Does War Beget Child Aggression? Military Violence, Gender, Age and Aggressive Behavior in Two Palestinian Samples

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INTRODUCTION

Children and adolescents living in war-zones are sometimes described as a lost generation, aggressive and revengeful. Empirical evidence substantiating the claim about aggressiveness among war-traumatized children is, however, scarce and conflicting. Instead, anecdotal arguments are numerous, based on the intuitive view that the human mind is a reflection of outside reality—when you live with violence, you become violent yourself, too. This kind of “reflection theory” is generally considered invalid in child development. On the contrary, environmental experiences are mediated through culturally agreed meanings and symbols [Vygotsky, 1978] and personality, activity and coping capacity of the person [Lazarus, 1993]. Also in life-endangering conditions of war and military violence, various moderating factors related to the child, family and community protect mental health, and explain considerable differences in children’s vulnerability to traumatic events [Pfefferbaum, 1997; Punamäki, 2002]. Finally, the belief that war violence begets individual aggression is based on the implicit logic that revenge and animosity determine the victims’ responses. Yet, alternative responses are also possible, as are illustrated by the international peace movement, the Japanese Hibacusas group and the South African Truth and Reconciliation committee.

In the Palestinian community, however, parents and teachers have expressed deep concern about the developmental consequences of constant life threat, military violence and destruction. They especially worry about children’s aggressive behavior. Therefore, two important questions are, whether aggressive responses are more common among Palestinian

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children exposed to severe military violence and whether good parenting can protect exposed children from aggressive development? Palestinian children have been the targets of killing, beating and detention by the Israeli army and they have witnessed destruction and fighting [B'Tselem, 1998; Human.Right.Watch, 2004]. Fortunately, there has been some variation in the intensity of military violence in the Gaza Strip, which allowed us to examine the violence as a risk for aggressive behavior in two military-political contexts differing in the levels of life threat and destruction.

The discussion of war begetting child aggression has concentrated on developmental risks for physical fighting, although the concept of aggression is more comprehensive. Traditionally, aggression is conceptualized as a behavior intended to injure someone physically or psychologically [Berkowitz, 1993; p 3], which may take different forms. Reactive aggression involves overt and often physical action of harming with angry outbursts in response to actual or perceived provocations. Proactive aggression does not require provocation or anger, but it is used to reach other goals though violent means [for review, see Archer and Coyne, 2005; Little et al., 2003]. Aggressive behavior may also be direct or indirect. In school settings, for instance, direct aggression often involves hitting or cursing at peers or destroying their property. Indirect aggression involves using social manipulation and intriguing to inflict suffering, ridicule and to exclude others [Björkqvist et al., 1992; Lagerspetz et al., 1988].

Despite substantial overlap between reactive and proactive aggression \( r = .70; \) Vitaro and Brengden, 2005] different early childhood and environmental factors foster their development, and distinct temperamental, physiological and genetic factors correlate with the two types of aggression. Reactive aggression is expected to originate from harsh, threatening and unpredictable environment, whereas proactive aggression develops in more supportive environments, where the child is, however, encouraged to use aggression as a way of achieving his or her goals [Dodge, 1991; Vitaro et al., 2006]. We expect that the nature of a child’s experience with military violence, i.e. whether the child is the direct target or simply a witness of atrocities, may be important for the occurrence of reactive or proactive aggression. Both theory and earlier research suggest that personal war experiences such as losing family members and being wounded are associated with reactive aggression, whereas threat from war and observing war violence are not related to reactive aggression [Keresteš, 2006; Punamäki, 1987].

We could find few studies that explicitly examined the association between war experiences and children’s and adolescents’ aggressiveness. A study among Croatian preschoolers compared physical and verbal aggression before and during the major war and atrocities, and found no changes in either type of aggression during the war [Raboteg-Šaric et al., 1994]. However, 10 years later in post-war conditions, the children and adolescents exposed to severe war trauma in preschool age showed higher level of aggressive behavior than less exposed [Keresteš, 2006]. A study among Israeli preschoolers confirmed that children who witnessed terrorist attack showed an increased level of aggressive behavior [Greenbaum, 2005]. Other studies have made implicit conclusions of children’s aggressive versus prosocial development, and the results are conflicting. Lack of aggressive responses has been reported among war traumatized Ugandan adolescents [Raundalen et al., 1987] and Lebanese children [Mackosoud and Aber, 1996], whereas personal exposure to severe losses and military violence was found to associate with aggressive responses among Palestinian children [Punamäki, 1987].

Research on children living in adverse conditions of community and family violence emphasizes that violence as such cannot be the reason for aggressive development. Impressive amounts of research show that community violence, involving chronic poverty, losses, criminality and gang fights, forms a risk for aggressiveness through multiple dysfunctional cognitive and emotional processes [Schwartz and Proctor, 2000] and failed or inadequate coping strategies and social support [Tolan et al., 1997]. Community violence has effects on child development through shaping their interpretations, norms, fantasies and cognitive scripts resulting in violent problem solving and aggressive behavior [Guerra et al., 2003]. In contrast, there is evidence that good family relations and optimal parenting practices can prevent aggressive development among children living in violent communities [Proctor, 2006]. Similarly, family violence does not predict children’s aggressive and antisocial behavior, if they are not over involved and use flexible coping strategies and adequate emotional and psychophysiological processing of their experiences [Haj-Yahia and Abdo-Kaloti, 2003; Rogers and Holmbeck, 1997].

Thus, the sole existence of war violence in children’s lives may not be sufficient to predict aggressiveness and antisocial behavior. To our knowledge, only the study by Keresteš [2006] has tested the hypothesis whether favorable child- and family-related factors moderate the association
between traumatic war experiences and children's aggressive behavior. However, in her representative sample of 12–15-year-old Croatians, positive, loving, warm and supporting parenting was not able to protect war-victimized children from engaging in high levels of reactive and proactive aggression. Our aim is to test the role of non-punitive and supportive parenting practices as a moderator between exposure to military violence and aggressive and antisocial behavior among Palestinian children.

