTS symptoms, even after controlling demographic factors and exposure to other forms of violence in the social ecology. Although exposure to violence in schools and in the family also contributed significant unique variance to PTS symptoms, these forms of exposure did not moderate the effects of exposure to political violence. Sex and age also did not interact with exposure to political violence when predicting PTS symptoms simultaneously with other types of exposure. Effect sizes in regressions computed separately by sex for political violence on PTS symptoms were almost exactly the same for males and for females (.18 for each) and varied only slightly with age (.16 for 8 year-olds, .25 for 11-year-olds, and .15 for 14 year-olds). These observations suggest that with respect to PTS, experiences with political violence accrue as unique, additive effects on adjustment. Our findings are consistent with a recent large scale school-based screening ($N=2100$) of Palestinian youth living in the West Bank and Gaza showing that experiences with Israeli occupation were linked to PTS symptoms and related internalizing difficulties (Abdeen, Qasrawi, Nabil, & Shaheen, 2008) and underscore the potential for focusing on ongoing political violence exposure as a critical form of trauma.

The relation of exposure to political violence to aggressive behavior was positive but less significant than the relation to PTS symptoms. Although the correlation between ethnic-political violence and aggression was highly significant, controlling for the effects of demographic variables and exposure to other forms of violence in the regression analyses made the relation less significant or only marginally significant depending on the terms in the regression equation. Again, neither sex nor age interacted significantly with any of the exposure to violence measures to predict aggression simultaneously with other types of exposure. However, in regressions computed separately by sex and by age, the effect sizes for the effects of political violence on aggression were quite different for males and females ($\beta = .01$, for females; $\beta = .18$, for males; this difference was significant at $p < .05$ per the Cohen & Cohen [1983, p. 111] test for comparing unstandardized coefficients), and somewhat so for the three age groups ($\beta = -.02$, for 8-year-olds; $\beta = .23$, for 11-year-olds; and $\beta = .13$, for 14-year-olds; unstandardized coefficients for 8 year olds and 11 year olds were significantly different at $p < .05$). Thus, whereas exposure to political violence seems to relate to PTS symptoms about equally for males and females and all age groups examined in this study, exposure to political violence seems to have almost no relation to aggression in females or in 8-year-olds. Males seem to be more affected, with early adolescents possibly at more elevated risk in comparison to younger children.

Aggressive behavior might be more sensitive to proximal learning experiences and observational learning experiences in which the observer can identify with the aggressive model (Huesmann, 1998). The majority of perpetrators of political violence in Palestine are likely to be male. Contemporary theory and research on the development of youth aggression indicates that habitual aggression is more likely when children identify with aggressive models (Guerra & Huesmann, 2004), and that aggression in peer groups is a robust socialization mechanism for increased aggression over time (Espelage, Holt, & Henkel, 2003). Additionally, aggression is more normative and acceptable for males than for females in Palestine; so females are more likely to inhibit aggressive inclinations stimulated by observed violence. Still, of course, more research is warranted on the interactive effects of political violence with gender, age, and other forms of violence in a child's social ecology.

The results of this study represent advances to the literature on how exposure to violence might affect youths' mental health outcomes. This study highlights the potentially detrimental impact of exposure to political conflict and violence on two broad classes of youths' psychological adjustment (PTS symptoms and aggression), although our data support stronger inferences of impact with respect to PTS symptoms. As noted earlier, political conflict and violence are persistent ecological stressors for children not only in the Palestinian territories but in many other parts of the world as well. Though there has been significant media attention directed to the Middle East, there is a dearth of systematic research on youths' mental health issues in Palestine (for an important exception, see the 2008 special issue of the *International Journal of Behavioral Development*). Whereas published studies on the negative impact of violence in the family, neighborhood, and peer group are common, the current study adds to our knowledge on the psychological sequelae of exposure to political conflict and violence.

We observed that experiences with political conflict and violence account for significant variance in adjustment (particularly PTS symptoms) even after controlling salient demographic factors as well as the effects of exposure to violence in other domains of the social ecology. This highlights the fundamental notion that exposure to violence is not a monolithic construct and that exposure in different domains of the social ecology can account differentially for variation in mental health outcomes. Considering the simultaneous impact of multiple forms of exposure to violence is an important emerging direction in the

literature, and recent studies have shown that exposure to a greater number of discrete forms of violence results in poorer adjustment for youth (e.g., Mrug et al., 2008). More research is needed to examine this issue longitudinally and unpack the internal mediating mechanisms (e.g., cognitive or emotional processes; see Boxer et al., 2008) that account for the specific effects of discrete forms of exposure across contexts.

We were limited in this investigation by a few different aspects of our design. First, our data are cross-sectional, and estimating the relation of adjustment to violence exposure has some caveats in the absence of a longitudinal design. For example, Richards and her colleagues have observed that youth with elevated antisocial behavior are more likely over time to encounter violence in the community than are youth with lower levels of antisocial behavior (Richards et al., 2004). Second, although our observations with respect to exposure to political violence exposure supported our hypotheses and were consistent with the extant literature, relying on parent reports of younger children's exposure and self-reports of older children's exposure is an adequate but not optimal approach. Third, we maintained an explicit focus on examining children's witnessing of violence, and not their victimization by it. This was appropriate given our interest in observational learning, but future studies should incorporate these different methods of exposure to political violence as others have done with regard to family and community violence (e.g., Boxer, Gullan et al., 2009; Schwartz & Proctor, 2000). Fourth, although our measure of exposure to political violence was extensive, we employed shorter measures of other forms of violence exposure. Future research should incorporate better elaborated measures of witnessing violence in other social domains. Further, not modeling behavior-genetic effects and accounting for cross-generational relations can temper conclusions regarding the role of family violence in youth adjustment (Dubow, Huesmann, & Boxer, 2003). However, given that many of the items on our political violence measure represent phenomena largely out of the control of individual youth, this study does appear to support the conclusion that youth are detrimentally impacted by their experiences with political conflict and violence.

Implications for Research, Practice, and Policy

Although the sample for our investigation was drawn from a region of the world with intense and persistent exposure to political conflict and violence, ethnic and political conflicts are present in many other regions as well and easily viewable just about anywhere through media sources. In addition to setting a basis for more research on the impact of violence exposure across settings in conflicted areas of the globe, the current study suggests that it could be useful to explore the impact of news media portrayals of political violence on youth. This might be particularly important given that the majority of studies of media violence effects have focused on violence portrayed in the entertainment media (Anderson et al., 2003). Measuring and examining the unique additive and interactive effects of violence experienced across social ecological contexts is a critical direction for future research.

From a clinical standpoint, these results underscore the utility of considering the full spectrum of potential exposure to violence with respect to understanding the various sources of environmental risk for PTS symptoms and aggressive behavior. For example, though a child might present to a mental health practitioner due to a recent traumatic exposure in one domain, experiences with violence in other contexts might be exacerbating his or her difficulties and require clinical attention as well. Our results in a sample of Palestinian youth suggest only modest trends in variation in the impact of violence exposure as the function of sex or age, but point especially to PTS symptoms as the key area of adjustment most consistently affected by political violence in particular. These broader conclusions permit a clear focus on PTS symptoms and an intervention approach not limited by sex- or age-specific need. Best-practice approaches are available for treating PTS symptoms, such as the field-tested package *Psychological First Aid* (Vernberg et al., 2008). Although such

approaches typically focus on symptom relief in the aftermath of single, large-scale events (see LaGreca, 2008, for review), they appear flexible enough to address symptoms in the context of ongoing traumatic stressors. It also should be noted here that we replicated the often observed link between exposure to community violence and aggressive behavior (Guerra et al., 2003). Treatments for PTS symptoms could impact aggression as well, given common underlying features such as emotion dysregulation, but clinicians working with children exposed to community violence also might consider best-practice approaches for dealing with aggression such as social-cognitive problem-solving skills training or behavioral family therapy (see Boxer & Frick, 2008, for review).