There are important developmental changes and gender differences in the expression of aggression. Physical aggression and fights are most common among toddlers [Tremblay, 2000]. Aggressive behavior decreases with age, especially in middle childhood when there are considerable improvements in social skills, perspective taking, empathy and understanding of human relationships [Burks et al., 1999; Little et al., 2003]. However, another peak of aggressive behavior occurs in early adolescence, around 12–14 years of age. Thereafter physical fighting decreases considerably through adolescence and early adulthood [Loeber and Stouthamer-Loeber, 1998; Tremblay, 2000]. The aggressive behavior in early adolescence has been explained by simultaneous occurrence of demanding psychosocial and biological changes. Teens engage in intensive emotional relationships with peers and parents, meet increasingly challenging cognitive tasks at school and oscillate between maturity and child-likeness. These changes concur with highly negative emotions and parent–teen conflicts [Steinberg and Morris, 2001].

Recent sophisticated and comprehensive longitudinal studies have documented the existence of an “aggression peak” in early adolescence [Vitaro et al., 2006]. It is as likely that the “late starters” of aggressive and especially antisocial behavior are those children who were highly physically aggressive already in their toddlerhood [Brame et al., 2006]. Although our knowledge is limited, it is plausible that the general and steady decrease in reactive and physical aggression from early years, through middle childhood into adolescence is counteracted by an increase in proactive instrumental aggression in adolescence [Tremblay, 2000; Vitaro et al., 2006].

The distinct developmental changes in aggression are informative when analyzing children’s aggression when they are exposed to war conditions. The normative decrease in aggressive behavior requires personal resources and support from the family, school and society. The simultaneous occurrence of severe and provocative military violence and psychological and biological changes places great burden for cognitive, emotional and psychophysiological processes that underlie developmental decrease in aggressiveness. Therefore age-graded decrease in aggression may not occur among children exposed to severe military violence. In support of this idea, children living in violent communities have showed an increase in their aggressive behavior, fantasies and acceptance of aggressive solutions during the years from 5 to 12 [Guerra et al., 2003]. In other words, while in a peaceful environment aggression (especially reactive) decreased with age, in a violent environment aggression increased with age. Accordingly, we hypothesize that older children will show more aggressiveness (especially reactive aggressiveness) than younger when personally exposed to severe military violence in Palestine.

Boys and girls express aggression differently. Reactive, physical and direct aggression is more typical of boys and proactive, instrumental and indirect aggression to girls [Lagerspetz et al., 1988; Tapper and Boulton, 2000]. However, studies on relations between community violence and aggression in middle childhood have not found gender differences, rather exposure to violence increased aggression among both girls and boys [Guerra et al., 2003; Schwartz and Proctor, 2000]. As gender differences increase in adolescence, we may expect also gender-specific responses to military violence: the exposure is associated with reactive and direct aggression among boys and with proactive and indirect aggression among girls.

In the present work, we use two sets of data of Palestinian children and adolescents, collected in Gaza at times characterized by different degree of military violence, life threat, human losses and property destruction. Study I was conducted in 1997 during a relatively calm period of the Palestinian National Authority after the Israeli military had withdrawn from 65% of the occupied Gaza Strip, no fighting was going on and there were some hopes for a peaceful solution. On the contrary, study II was conducted during times of intensive violence in 2005 during the Al Aqsa Intifada that was characterized by extensive Israeli air raids, bulldozing and destruction of residential areas, targeted killing, cutting the Gaza Strip area in three by checkpoints and imposing a complete siege on the area.

Our research questions are: first, is exposure to severe military violence associated with children’s aggression, indicated by aggressive and antisocial behavior (study I) and reactive, proactive, direct and enjoyment aggression (study II). Second, we
examine whether supportive and non-punitive parenting practices moderate the possible link between exposure to military violence and aggression. Third, we analyze how child age and gender are associated with aggression in general and when the child is exposed to severe military violence. We hypothesize that younger children show generally higher levels of aggression than older, whereas older children show more aggression when exposed to severe military violence. Concerning gender, we hypothesize that girls show more proactive and boys reactive aggression, and especially so when exposed to severe military violence. Finally, we explore whether the nature of trauma has specific associations with different types of aggression. Direct victimization from military violence, involving being wounded and loss of family members, should be associated with reactive aggression, whereas witnessing of military violence, e.g., killing and destruction, should be associated with proactive aggression. Our general hypothesis also is that direct victimization from physical military violence is more likely to be associated with aggression than simply witnessing violence.

**STUDY I**

**Participants and Procedure of the Study**

The sample consists 640 children and adolescents from the Gaza Child Health Sample [Miller et al., 2000]. They were 6–16-year-old pupils ($M = 10.51 \pm 2.45$), and 54.7% were girls and 45.3% boys. Information was collected from parents and teachers concerning children of all age, and 12–16-year-old children and adolescents reported also themselves. The sample sizes differ for complete data of this analysis: 622 parent reports, 457 teacher reports and 211 self-reports by 12–16-year-old pupils.

A two-stage random sampling method was applied. First, schools were selected from a list of all schools in the Gaza Strip based on a stratified geographic location (town, refugee camp, village, resettled area). Second, a list was prepared from all pupils in these schools, using the stratification based on gender and age, and the allocated numbers of student were selected randomly from that list. Eight field workers (seven women) visited the homes of the selected pupils, obtained parental consent and then administrated the questionnaires to one of the parents and the child (if older than 11 years). In most cases the informant was mother (78%) or other female family member (7.9%) and the rest (16.1%) were the father or other male family member. Thereafter, the field workers met the principal teacher of the child at the school.

**Measures**

*Military violence* was assessed by an 18-event list, including ten items of the child being personally the victim of violence, e.g., being detained, wounded and beaten, losing family members and home demolition, and eight events of the child witnessing killing, fighting and destruction. The parent and child (if 12 years or older) were asked whether the child had been exposed to each of these events during the First Intifada: (0) no, (1) yes. If yes, they were also asked to estimate how many times the event occurred. Respondents had difficulty remembering the frequencies, and therefore a sum variable was constructed by counting only the occurrences of the traumatic events. Two scales were constructed from these data: the child’s victimization from one military violence—a scale consisting of ten events, ranging between 0 and 8 in the sample, and the child’s witnessing of military violence—a scale consisting of eight events, ranging between 0 and 5 in the sample. There was a correlation between the parent and child reports of the child’s victimization from military violence ($r = .57$, $P < 0.001, N = 192$) and between their reports of the child’s witnessing of military violence ($r = .64$, $P < 0.001, N = 192$). However, parent and child reports could not be combined into one variable because only children older than 11 years were interviewed. In this study only the parent-reported variables of military violence are used because of the larger samples size.

*Aggressiveness* was measured by scales of aggressive and antisocial behavior in Ontario Child Health Scale, an interviewer-administered checklist for parents, children and teachers [Boyle et al., 1987]. The scale consists of 34 questions that cover symptoms indicating conduct and emotional disorders, and attention deficit hyperactive disorder, formulated by using DSM-III criteria for disorders. The parents and teachers were asked to rate how well the items describe the child’s behavior, and children and adolescents were asked how well the items describe their own behavior. The alternatives were: (0) never true, (1) sometimes or somewhat true or (2) often or very true. For the purpose of this study, parent-reported, teacher-reported and children’s self-reported aggression sum variables were constructed. They included (a) nine symptoms of aggressive behavior, such as cruelty, bullying or meanness to other, physically attacks people, gets in many fights, and destroys things, and (b) nine
symptoms of antisocial behavior such as disobedience at school, threatens people, lies or cheats, steals outside home and runs away from home. Aggressive behavior scales ranged between 0 and 29 (\( M = 3.87 \pm 4.06 \)) for parent reports, between 0 and 33 (\( M = 3.65 \pm 4.73 \)) for teacher reports, and between 0 and 13 (\( M = 2.94 \pm 2.94 \)) for child reports. The Cronbach’s \( \alpha \) values are .87 for parents, .86 for teachers and .71 for children themselves.

Parenting practices were assessed by a nine-item scale applied from Barber [1999] indicating parents’ punitive, controlling and negotiating disciplining practices in a situation when the child has broken a rule. The choices were, for instance, ignoring the child’s behavior, making threats of punishment or calmly discussing the problem. Parents evaluated their own behavior toward the child, and children and adolescents evaluated their parents’ behavior toward themselves on a 3-point Likert scale: (1) never or rarely, (2) sometimes or (3) often or always. Parent-reported and child-reported sum variables were constructed, and they reached only moderate reliability (Cronbach \( \alpha = .64 \) for parents’ report and \( \alpha = .69 \) for children’s report). A high score on the scale indicates a negative (punitive) disciplining style and a low score indicates a positive (negotiating) style. In this study, only the parent-reported variable was used due to the larger sample size.

**RESULTS**

**Descriptive Statistics**

Table I shows the distribution of demographic variables in study I. Half of the families lived in urban areas and a quarter in refugee camps, which corresponded to the population distribution in Gaza [Unicef, 1992]. Concerning parental education, a fifth of fathers and a quarter of mothers had primary education. Of the fathers 12.5% and of the mothers 2.6% had the highest education, including university degree, and 13% of mothers and 8% of fathers had no formal education. The educational level of the sample accords the national statistics [Unicef, 1992]. Typical to the Gaza Strip, families were large and households relatively crowded: The mean number of children under 16 was 6.2 \pm 2.40, and mean number of people living in a household was 7.7 \pm 2.95.

Table II presents the correlations between the key variables separately for boys and girls. The correlations with age show that older boys and girls had been more directly victimized by military violence and had witnessed more military violence than younger children. However, age was not correlated with aggressive behavior whether reported by parents, teachers or children themselves. Among both girls and boys being victimized directly and witnessing military violence were both correlated positively with parent-reported aggressive behavior, and among boys witnessing military violence also was correlated with self-reported aggressive behavior (\( r = .19, P < .05 \)). In both gender groups being victimized directly and witnessing military violence were correlated positively, indicating that witnessing violence and being victimized are related.

Concerning parenting practices, older girls reported more punitive parenting than younger girls (\( r = .22, P = .01 \)), whereas age was not correlated with parenting among boys. Children’s aggressive and antisocial behaviors (parent- and teacher-reported) were correlated positively with punitive parenting practices among both boys and girls. Exposure to military violence did not correlate with parenting practices, however.

Positive significant correlations were found between aggressive and antisocial behavior variables that were based on parents’, teachers’ and children’s reports. There were no differences in the levels of parent-perceived, teacher-perceived and self-reported aggressive behavior according to paired \( t \)-tests.