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Table 1
Descriptive Statistics and ANOVA Results for Sex and Age Differences in the Major Study Variables

Variable	M	SD	Sex effects		Age effects	
			F-value/Partial η^2	Sex differences	F-value/Partial η^2	Age differences
Context of exposure to conflict/violence						
Political	1.07	.37	$F = 62.69^{***}$, $\eta^2 = .10$	B > G	$F = 29.90$, $\eta^2 = .09$	14 > 11 > 8
Community	.78	.58	$F = 13.16^{**}$, $\eta^2 = .02$	B > G	$F = 12.23^{**}$, $\eta^2 = .04$	14 > 11 & 8; 8 = 11
School	2.31	.76	$F = 37.20^{***}$, $\eta^2 = .06$	B > G	$F = 5.74^*$, $\eta^2 = .02$	14 > 8; 8 = 11; 11 = 14
Family	1.34	1.15	$F = .62$, $\eta^2 = .00$		$F = 6.38^*$, $\eta^2 = .02$	14 > 8; 8 = 11; 11 = 14
Aggression (composite) ^a	.00	.01	$F = 28.36^{***}$, $\eta^2 = .05$	B > G	$F = 19.71^{**}$, $\eta^2 = .06$	11 = 14 > 8
Post-traumatic stress	1.39	.60	$F = 25.44^{***}$, $\eta^2 = .04$	G > B	$F = .19$, $\eta^2 = .00$	

Note. Means and standard deviations are based on raw scores of the variables. However, the ANOVAs were computed using log-transformed values for those variables that required this transformation.

^a Aggression is a composite score derived through latent variable measurement modeling of three manifest variables. Individual scores for the three measures were standardized, multiplied by factor weights observed in the measurement model, and then averaged to create the Aggression composite.

*** $p < .01$.

* $p < .05$.

Table 2

Correlations among Exposure to Conflict/Violence across Contexts and Adjustment for the Overall Sample

	<u>Exposure context for conflict or violence</u>			
	Political	Community	School	Family
Exposure context for conflict or violence				
Political				
Community	.41**			
School	.28**	.29**		
Family	.31**	.45**	.18**	
Post-traumatic stress	.18**	.17**	.25**	.22**
Aggression	.26**	.26**	.12**	.16**
				.05

^a Aggression is a composite score derived through latent variable measurement modeling of three manifest variables. Individual scores for the three measures were standardized, multiplied by factor weights observed in the measurement model, and then averaged to create the Aggression composite.

**

 $p < .01$.

Table 3
 Hierarchical Regressions: Predicting Post-Traumatic Stress Symptoms from the Demographic Variables and the Exposure to Conflict/Violence Variables

Predictors	Step 1	Step 2	Step 3a	Step 3b	Step 3c
Step 1: Demographic variables					
Sex (β) ^a	-.19**	-.31**	-.31**	-.31**	-.32**
Age (β) ^b	-.02	-.12**	-.11**	-.12**	-.11**
Parent income ^c (β)	.05	.03	.02	.02	.02
Parent education ^d (β)	-.09	-.07†	-.06	-.06	-.06
Sub-region ^e (β)	.15**	.08*	.08*	.08*	.08*
Step 2: Exposure to conflict/violence					
Political conflict/violence (β)		.18**	.19**	.18**	.19**
Community conflict/violence (β)		.01	.01	.01	.01
School conflict/violence (β)		.25**	.24**	.26**	.24**
Family conflict/violence (β)		.13**	.14*	.14**	.13**
Step 3: Interactions ^f					
3a. Exposure context by sex					
Political by sex (β)			-.04		
Community by sex (β)			-.05		
School by sex (β)			-.04		
Family by sex (β)			.02		
3b. Exposure context by age					
Political by age (β)				-.05	
Community by age (β)				.07	
School by age (β)				.01	
Family by age (β)				-.05	