### TABLE I. Percentages and Frequencies of Demographic Factors in the Sample in the Study 1

<table>
<thead>
<tr>
<th>Sample</th>
<th>%</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age groups (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–10</td>
<td>54.5</td>
<td>348</td>
</tr>
<tr>
<td>11–13</td>
<td>24.1</td>
<td>154</td>
</tr>
<tr>
<td>14–16</td>
<td>21.4</td>
<td>137</td>
</tr>
<tr>
<td>Place of residency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban area</td>
<td>46.3</td>
<td>295</td>
</tr>
<tr>
<td>Refugee camp</td>
<td>24.6</td>
<td>157</td>
</tr>
<tr>
<td>Village</td>
<td>20.6</td>
<td>131</td>
</tr>
<tr>
<td>Resettled area</td>
<td>8.5</td>
<td>54</td>
</tr>
<tr>
<td>Mother education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>13.2</td>
<td>84</td>
</tr>
<tr>
<td>Elementary school (Gr 1–6)</td>
<td>20.2</td>
<td>129</td>
</tr>
<tr>
<td>Preparatory school (Gr 7–9)</td>
<td>26.1</td>
<td>167</td>
</tr>
<tr>
<td>Secondary school (Gr 10–12)*</td>
<td>34.5</td>
<td>220</td>
</tr>
<tr>
<td>Post secondary b</td>
<td>6.0</td>
<td>38</td>
</tr>
<tr>
<td>Father education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No education</td>
<td>7.9</td>
<td>51</td>
</tr>
<tr>
<td>Elementary school (Gr 1–6 )</td>
<td>26.7</td>
<td>170</td>
</tr>
<tr>
<td>Preparatory school (Gr 7–9)</td>
<td>22.2</td>
<td>142</td>
</tr>
<tr>
<td>Secondary school (Gr 10–12)*</td>
<td>24.4</td>
<td>156</td>
</tr>
<tr>
<td>Post secondary b</td>
<td>18.7</td>
<td>119</td>
</tr>
</tbody>
</table>

Sample sizes differ due to missing values.

*Includes vocational school and gymnasium.

bIncludes also university education.
The results in Table III show that the models for children’s aggressive and antisocial behavior differed according to the nature of military violence and the source of the information. The model explained 13% of the variation of the parent-reported and only 6% of the teacher-reported child aggression. The model was non-significant for children’s own reported aggression.

A significant association was found between children witnessing military violence and their parent-reported aggressive behavior (β = 0.11, t = 2.09, P < .04). Children who had witnessed high levels of military violence expressed higher level of aggressive and antisocial behavior than children exposed to lower levels of witnessing violence. The significant age × victimized directly by military violence interaction effect (β = −0.12, t = −2.35, P < .02) further revealed that younger children showed especially high-level aggressive behavior (parent-reported) when they were highly victimized directly by military violence, illustrated in Figure 1. Our general hypothesis that being victimized directly by military violence would be associated with aggressive and antisocial behavior was thus supported only among the younger children.

As hypothesized, boys showed more aggressive behavior than girls, as perceived by parents and teachers. Association between exposure to military violence and aggression was not gender specific, as the non-significant gender × military violence interaction effects show. Against our hypothesis younger children showed more aggressive and antisocial behavior than older, and especially so when directly victimized by military violence.

The hypothesis that parenting practices would moderate the relation between experiencing military violence and aggression was supported. Significant interaction effects indicate that both being directly victimized (β = −0.18, t = −2.51, P < .01) and witnessing (β = −0.15, t = −2.31, P < .02) military violence were associated with teacher-reported aggression more among children whose parents were punitive and non-supportive. The moderator effects are illustrated in

**Military Violence, Gender, Age, Parenting and Aggressive Behavior**

Hierarchical multiple regression analyses with main and interaction effects were used to examine the associations between military violence and aggressive behavior, and the moderator role of gender, age and parenting practices in the possible association. The dimensions of parent-, teacher- and child-reported aggressive and antisocial behavior were the dependent variables. The model included three main effect and two interaction effect steps. In the step 1 gender and age were entered, in step 2 parent-reported variables of child being victimized directly by and witnessing military violence were entered, and in step 3 the parent-reported punitive parenting practices variable was entered. In step 4 the interaction terms between demographic (gender and age) and military violence (being victimized directly and witnessing) were entered. Finally, in step 5 the military violence × parenting practices interaction terms were entered. All predictors in the interaction terms were first centered to avoid multicollinearity between variables, as recommended by Aiken and West [1991].

The results in Table III show that the models for children’s aggressive and antisocial behavior differed according to the nature of military violence and the source of the information. The model explained 13% of the variation of the parent-reported and only 6% of the teacher-reported child aggression. The model was non-significant for children’s own reported aggression.
Figures 2 and 3. Although the model for child-reported aggression was non-significant, a significant negative interaction effect ($\beta = -0.31$, $t = -2.30$, $P < .02$) indicates that being victimized directly by military violence was associated with aggressive and antisocial behavior more among children with punitive and non-supportive parents. Main effects confirmed that high punitive parenting practices were associated with children’s aggressive and antisocial behavior as perceived by parents and teachers.

### TABLE III. Hierarchical Linear Regressions Predicting Different Measures of Child Aggression From the Child’s Exposure to Military Violence and Parenting Practices

<table>
<thead>
<tr>
<th>Step</th>
<th>Demographic</th>
<th>Parent reports</th>
<th>Teacher reports</th>
<th>Child reports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2$</td>
<td>Change in $R^2$</td>
<td>$\beta^b$</td>
<td>$R^2$</td>
</tr>
<tr>
<td>Step 1. Demographic</td>
<td>.04</td>
<td>.04***</td>
<td>.03</td>
<td>.03***</td>
</tr>
<tr>
<td>Gender (1 = boys, 2 = girls)</td>
<td></td>
<td></td>
<td>$-0.19^{***}$</td>
<td>$-0.16^{***}$</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>$-0.17^{***}$</td>
<td>$-0.09^{***}$</td>
</tr>
<tr>
<td>Step 2. Parent-reported military trauma</td>
<td>.09</td>
<td>.05***</td>
<td>.03</td>
<td>.00</td>
</tr>
<tr>
<td>Victimized directly by military violence</td>
<td></td>
<td></td>
<td>.01</td>
<td>.10</td>
</tr>
<tr>
<td>Witnessing military violence</td>
<td></td>
<td></td>
<td>.11*</td>
<td>.03</td>
</tr>
<tr>
<td>Step 3. Punitive parenting practices</td>
<td>.11</td>
<td>.02*</td>
<td>.04</td>
<td>.01**</td>
</tr>
<tr>
<td>Gender × victimized directly</td>
<td></td>
<td></td>
<td>$-0.01$</td>
<td>.04</td>
</tr>
<tr>
<td>Gender × witnessing violence</td>
<td></td>
<td></td>
<td>.03</td>
<td>.06</td>
</tr>
<tr>
<td>Age × victimized directly</td>
<td></td>
<td></td>
<td>$-0.12^*$</td>
<td>.01</td>
</tr>
<tr>
<td>Age × witnessing violence</td>
<td></td>
<td></td>
<td>$-0.06$</td>
<td>.05</td>
</tr>
<tr>
<td>Step 4. Demographic × military violence interactions</td>
<td>.13</td>
<td>.02*</td>
<td>.04</td>
<td>.00</td>
</tr>
<tr>
<td>Gender × victimized directly</td>
<td></td>
<td></td>
<td>$-0.01$</td>
<td>.04</td>
</tr>
<tr>
<td>Gender × witnessing violence</td>
<td></td>
<td></td>
<td>.03</td>
<td>.06</td>
</tr>
<tr>
<td>Age × victimized directly</td>
<td></td>
<td></td>
<td>$-0.12^*$</td>
<td>.01</td>
</tr>
<tr>
<td>Age × witnessing violence</td>
<td></td>
<td></td>
<td>$-0.06$</td>
<td>.05</td>
</tr>
<tr>
<td>Step 5. Military violence × punitive parenting practices interactions</td>
<td>.13</td>
<td>.00</td>
<td>.06</td>
<td>.02*</td>
</tr>
<tr>
<td>Victimized directly × punitive parenting</td>
<td></td>
<td></td>
<td>.02</td>
<td>$-0.18^{**}$</td>
</tr>
<tr>
<td>Witnessing violence × punitive parenting</td>
<td></td>
<td></td>
<td>.03</td>
<td>$-0.15^*$</td>
</tr>
<tr>
<td>Total model</td>
<td></td>
<td></td>
<td>$F(11,537) = 7.10$, $P &lt; .0001$, 13% of the variance explained</td>
<td></td>
</tr>
</tbody>
</table>

The parent and teacher reported aggression involves children of all ages and the child-reported the 12–16-year olds.

$\beta^b$ values from the final step in the total model.

* $P < .05$; ** $P < .01$; *** $P < .001$; **** $P < .10$.

### Fig. 1. The association between a child being victimized directly by military trauma and the child's aggression as reported by the parents as a function of the child's age.

### Fig. 2. The interactive effect of a child being directly victimized by military violence and parenting practices on the child’s aggression (teacher-reported)

### STUDY II

#### Participants and Procedure of the Study

The participants were 225 Palestinian school children in the Gaza Strip. Of them 39% were girls and 64% boys, and their age ranged between 10 and 15 years ($M = 11.37 \pm 1.1$). The data were collected as a part of an intervention study, and the analysis for study II is based on the base line assessment for the intervention. Four school classes in two schools...
in Northern Gaza were recruited to participate in the study. A majority of children (60.9%) lived in urban areas, 20.9% in refugee camps, 9.3% in a village and 8.9% in resettled areas.

Two of the schools were located in areas where the Israeli fighter jets, tanks and bulldozers had caused considerable destruction during the Al Aqsa Intifada, and two schools were situated in safer areas. The whole Gaza Strip has suffered a high toll of victims since 2001 when the confrontations started. According to Palestinian Center for Human Right [PCHR-Report, 2006], 2,268 people have been killed and 36,589 have been injured. The total number of children killed is 931 as results of shelling their homes and schools, and shooting at checkpoints. Substantial restriction of moment has been imposed, and consequently a number of deaths are due to delayed first aid. For instance, 31 infants have died at checkpoints because of prevented delivery. With regard to the impact of the military violence on education, 576 of the students had been killed and 669 injured, and more than 200 of teachers have been detained, injured or killed. Of the originally small area of the Gaza Strip, 249,729 Dunum of land had been confiscated and 64,043 Dunum had been razed down (Dunum = 1,000m²) [PCHR-Report, 2006]. In other words the sample II represents children who live in acutely life-endangering environment.

Measures

Military trauma was measured by a 25-item event list developed by the Gaza Community Mental Health Programme to catch typical experiences of Gaza Palestinians during the Al-Aqsa Intifada [Qouta et al., 2005]. The questionnaire involves 12 items of being victimized directly by the military violence the target of violence (e.g., shelling of home, being detained, wounded and beaten, losing a family member) and 13 events of witnessing military violence such as killing, injuring, house demolition and bulldozing orchards. The children responded by indicating whether they had been exposed to the event (1 = yes) or not (0 = no). Similar to study I, two sum variables were formed for the purpose of this study: the child’s victimization directly by military violence—a scale consisting of 12 events, ranging between 0 and 9 in the sample, and the child’s witnessing of military violence—a scale consisting of 13 events, ranging between 0 and 11 in the sample.