Predictors	Step 1	Step 2	Step 3a	Step 3b	Step 3c
<i>3c. Exposure among contexts</i>					
Political by community (β)					-.01
Political by school (β)					-.06
Political by family (β)					.02
ΔR^2	.07	.14	.01	.01	.00
F-value for step	$F_{(5,591)} = 8.35^{***}$	$F_{(4,587)} = 26.13^{***}$	$F_{(4,583)} = 1.14$	$F_{(4,583)} = .92$	$F_{(3,584)} = .87$

^a Sex was dummy coded (-1 = female, +1 = male).

^b Age was dummy coded -1 = 8, 0 = 11, +1 = 14).

^c Parental income was coded as follows: 1 = below average to 5 = way above average.

^d Parental education was the average of the two parents' levels of education: 1 = illiterate to 10 = doctorate or law degree.

^e Sub-region was coded as follows: 1 = West Bank, 2 = Gaza.

^f Step 3 was repeated three times. Step 3a included the set of interactions of each exposure to conflict/violence variable with sex. Step 3b included the set of interactions of each exposure to conflict/violence variable with age. Step 3c included the set of interactions of exposure to political conflict/violence with each other exposure to conflict/violence variable.

** $p < .01$.

* $p < .05$.

† $p < .10$.

Table 4
 Hierarchical Regressions: Predicting Aggression from the Demographic Variables and the Exposure to Conflict/Violence Variables

Predictors	Step 1	Step 2	Step 3a	Step 3b	Step 3c
Step 1: Demographic variables					
Sex (β) ^a	.21**	.16**	.16**	.16**	.16**
Age (β) ^b	.24**	.18**	.18**	.18**	.19**
Parent income ^c (β)	-.03	-.03	-.03	-.02	-.03
Parent education ^d (β)	-.03	-.02	-.02	-.02	-.02
Sub-region ^e (β)	-.03	-.08 [†]	-.08*	-.08 [†]	-.08 [†]
Step 2: Exposure to conflict/violence					
Political conflict/violence (β)		.09 [†]	.09 [†]	.09*	.09 [†]
Community conflict/violence (β)		.16**	.18**	.16**	.16**
School conflict/violence (β)		-.02	-.02	-.02	-.03
Family conflict/violence (β)		.05	.04	.04	.04
Step 3: Interactions ^f					
3a. Exposure context by sex					
Political by sex (β)			.06		
Community by sex (β)			-.07		
School by sex (β)			-.01		
Family by sex (β)			-.08 [†]		
3b. Exposure context by age					
Political by age (β)				.02	
Community by age (β)				-.05	
School by age (β)				-.01	
Family by age (β)				.01	
3c. Exposure among contexts					
Political by community (β)					.02
Political by school (β)					-.07
Political by family (β)					.02
ΔR^2	.11	.05	.01	.00	.00

Predictors	Step 1	Step 2	Step 3a	Step 3b	Step 3c
F-value for step	$F_{(5,591)} = 13.81^{***}$	$F_{(4,587)} = 7.97^{***}$	$F_{(4,583)} = 2.39^{\dagger}$	$F_{(4,583)} = .41$	$F_{(3,584)} = .85$

^a Sex was dummy coded (-1 = female, +1 = male).

^b Age was dummy coded (-1 = 8, 0 = 11, +1 = 14).

^c Parental income was coded as follows: 1 = below average to 5 = way above average.

^d Parental education was the average of the two parents' levels of education: 1 = illiterate to 10 = doctorate or law degree.

^e Sub-region was coded as follows: 1 = West Bank, 2 = Gaza.

^f Step 3 was repeated three times. Step 3a included the set of interactions of each exposure to conflict/violence variable with sex. Step 3b included the set of interactions of each exposure to conflict/violence variable with age. Step 3c included the set of interactions of exposure to political conflict/violence with each other exposure to conflict/violence variable.

** $p < .01$.

* $p < .05$.

[†] $p < .10$.