Aggressiveness was measured by a Multiple Aggression questionnaire developed and standardized in Arab populations by Amal Abaza from Tanta university, Egypt [Abaza, 2003]. The questionnaire consists of 41 descriptions of behavior, thinking and feelings, and children estimated on a 4-point scale how well they fit them (1) not at all, (2) to some extent, (3) quite well, and (4) very well. The Multiple Aggression questionnaire depicts three qualitatively different aggression dimensions: reactive, proactive and aggression enjoyment. We conducted a factor analysis (Varimax with orthogonal rotation) to confirm the dimensionality in our data, and it turned out to be technically adequate explaining 40.6% of the variation. The reactive aggression subscale consists of 14 items, such as “Sometimes I toss and harm my classmate without any reason”, “I prefer to fight with children who are less strong or more miserable than I”, “I destroy things in the class, although I would be punished for that”. The reactive aggression dimension accounts for 17.3% of the total variance of the scale, and the Cronbach’s α value was .85. The proactive aggression dimension also has 14 items, such as “I easily start to humiliate verbally my school mates”, “I feel happy when any school mate makes mistakes and the teacher scolds him”, “I like playing tricks to other pupils”. The proactive aggression dimension accounts 12.2% of the variance, and the Cronbach’s α value was .83. Finally, the aggression-enjoyment dimension involves 13 items describing a kind of vicarious enjoyment of aggression, e.g., “I prefer war and risk-taking actions”, “I feel happy when I see animals fighting” and “It is easy to let my classmates to be afraid”. The aggression-enjoyment dimension accounted 11.1% of the variation and the Cronbach’s α value was .73.

RESULTS

Correlations

Table IV shows correlations between the key variables separately for boys and girls. Results show
that older boys had been more directly victimized by military violence than younger boys ($r = .21, P < .01$), and older girls had witnessed more military violence than younger girls ($r = .36, P < .001$). Age did not significantly correlate with aggression among boys, but among girls there was a marginally significant negative correlation between age and aggression-enjoyment ($r = -.21, P < .06$), indicating a decreasing enjoyment of aggression. Witnessing military violence was correlated positively with all three aggression measures among boys, and with proactive aggression and aggression-enjoyment among girls. For boys being victimized directly by military violence was correlated positively with reactive aggression ($r = .22, P = .009$) and marginally with proactive aggression ($r = .14, P < .09$).

Among both genders being victimized directly by military violence and witnessing violence correlated significantly as expected. All three aggression measures also significantly correlated, indicating an overlap, for instance, between reactive and proactive aggression among both boys ($r = .69, P < .0001$) and girls ($r = .68, P < .0001$).

**Military Violence, Gender, Age and Aggressive Behavior**

Similar to study I, associations between military violence and aggressiveness and the role of gender and age in this association were tested with hierarchical multiple regression analyses with main and interaction effects. The dimensions of proactive, reactive aggression and aggression-enjoyment were the dependent variables. The model included two main effect and one-interaction effect steps. In step 1 gender and age were added, in step 2 being victimized directly and witnessing military violence were added, and in step 3 interaction terms between the demographic and military violence variables were entered. Parenting variables were not available in this study; so they could not be included in the regressions. As in study I all predictors in the interaction terms were first centered to avoid multicollinearity between variables, as recommended by Aiken and West [1991].

Results in Table V show that the models were significant for all three aggression measures and the explained variance varied between 18 and 20%. Children exposed to high level of witnessing of military violence reported higher levels of proactive aggression ($β = .20, t = 2.57, P < .01$), reactive aggression ($β = .23, t = 3.11, P < .002$) and enjoyment of aggression ($β = .17, t = 2.19, P < .03$) than those exposed to lower levels. However, being victimized directly by military violence was not associated significantly with any of the three child aggression measures.

Boys reported higher levels of all types of aggression than girls, including proactive aggression that we had expected to be higher among girls. The non-significant gender × military violence interaction effects indicate that the association between military violence and aggression did not depend on gender. In other words, witnessing military violence had similar associations with aggressiveness among both girls and boys.

Our general hypothesis of older children showing more aggressive behavior, especially reactive aggression, was not confirmed. On the contrary, younger children reported marginally more proactive aggression than older ($β = -.12, t = 1.75, P < .08$). The interaction effects between age and military violence on aggression were non-significant, indicating that the association between witnessing military violence and children's aggression was present for all ages.

**DISCUSSION**

The results of study I among Palestinian children confirmed that exposure to severe military violence...
was associated with higher levels of aggressive and antisocial behavior. Although both victimization and witnessing violence correlated with aggressive behavior among both genders, regression models with main and interaction effects revealed that only the witnessing of killing and destruction predicted aggression when demographics were included in the model. As hypothesized, supportive and non-punitive parenting practices protected children from aggressive and antisocial behavior, even if they were severely victimized by or witnessing military violence.

Similar to Kerestes’ [2006] study the association between military violence and child aggression was dependent on the source of information, i.e. whether children themselves, their parents or teachers reported their aggressive behavior. In our data, exposure to military violence was associated only with parent-perceived aggressive behavior, whereas in the Croatian sample severe war trauma predicted child-reported aggressiveness. In our study, the protective role of optimal parenting practices in turn was evident in teacher- and child-reported aggression, but not in parent-perceived, whereas parenting had no protective role in the Kerestes’ study.

Similar to research in peaceful societies [Leinonen et al., 2002; Pakaslahti, 2000], punitive parenting practices were significantly associated with aggressive behavior among both girls and boys. Military violence was not, however, associated with punitive parenting practices. This finding contradicts our observations during the First Intifada that intensified military trauma interferes with parenting resources. In that study in highly traumatized Palestinian families, children were found to perceived their parents more punitive and harsh, which in turn negatively affected children’s cognitive resources and psychological adjustment [Punamäki et al., 1997]. Study I was conducted during a calmer and safer period than the First Intifada, and it is possible that then parenting practices were recovering from harsh experiences of military violence.

The results of study II based on cross-sectional single-report setting confirmed the results of the study I that children who had witnessed severe military violence showed more aggression than less exposed children. Witnessing killing, wounding and destruction or being victimized during the Al Aqsa Intifada was generally associated with both reactive and proactive aggression, as well as with aggression-enjoyment though there were some differences between genders as summarized below.

Correlation analyses revealed some gender-specific phenomena. First, boys were more likely to be victimized as they got older, whereas girls were more likely to witness violence as they got older. The gender roles in the Palestinian national struggle determine that boys are more active, participate more often in military actions and are more often targets of the enemy fire, whereas girls witness atrocities befalling their close ones [Punamäki et al.,

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TABLE V. Hierarchical Linear Regressions Predicting Different Measures of Child Aggression From the Child’s Gender, Age, and Exposure to Military Violence

<table>
<thead>
<tr>
<th></th>
<th>Proactive aggression</th>
<th>Reactive aggression</th>
<th>Enjoyment of aggression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R^2$</td>
<td>Change in $R^2$</td>
<td>$\beta^a$</td>
</tr>
<tr>
<td>Step 1. Demographic</td>
<td>.10</td>
<td>.10***</td>
<td></td>
</tr>
<tr>
<td>Gender (1 = boys, 2 = girls)</td>
<td>$-2.2^{****}$</td>
<td></td>
<td>$-3.2^{****}$</td>
</tr>
<tr>
<td>Age</td>
<td>$-1.2^*$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2. Child-reported military trauma</td>
<td>.16</td>
<td>.06***</td>
<td></td>
</tr>
<tr>
<td>Victimized directly by military violence</td>
<td>.03</td>
<td></td>
<td>.01</td>
</tr>
<tr>
<td>Witnessing military violence</td>
<td>$.20^{**}$</td>
<td></td>
<td>$.23^{**}</td>
</tr>
<tr>
<td>Step 3. Demographic $\times$ military violence interactions</td>
<td>.18</td>
<td>.02</td>
<td>$.20</td>
</tr>
<tr>
<td>Gender $\times$ victimized directly</td>
<td>$-0.5$</td>
<td></td>
<td>$-0.6$</td>
</tr>
<tr>
<td>Gender $\times$ witnessing violence</td>
<td>$0.08$</td>
<td></td>
<td>$-0.3$</td>
</tr>
<tr>
<td>Age $\times$ victimized directly</td>
<td>$-0.08$</td>
<td></td>
<td>$-0.10$</td>
</tr>
<tr>
<td>Age $\times$ witnessing violence</td>
<td>$-0.01$</td>
<td></td>
<td>$-0.01$</td>
</tr>
<tr>
<td>Total model</td>
<td>$F(8,215) = 5.96,$</td>
<td></td>
<td>$P &lt; .0001$, 18% explained variance</td>
</tr>
</tbody>
</table>

$^a$ -values from the final step in the total model.
$^+P < .10$, $^*P < .05$, $^{**}P < .01$, $^{***}P < .001$, $^{****}P < .0001$. 

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Second, as hypothesized, military violence was correlated positively with proactive but not with reactive aggression among girls. However, among boys being victimized by military violence was associated with higher levels of both reactive and proactive aggression, thus opposing our gender-specific hypothesis concerning the type of aggression.

Implications

War and military violence signify a shattering and nightmarish reality for children: life threat, loss of home, killing and detention of family members, and witnessing humiliation of trusted and admired adults. According to psychoanalytical view, human beings have two possibilities to deal with pain and bewilderment that overwhelms their cognitive-emotional processing capacity: to turn them inside and suffer subsequently from depression and anxiety or target them outside in the form of aggression and acting out [Pedder, 1992]. Contemporary conceptualization of children’s psychiatric distress as internalizing and externalizing symptoms [Achenbach, 1997; Rutter, 1967] concurs with these alternatives given for humans when facing devastating events.

We have substantial amount of research showing that war and military violence increase risks for depressive symptoms and anxiety disorders, including posttraumatic stress disorder characterized by intrusive, avoidant and arousal symptoms [Brajša-Zganec, 2005; Smith et al., 2002; Thabet et al., 2005]. Researchers thus implicitly expect victims of war to turn their pain inwards into themselves rather than to act it out into environment. The current two studies add a different dimension. Our results confirm that exposure to military violence also promotes acting out and aggressive behavior in both boys and girls. We found consistent associations between Palestinian children’s aggressive responses and their personal exposure to military violence. The association was valid both in periods of relative calm and intensified military activity in Gaza. Yet, we also witnessed the power of favorable family relations in mitigating the negative impact of war on child aggression and antisocial behavior.

The association between exposure to military violence and aggressiveness did not depend on the intensity and acuteness of objective external danger. The study I was conducted in conditions of very rare lull in fighting and destruction in Gaza, and, on the contrary, the study II in the midst of shelling, fighting, sonic bombing and bulldozing houses and land. What is remarkable is that in both studies it was the witnessing of atrocities toward others that was decisive for child aggression, rather than being victimized themselves. In both studies the direct victimization and witnessing military violence were correlated positively, but in regression models the witnessing proved to be more important determinant of aggression.

Thus, our hypothesis that direct child-targeted victimization from military violence is more dangerous and thus a better candidate for predicting aggression may not correspond with experiences of children living in chronic violence. The underlying mechanisms and subsequent outcomes are apparently different among witnessing destruction, cruelties, and humiliation and harming family members. Being victimized by military actions, although harsh, can involve secondary gains such as heroism and belonging in national struggle against foreign occupation. The victims may receive social support, admiration and encouragements, which further encourage their endurance [Qouta et al., 2003]. On the contrary, witnessing violence to others can evoke feelings of frustration, impotence and cowardliness, which then find expression in aggression. Although direct victimization is collective, visible and pride-evoking, witnessing violence toward family members, for instance, often involves feelings of shame, disillusion and helplessness.

The vulnerability to aggressive and antisocial behavior in war conditions illustrates an intensive interplay between child characteristics and violence environment. Developmental demands, such as emotion regulation and adequate anger expression, are highly demanding even in normal and safe childhood conditions. With age children develop qualitatively new cognitive, emotional and social activities, which result in a decrease in physical aggression. For instance, adolescents’ brain development is characterized by intensifying of complex associative connections, which allows a wider repertoire of problem solving and memorizing, emotion regulation and understanding of one’s own and others’ complex emotional and motivational processes [Kagan, 2003; Spear, 2000]. They in turn form the preconditions for highly sophisticated moral reasoning and consideration for peaceful values, social justice and empathy. However, children and adolescents need societal support and encouragement to succeed in these developmental changes, which makes possible the decrease in aggression and increase in prosocial behavior.

War and national struggle as a context for child development do not provide these societal precondi-
tions for decreased aggressiveness. Freud and Burlingham [1943] argued during the Second World War that the outside reality of bombardments, filled with destruction, cruelty and aggression is in concordance with preschoolers' inner world. They described how excessive external destruction and violence made it difficult for toddlers to regulate their angry impulses, and made them therefore prone to aggressive development. Children who simultaneously face demands of both developmental transitions and war trauma are especially vulnerable to dysfunctional emotion regulation, including aggression. Contemporary longitudinal studies confirm that physical aggression is most evident in the first 3 years of life [Trembley et al., 2004], Tremblay [2002], opposing the social learning theory [Bandura, 1973], suggests that children do not learn to be physically aggressive, but that they rather learn not to be physically aggressive under the combined effects of socialization and brain maturation. Subsequently, we may hypothesize that war and violence are especially harmful for children who struggle with their developmental transitions, and the belligerent scenes interfere with their age-graded learning of non-aggression.

The importance of the concordance between aggressive development and external reality was well illustrated by Guerra et al. [2003]. They showed an increase of aggressive schemes and behavior in elementary school years among children who witnessed and were victimized by community violence. Normative beliefs and acceptance of aggressive solutions became thus stable personality features during children's formative years. The results by Kerestes [2006] are important because they show a long-term impact of war and atrocities on child development. The Croatian children who were exposed to war trauma in their preschool years showed more reactive and proactive aggression when entering their adolescence. It is possible that the transition to adolescence among post-war youth is activating their earlier childhood traumatic memories, which explains the longitudinal link between being victimized by war violence and aggression.

Society at war sends double messages to children who until early adolescence face difficulties in interpreting them: the aggression, defiance and revenge are encouraged toward the enemy, but discouraged or even punished when directed toward own family and peers. Similarly, research on children's war attitudes and moral development point out dilemmas and conflicts: children learn that war is generally bad and immoral, but our own war is heroic, legitimate and moral and our fighters are pure and honorable, whereas enemy soldiers are cruel and coward-like [Punamäki, 1987; Tolley, 1973].

We should, however, be careful not to ignore alternative explanations for children's aggression than military trauma. Three major issues are relevant. First, proximal influence of parents, siblings and peers might be more powerful than more distal military violence. We confirmed that punitive parenting both associated with child aggression and strengthened the violence-aggression link. For deeper understanding, the analyses should include parental norms about the appropriateness of aggression as well as ways of solving conflicts between siblings and peers. Second, a more sophisticated model is needed to reveal the child-related mechanisms that explain the occurrence of aggression in wartime societies. The information processing model provides an integrative framework and can explain why some children in the similar violent and life-endangering environment are aggressive, whereas others are proactive, show depression or remind intact [Anderson and Bushman, 2002; Crick and Dodge, 1994]. There is a multi-stage process by which the interplay between child characteristics (e.g. age, gender, temperament, trait hostility, attitudes to war, emotional regulation and physiological stress reactions) and situational factors (e.g. nature and meaning of trauma, degree and significance of humiliation and life danger) leads to aggressive behavior. Aggression, in turn needs specific changes and preconditions in children's cognitive, affective and arousal states. Future study settings should answer how being a target or witnessing military violence in certain age influence children's cognitions like attention, memory and attributions, and emotions like fear, anger and hostility. Third, societal and cultural determinants of aggressive behavior should be analyzed. We do not know how national history interpretation of collective experiences and cultural codes can prime or hinder aggressive thoughts and scripts, increase hostile feelings and regulate anger expression on individual level.

The study deserves further criticism for conceptual and measurement issues. The results of the study II are based on single-informant setting leading to possible biased response tendencies. Children might have exaggerated or belittled both their traumatic experiences and aggressive responses. Although the study I was based on multi-informant setting, the significant direct relation between violence exposure and aggressive behavior was found in parents'
reports thus again raising concern of same-informant bias. Naturally, reliance on parents’ and children’s self-reports about traumatic events in conditions of military occupation deserves criticism. To have a more reliable and objective data, we should have consulted international and local human right organizations that document events of military violence. Despite our efforts in study I, we failed to obtain more detailed information about the timing, intensity, duration and subjective appraisal about the severity of traumatic events. Furthermore, the conceptualization and measurements of aggression differed in the two samples. Therefore, we cannot genuinely answer the question whether the objective level of military violence, life threat and destruction has an impact on the level of child aggression.

Our study should be regarded as a first explorative step, the next being the hypothesis testing about underlying mechanisms explaining how collective level phenomena, war violence, is processed in individual levels of cognitive, emotional, social and brain functioning, and in turn transferred into political and military activity. Advances in aggression research, such as psychophysiological and genetic findings [Caspi et al., 2002] should be applied for the question about war begetting aggression. Understanding of multilevel and dynamic psychological processes that military violence activates is necessary for tailored, developmentally and culturally adequate intervention and prevention among traumatized children and for peace education.

REFERENCES


